Cardiology

Two case of successful withdrawal of a migrated silicone port catheter fragment

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Background: silicone port catheter has been used widely in clinics. These catheters are also recommended for children and infants receiving chemotherapy. In this paper, we present two case of with migrated silicone port catheter fragment into the heart.

Case report: CASE 1: After one period of chemotherapy in a 2.5 year old girl with acute lymphoblastic leukemia during catheter removal one fragment of it embolized to heart. Catheter Tip snaring performed by long sheet 8 F successfully. CASE 2: A 6years old boy with a migrated port catheter to the heart was referred to our clinic. In the cath lab with the guide of fluoroscopy catheter tip was snared and then pulled back into the 9 F long sheet successfully.

Conclusion: A rare complication in the use of central catheters is fraction and cardiac embolization. We offer gentle bringing out of the catheter lines under fluoroscopy guide in all of the cases, if this is technically possible and safe.

Keywords: common cold, Anasarca Edema, Restrictive Pericarditis

Anasarca Edema in a 9-year-old boy who experienced common cold recently

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Constrictive pericarditis in children is a very rare and usually difficult to diagnosis disease, which characterized by the appearance of signs and symptoms of right heart failure due to loss of pericardial compliance and restricting diastolic filling.

We are presenting a 9-year-old boy, with a history of recent common cold, who was brought to our emergency clinic of our center with progressive edema of both lower extremities, scrotal area and orbits since 1 week ago. The investigations revealed a transudative pericardial effusion due to constrictive pericarditis compatible to adenovirus infection. Although acute pericardial constriction is reported to respond to anti inflammatory agents, this patient is eventually proceed to surgical treatment. Constrictive pericarditis, an uncommon disease in children, is inflammation of the pericardium, which results in constriction in conjunction with the presence of pericardial fluid under pressure. When pericardium is constricted it limits the normal distension of the myocardium, preventing cardiac filling which can turn to cardiac tamponade.

There are two variants of constrictive pericarditis: a chronic form, which usually occurs following recurrent pericarditis, cardiac surgery, or radiation to the mediastinum as a treatment for malignancies. And acute pericardial constriction, which is usually a rapidly developing form, following an attack of effusive pericarditis, may be more due to infectious reasons.

Keywords: common cold, Anasarca Edema, Restrictive Pericarditis

Evaluation of Left ventricular function in children with cancer who are treated with Anthracycline by 2dimensional global longitudinal strain with automated functional imaging (AFI)


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Background: Despite high effectiveness of anthraclin as a potent antineoplastic agent, its-related cardiothoxicity is the most notorious complication. The present study thus aimed to assess left ventricular functional status by assessing two-dimensional global longitudinal strain using Automated Function Imaging technique in children with cancers who received anthracycline.

Methods: This cross-sectional study was performed on 22 new diagnosed cancer patients aged 18 years or younger who referred to children medical center in Tehran in 2016 as the cases and also 22 age-matched healthy children who referred to the center because of any non-cardiac reasons as the control. All participants were assessed to determine left ventricular functional indices before and also one month after starting the therapeutic regimen containing anthracycline.

Results: Among all parameters assessed by echocardiography, only the mitral annular peak systolic velocity (Sm) significantly reduced after administrating anthracycline compared to before that. Compared to healthy subjects, the cancer group had lower E’ (13.83 ± 3.90 versus 17.47 ± 3.14, p = 0.006), higher left ventricular Tei index (0.39 ± 0.07 versus 0.33 ± 0.07, p = 0.01), lower left ventricular ejection fraction (57.61 ± 8.44% versus 63.40 ± 4.45%, p = 0.04), and also higher LVIDd (3.72 ± 0.39 versus 3.29 ± 0.54, p = 0.01) after using anthracycline.
Regarding segmental strain rates (Table 2), the group received anthracycline had significantly higher basal anterior, basal inferolateral, basal anterolateral, and also mid anterior strains when compared to the control group after intervention.

**Conclusion:** Alteration in left ventricular functional indices and strain pattern is potentially predicted following administration of anthracycline in children cancer patients.

**Keywords:** Cardiovascular Disease, Left Ventricular Function, Automated Functional Imaging

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**The assessment of Fetal Doppler mechanical PR interval and its main correlates among fetuses**

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**Background:** Prenatal early diagnosis of congenital heart diseases is very important to improve care of women and newborns. Early stillbirth is often the result of complex heart defects or undetected fetal heart irregularities. There have not been conducted a comprehensive research on heart conduction disturbances in the fetus and the possibility of preventing stability of these changes. The present study aimed to assess the mechanical PR interval and its main correlates in Iranian neonates using Doppler echocardiography.

**Methods:** This cross-sectional study was conducted on 101 pregnant women referred to fetal echocardiography center in Children Medical Center from 2014 to 2015. The mechanical Doppler PR interval was measured using a pulsed wave of the fetal heart to obtain the measurements. The two-dimensional directed pulsed Doppler gate was placed distal to the mitral valve at an angle of 20° with respect to the long axis of the left ventricular outflow tract.

**Results:** We evaluated 119 fetuses at 14 to 38 weeks. The mean ± SD FHR was 148.2 ± 7.2 beats per min (bpm). The PR intervals had a typical Gaussian distribution with a mean ± SD of 111.7 ± 8.9 ms (95% Confidence Interval: 11.0 to 113.3). Robust linear regression showed that the PR increased by about 0.73 ms per gestational week (P < 0.001), and this relationship remained after adjustment for FHR, mother age, and fetal sex. Also, similar regression modeling indicated that the PR reduced by about 0.22 ms with each unit increase in fetal heart rate.

**Conclusion:** We provide normal fetal values for the mechanical PR interval at 14–38 weeks of gestation. Mechanical PR intervals in Iranian normal fetuses are affected by GA and FHR independently, and both variables should be taken into account when evaluating fetuses at risk for congenital heart block.

**Keywords:** Fetus; PR interval; heart block; Doppler echocardiography

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**Metabolic Myopathies**

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The metabolic myopathies result from inborn errors of metabolism affecting intracellular energy production due to defects in glycogen, lipid, adenine nucleotides, and mitochondrial metabolism. Metabolic myopathies should be considered in the differential diagnosis of patients with exercise-induced muscle symptoms, static or progressive myopathy, isolated neuromuscular respiratory weakness, and muscle disease associated with systemic conditions. Our knowledge of metabolic myopathies has expanded rapidly in recent years, providing us with major advances in the detection of genetic and biochemical defects. New and improved diagnostic tools are now available for some of these disorders, and targeted therapies for specific biochemical deficits have been developed. The diagnostic approach for patients with suspected metabolic myopathy should start with the recognition of a static or dynamic pattern (fixed versus exercise-induced weakness). Individual presentations vary according to age of onset and the severity of each particular biochemical dysfunction. Additional clinical clues include the presence of multisystem disease, family history, and laboratory characteristics.

**Keywords:** Metabolic Myopathies, glycogen, lipid, mitochondrial

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**Evaluation of Left Ventricular Function Using Tissue Doppler Echocardiography in Patients after Renal Transplant**

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**Background.** Despite good outcomes of renal transplantation (RT), Cardiovascular disease is the major cause of death in adults. These abnormalities become more important because of improved life span of children after successful RT. Few data are available regarding the effect of RT on left ventricular (LV) function or LV mass regression in children. The aim of this study was to investigate the effect of RT in cardiac structure and function assessed by echocardiography and measurement of serum N-terminal pro B-type natriuretic peptide (pro-BNP) level.

**Methods.** Twenty patients (mean age: 12±3. 1 years,
45% male) with RT for a median time of 2.8 years (range 0.9-3.5) were compared to 30 age-matched healthy controls. Standard echocardiography was performed and myocardial performance index (MPI), as a noninvasive index for assessing global LV function, was calculated. Results. The mean value of MPI of the patients was significantly different from those of the control subjects (0.47±0.09 vs. 0.37±0.02, p. 

**Keywords:** Kidney Transplant, Cardiac Function, Echocardiography

**Pediatric Metabolic Cardiomyopathy**

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Cardiomyopathy occurs in approximately 5% of patients with inborn error of metabolism (IEM). The most common cardiac involvement in IEM is hypertrophy, with or without dilatation. The bulk storage and infiltration of substrate, impaired energy production and the toxic metabolites are considered as the three main pathophysiological mechanisms. Tandem mass spectroscopy is used for newborn screening. However, the gold standard for diagnosis remains the enzyme assay. For children suspected of having a mitochondrial disorder, electron microscopy assessment on the skeletal muscle biopsy is the gold standard. Algorithms base on the key entry points of encephalopathy, hypoglycemia, metabolic acidosis and neuromuscular symptoms are used for diagnostic measurements.
Emergency, Pediatric Intensive Care & Pediatric Surgery

Hepaticoduodenostomy vs. hepaticojejunostomy for reconstruction after resection of choledochal cyst

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Constrictive pericarditis in children is a very rare and usually difficult to diagnosis disease, which characterized by the appearance of signs and symptoms of right heart failure due to loss of pericardial compliance and restricting diastolic filling. We are presenting a 9-year-old boy, with a history of recent common cold, who was brought to our emergency clinic of our center with progressive edema of both lower extremities, scrotal area and orbits since 1 week ago. The investigations revealed a transudative pericardial effusion due to constrictive pericarditis compatible to adenovirus infection. Although acute pericardial constriction is reported to respond to anti inflammatory agents, this patient is eventually proceed to surgical treatment. Constrictive pericarditis, an uncommon disease in children, is inflammation of the pericardium, which results in constriction in conjunction with the presence of pericardial fluid under pressure. When pericardium is constricted it limits the normal distension of the myocardium, preventing cardiac filling which can turn to cardiac tamponade. There are two variants of constrictive pericarditis: a chronic form, which usually occurs following recurrent pericarditis, cardiac surgery, or radiation to the mediastinum as a treatment for malignancies. And acute pericardial constriction, which is usually a rapidly developing form, following an attack of effusive pericarditis, may be more due to infectious reasons.

Keywords: common cold, Anasar Edema, Restrictive Pericarditis

Which Location Is The Best For Implantation Of Port Systems In Children With Malignancy? A Single Center Experience

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Objective: The best location for implantation of port systems (LIPS) in children with cancer remains controversy. The proper location of an implanted reservoir might be a way for reduction of complications. The aim of this study was to compare three LIP systems including subcutaneous pocket implantation (SCP), subrectoral fascia pocket implantation (SPFP) and over costal ribs port fixation (OCP) in children with malignancies.

Methods: Between 2003 to 2013 a consecutive sample of patients (mean age: 18 Â± 28.8 months, ranging from 1 to 180 months; 450 female, 593 male) with a variety of malignant diseases were enrolled into this cross-sectional, single-center study. All suitable size catheters were inserted through the internal jugular vein in the superior vena cava above the right atrium (level of Louis angle of the sternum) under general anesthesia. Then, patientsâ€™ complications were assessed among three groups to select the best LIPS.

Findings: The ports were placed in SCP (n= 282), SPFP (n=342) and OCP (n=436) groups, while 17 patients received a second device after removal of the first one, due to failure of the first implantation. The mean follow up was 412 days ranging from 8 to 2102 days. Common complications were recorded in SCP, SPFP and OCP groups as follows: catheter displacement (4.3%; 4.1%; 0.9%), skin necrosis (7.1%; 1.2%; 0.4%), port exposure (4.3%; 0.3%; 0.23%), port related infection (3.9%; 2.3%; 1.8%), catheter obstruction (6.4%; 6.1%; 4.6%), pocket hematoma (2.1%; 2.3%; 0.9%), the reservoir rotation (4.6%; 2.3%; 0%); difficulty in port injection (0%; 1.2%; 0.9%), wound infection (5.7%; 2.9%; 0.5%), vein thrombosis (2.1%; 1.8%; 0.4%), pocket Infection (4.3%; 2.9%; 1.4%), and respectively. There were significant association between complications such as the reservoir rotation, catheter displacement, skin necrosis, port exposure, wound infection and wound bleeding in the 3 procedures applied. Conclusions: The findings suggest that the OCP was the best location for implantation of port device for management of children with various malignant diseases as study showed lesser complications.

Keywords: Location, Implantation, Port

Management of Severe Asthma in Pediatric Icu

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About 10% of individuals admitted to hospital for severe asthma go to the intensive care unit and 5-8% of those admitted patients are being Intubated and require MV. The importance is that almost all causes of death from asthma were in these patients and proper therapy & use of MV saves them.

Status Asthmaticus Generally follows one of 2 patterns:
• Gradual progression over one or more days (80%), or Rapid onset (20%) over minutes to hours.
Slow-onset (PRF) status asthmaticus is characterized by extensive mucus plugging with airway inflammation and edema, which explains the lack of immediate response to bronchodilators and gradual resolution over days. In contrast, sudden (RRF) asphyxial asthma results from profound bronchoconstriction with “dry airways” and usually reverses rapidly over several hours. ICU level management of these children entails the administration of corticosteroids, aggressive bronchodilator therapy, MgSO4, Heliox and close monitoring.

Mechanical ventilation is reserved for patients with continued progression toward respiratory failure despite maximal medical therapy. The use of mechanical ventilation during an asthma exacerbation is associated with significant morbidity and increased risk of death. When It is Time to Use MECHANICAL VENTILATION, first we use Noninvasive Positive Pressure Ventilation:

- Delivery of positive airway pressure:
  - As CPAP (continuous positive airway pressure)
  - Or Mechanically assisted breath, BiPAP (Bilevel Positive Airway Pressure)
- Patient must be awake and cooperative, have patent airway, with spontaneous respiration
- Limitations of NIV are:
  - Poor Patient cooperation
  - Impairs clearance of secretions
  - Impairs delivery of medications
  - Gastric distention &/or aspiration
  - Does not provide definitive control of the airway
  - Patients phobia

The decision to intubate should be based mainly on clinical judgment.

- Markers of deterioration include rising carbon dioxide levels (including normalization in a previously hypocapnic patient), exhaustion, mental status depression, haemodynamic instability, inability to speak and refractory hypoxaemia
- Clinical judgment is crucial because many patients presenting with hypercapnia do not require intubation and thus the decision should not be based solely on blood gases.

A full variety of ventilator modes have been successfully employed (PC, PS, VC, PRVC, SIMV/PC, & SIMV/VC). But V/C ventilation, PRVC or SIMV/VC, is the preferred mode, because it delivers a preset tidal volume and consistent minute ventilation.

- Volume control ventilation allows for consistent minute ventilation in the face of changing airway resistance and lung compliance.
- If PRVC is an available mode, it may be the best option since it assures that the patient receives the desired/set tidal volume at the lowest peak pressure possible

**Keywords:** Severe Asthma, PICU, NIV, PRVC

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**What should we do for Neuroprotection?**

*Serati Shirazi Z, Navaeifar MR, Saeed A*

Neuroprotection is any therapy that: Prevents, Retards or Reverses apoptosis-associated neuronal cell death resulting from primary neuronal lesions.

Neuroprotection historical aspect goes back to ancient Greece when Greek physicians used hypothermia and originated the concept of “neuroprotection”. After that, in the previous century knowledge of the factors affecting neurons was increased. Recognition of organic free radicals, hypothermia, glutamate, use of barbiturates, concept of reperfusion disturbance, concept of penumbra, role of free radical scavengers, genetics and many more factors made our new insight of neuroprotection.

Cerebral blood flow (CBF) is an important issue in damaged brain. Major factors regulate CBF are: Cerebral perfusion pressure (CPP), Paco2 and Pao2. In healthy brain, CBF auto-regulates by vasoconstriction or vasodilation of cerebral arteries but autoregulation does not work properly in damaged brain. For example decrease in arterial blood pressure led to decrease in CBF and worsening of ischemia.

Global cerebral ischemia may occur with cardiac arrest or in shock-trauma patients, traumatic brain injury, status epilepsy, hypothermia, drowning, stranguulation, and temporary interruption of circulation to the brain during open-heart surgery. These conditions are in need of neuroprotection.

Patients remain at significant risk of secondary brain injury after return of spontaneous circulation (ROSC) from hypoxemia, Hypotension, Seizures, Hypo/hyper glycemia, Hyperthermia. So efforts should be made to prevent these conditions, or treat them.

When neuroprotection must be started, it is better to transfer the patient to a tertiary center that specializes in the care and rehabilitation of post-arrest infants and children for further evaluation and treatment. Some non-invasive and invasive methods of monitoring may be needed for accurate observation and better management.

Some efforts must be made for all affected patients who need neuroprotection such as: measurements of vital sing and close observation for further changes in cerebral and hemodynamics, head position, proper neuro-imaging, temperature management, adequate oxygenation and ventilation, keep euvolemia and avoidance of hypotonic solutions, keep normal or high blood pressure, blood glucose management, reach to adequate hematocrit and so on.

Those who did not respond to above mentioned primitive care or had worsening condition, needed first tire actions. This step requires invasive monitoring, intubation, controlled, mechanical ventilation, sedation and analgesia with or without...
neuromuscular blockade, use of osmolar agents and CSF drainage.
In the next step, second tire, more invasive and Hazardous actions such as barbiturate-induced coma, hypothermia, hyperventilation, CSF lumbar drain and decompressive craniectomy may be done.
Finally, we assign four important points: first, Careful resuscitation is the best neuroprotection before ROSC. Second, each center must decide on their strategy and ensure consistency in care. Third, depth of neuronal damage may be affected by patients intrinsic factors and the last, This Field of medical sciences was growing up today and better future is coming!

Keywords: Neuroprotection, hypothermia, ICU

Currently a clinical criteria is used for diagnosis of VAP, Which is based on new finding on CXR plus temperature or WBC and 2 of 5 criteria of change in sputum, mechanical ventilator setting, auscultation finding, cough and heart rate. This definition include subjective elements which are neither sensitive nor specific for VAP. A new surveillance definitive algorithm that detects a broad range of condition which occur in mechanically ventilated patients has been introduced recently. It starts with definition of "Ventilator Associated Events" and includes a more reliable and price definition for "possible" and "probable VAP". The lecture is mostly focused on this new approach.

Keywords: Ventilator, Pneumonia, Infection, Mechanical Ventilation

Ventilator Associated Pneumonia

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Definition: Ventilator-associated pneumonia (VAP) is a nosocomial pulmonary parenchymal infection that occurs in patients receiving mechanical ventilation for > 48 hours. If it occurs within 48 to 72 hours of hospital admission is termed early-onset, VAP that occurs after this period is considered late-onset. Early-onset VAP is most often due to antibiotics sensitive bacteria e.g., Cloxacillin-sensitive Staphylococcus aureus, Haemophilus influenzae and Streptococcus pneumoniae. Late-onset VAP is frequently caused by antibiotic-resistant pathogens e.g., cloxacillin-resistant Staph.aureus, Pseudomonas aeruginosa, Acinetobacter species, and Enterobacter species.
VAP accounts for +/- 50% of acquired infections in the ICU which prolongs ICU stay. Risk modification and ongoing surveillance can decrease the development of VAP. Risk factors for VAP are: APACHE score > 16, contaminated equipment, mechanical ventilation > 7 day, supine position, enteral nutrition or the presence of an NG tube, sinusitis from NG tube, ulcer prophylaxis, excessive sedation, GCS < 9.
Two important processes are involved in the pathogenesis of VAP: bacterial colonization of the aerodigestive, and aspiration of contaminated secretions into the lower airway. Contaminated respiratory or other medical equipment can also be involved in the process.

In health, salivary fibronectin protects against bacterial overgrowth and oral hygiene maintained. In Critically ill patients, decreased concentration of salivary fibronectin and germs overgrowth cause VAP aspiration due to a deflated cuff, pooling of secretions above cuff and micro-aspiration along the folds of a high volume, low pressure cuff and positive pressure carries the contaminated secretions distally.
Endocrinology

The effect of maternal gestational diabetes on the basis of hypertrophic cardiomyopathy HbA1C and their infants in Kerman 2015

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Background: The prevalence of gestational diabetes among pregnant women is increasing. Gestational diabetes is associated with an increased risk of congenital heart disease, including hypertrophic cardiomyopathy which may impair the brain functions in PKU. Occupational Therapy is a holistic profession that helps people across the lifespan participate in the things they want and need to do through the therapeutic use of everyday activities, also known as occupations therapist uses these occupations as both the intervention and outcome of therapy. Hence the name occupational therapy. This means in pediatrics, occupational therapist are really good at providing intervention by engaging kids in their primary childhood occupation for example: PLAY, But pediatric occupational therapists don’t just play. We provide individualized therapeutic intervention to help kids improve their performance in occupations such as eating, sleeping, self-care, and learning by addressing underlying difficulties like fine motor, problem solving, attention, and sensory processing. We also take into account the effect of a tasks difficulty on the child performance, as well as the role of the physical and social environment. We are creative, scientific, and evidence-based. We are masters of modification and expert task analyzers. We love what we do and are passionate about making a positive difference in the lives of children, their families, and their communities.

Keywords: Phenyketonuria, Occupational Therapy

Clinical, laboratory data, molecular features and Follow up of 8 Sandhoff disease patients.

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Background: Sandhoff disease, a GM2 gangliosidosis, is a lysosomal storage disorder due to mutations in HEXB gene encoding subunit- beta of hexosaminidase A and B (O variant ), resulting in pathological accumulation of GM2 gangliosides in lysosomes of CNS, manifests as classic infantile, juvenile and adult late onset. Infants with classic form appear normal until the age of 2-9 months when development slow, muscles weaken, motor skills loose, seizures, hearing and vision loss develop (Charactristic cherry red spot), often results in death by the age of five years. Juvenile form starting at age 3-10 years, presenting autism, ataxia, motor skill regression, spasticity, learning disorders and death by 15. The adult onset occurs in older individual; with motor dysfunction and not yet known life span. Currently there is not standard treatment for SD but some studies suggest that ketogenic diet and miglustat may increase survival, improve motor function in mouse model and seizure control & cardiac function in SD patients.

Methods: 8 SD infants diagnosed by clinical data, enzyme assay and gene sequencing on combination therapy (2006, 2010, 2013, 2015). In this study, we aimed to describe the clinical, laboratory and molecular features of 8 SD patients and their follow up in the International Congress of Pediatrics, Tehran University Hospital, Kerman University of Medical Sciences, Kerman, Iran.

Phenylketonuria and the Role of Occupational Therapy

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Phenyketonuria (PKU) is a disorder characterized by several biochemical mechanisms which may impair the brain functions

Phenylketonuria and the Role of Occupational Therapy

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Phenyketonuria (PKU) is a disorder characterized by several biochemical mechanisms which may impair the brain functions
Premature adrenarche as a first presentation of pituitary macroadenoma: A case report

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Background: Premature adrenarche is the appearance of pubic or axillary hair before the age of eight years in girls and nine years in boys, without other signs of puberty or virilization and without an advance in bone age. Prolactinomas are the most common type of pituitary adenomas. Macroadenomas are the name used for these tumors when their size is 1 cm. These tumors commonly cause symptoms due to the excessive production of prolactin as well as complaints caused by tumor mass and compression of neural adjacent structures. Clinical diagnosis and assessment of macroadenoma are based on the measurement of serum prolactin concentrations and the morphological evaluation of the pituitary gland by magnetic resonance imaging. Even if prolactinomas are rare in children and adolescents, they represent 50% of all pituitary adenomas, which accounts for 2% of all intracranial tumors. Most pituitary tumors, including prolactinomas, are sporadic in nature. Some of them, however, are part of well defined familial syndromes such as MEN1 (MEN1 gene) or Carney complex (PRKAR1A gene), and also of other syndromes of familial predisposition to the development of pituitary tumors (familial isolated pituitary adenomas) identified in recent years in relation to the tumor suppressor gene AIP (encoding the AIP-aryl hydrocarbon receptor-interacting protein). Treatment is based on medical therapy with dopamine agonists, to control prolactin levels and reduce tumor size. Surgery is indicated in patients with tumors resistant to dopamine agonists as well as in those showing severe neurological symptoms at diagnosis. Radiotherapy should be limited to the cases with aggressive tumors, nonresponsive to dopamine agonists, because of the risk of neurological damage and hypopituitarism later in the lives of these patients.

Case presentation: Here we report a 8 years and seven months old boy with a pituitary macroadenoma (14Å—12Å—8 mm) presented with premature adrenarche and high prolactin level. (Testosterone= 0.4 ng/mL, DHEA-S=1.6 µg/mL, 17OH Progesteron= 0.8 ng/mL, HCG=0.6 IU/L, Prolactin= 246. 8 µg/L, TSH= 2. 8, T4= 8. 3, BUN=17, Cr= 0.7, Cortisol (8 AM) =8.5 µg/dL). He was not taking any medications. Visual field was normal. Bone age was 9 year. Other physical examination was normal. The patient was treated with cabergoline. After 8 months, prolactin level and tumor size markedly reduced.

Conclusion: The aim of this study is that in the premature adrenarche, prolactin should be measured. Many putative cortical androgen stimulating hormone (CASH) have been proposed, including POMC derivatives such as joining peptide, prolactin, and insulin-like growth factor type 1 (IGF-1), but conclusive proof is lacking. Ovine prolactin potentiates the action of adrenocorticotropic hormone on the secretion of dehydroepiandrosterone sulfate and dehydroepiandrosterone from cultured bovine adrenal cells.

Keywords: Pituitary Macroadenoma, Premature Adrenarche, Cortical Androgen Stimulating Hormone (CASH), Prolactinoma, comparison of healthy children and hypothyroidism under treatment aspect communication motor-social and fine course-solving

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Background: Congenital hypothyroidism is one of the causes of preventable and treatable disorders of growth and development. This study aimed to compare indices of development of children in congenital hypothyroidism with healthy children South Khorasan was conducted.

Methods: In this case control study 30 children 18 to 24 months, with congenital hypothyroidism that by screening were diagnosed and 30 healthy children that matched for age and sex were selected through available sampling and development indicators based on ASQ score -were all assessed. Data collection tool was Ages & Stages Questionnaire (ASQ). Data was analyzed in SPSS software using independent t-test, Kolmogorov-Smirnof test follow-up.
Molecular diagnosis of PKU: application of Next Generation Sequencing

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PKU is a common and highly heterogeneous metabolic disorder. The incidence of this disorder has been estimated at 1 in 6000-8000 in Iranian population. This inborn error of metabolism (IEM) mostly characterized by a deficiency of the phenylalanine hydroxylase (PAH) and rarity is due to tetrahydrobiopterin (BH4) cofactor deficiency. A striking feature of the disease is its genetic heterogeneity, best illustrated by the fact that 750 different mutations in PAH gene have been identified yet. Identifying the genetic cause of the patients’ disease is crucial for genetic counseling, and is a prerequisite for any form of genotype-based therapies. The direct approach for diagnosis essentially depends on the detection of the genetic variations responsible for the disease. However, the enormous genetic heterogeneity in PAH makes attempts to identify causative mutations a challenging task. Next-generation sequencing (NGS) systems provide several sequencing approaches including whole genome sequencing and whole exome sequencing. This technology is capable of sequencing all PKU-associated gene mutations in parallel, generating millions of reads from preselected genomic regions. Ongoing cost reduction and the development of standardized pipelines will probably make NGS a standard tool for more-routine applications in the near future. Indeed, NGS technologies bring us new sights in unraveling the genetic basis of diseases. Not surprisingly, as the technology continues to improve, NGS-based tests may become stand-alone, without the need for confirmation through a second method.

Keywords: Phenylketonuria, Next Generation Sequencing, genetic counseling

Prevalence of diabetic ketoacidosis in new cases of type I diabetes admitted to the children hospital in Qazvin, Iran (2005-2014)

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Background: Type 1 diabetes (T1D) is one of the most common chronic diseases in childhood and adolescence. Diabetic ketoacidosis (DKA) is a severe complication of T1D and is associated with significant morbidity and mortality. The aim of this study was to determine the prevalence of DKA in new cases of T1D admitted to the children hospital in Qazvin during 2005-2014. Methods: In this cross sectional study, data were collected from health profiles of 115 patients that were hospitalized as new cases of T1D during 2005-2014. The measurement tool was a datasheet including demographics, signs and symptoms of T1D, characteristics at the onset of disease, and characteristics during the hospitalization period. DKA was defined as blood glucose ≥ 250 mg/dl, arterial PH<7.3, serum bicarbonate (HCO3)> 15 meq/L, and positive urine ketones. Data were analyzed using descriptive statistics. Findings: Of 115 patients, 62.6% were female. The onset of T1D was diagnosed by DKA and hyperglycemia in 94.7% and 5.3% of patients, respectively. 76 (71.1%) of the study subjects had severe DKA and only one subject had mild DKA. Twenty seven percent of patients were

Keywords: Diabetic Ketoacidosis, Child, Type 1 Diabetes Mellitus

Ovarian Hyperstimulation Syndrome in Preterm Infants

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Background: Ovarian Hyperstimulation Syndrome in Preterm Infants Ovarian hyperstimulation is a rare syndrome among preterm infants. The patients show ovarian cysts and external genitalia edema extending to hypogastric and upper leg regions. The hormonal changes in this syndrome include different degrees of increased gonadotropin and estradiol levels.
**Case Report:** A 2 months old female infant was brought due to swelling in external genitals. She was a premature infant (gestational age =30 week). Her weight at birth was 1500 grams. The patient had developed gradual swelling of external genitalia starting at post conception age of 35 weeks. In physical exam tense edema of clitoris, labia major and minor, and upper thighs was observed. Laboratory findings were as follow: serum level of estradiol=34 pg/ml.

**Keywords:** Preterm, Infant, Ovarian Hyperstimulation Syndrome, Edema

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**Growth failure in a series of patients with Juvenile Idiopathic Arthritis in Iran**

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**Background:** Juvenile Idiopathic Arthritis (JIA) is accompanied by growth failure, mostly occurring due to chronic inflammation and use of corticosteroids for treatment. The aim of our study is to determine the prevalence of short stature and its causes in JIA patients. METHODS: In this cross sectional study that was performed in June 2014 to May 2015, JIA patients with a history of more than one-year treatment were examined by an endocrinologist and based on their height standard deviation score (SDS), 2 groups were determined: Group A>2SD and group B<2SD. Laboratory tests, including: Thyroid function test, 25OHD3 and CBC, for group A, and CBC, thyroid function test, liver and renal function tests, growth hormone stimulation test, urine analysis and culture, 25OHD3, and left hand and wrist X-ray for bone age determination, for group B, were done. FINDINGS: Of 117 JIA patients who were enrolled, 41 patients were under -2SD (19% of pauciarticulars, 62% of polyarticulars and 33% of systemic onset diseases). The mean height SDS in group B was -3.48±1.28 (compared to -0.9±0.8 for their parents). We found hypovitaminosis D in 73% of our patients. The prevalence of subclinical hypothyroidism was 7.4% (5% of group A and 9.7% of group B). Twenty-four percent (10 patients) of group B did not respond to growth hormone (GH) stimulation test and 14.6% of them (6 patients) had GH resistance. Liver function tests and renal function tests were normal in all the patients. There was no difference between the 2 groups in hypothyroidism and hypovitaminosis D but the polyarticular type of the disease was associated with short stature (P Value < 0.000). CONCLUSION: Growth failure is very common in JIA patients. So they need to be visited periodically by an endocrinologist especially the polyarticular type.

**Keywords:** Juvenile Idiopathic arthritis, Growth Hormone, Vitamin D Deficiency, hypothyroidism,

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**Clinical approach to the Pediatric Thyroid Nodules**

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Thyroid nodules are quite rare in the children, although the risk for thyroid cancer is much higher in the pediatric population compared with adults. In fact, thyroid cancer is the most common pediatric endocrine cancer, constituting 0.5%-3% of all childhood malignancies. Risk factors for developing thyroid nodules in children include head and neck irradiation, female gender, iodine deficiency, age of puberty, and family or personal history of thyroid disease. A careful work-up includes a detailed history of thyroid disease in the patient or in their family, careful palpation of the thyroid and lymph nodes and paraclinical assessment are mandatory to early diagnosis and optimal care for children with these conditions. In this article we review recommendations for the evaluation of thyroid nodules in children and adolescents, including rol of thyroid function test, ultrasound, fine-needle aspiration cytology, and the management of benign nodules.

**Keywords:** Thyroid Nodules, Children, Fine-Needle Aspiration, Thyroid Cancer

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**Undiagnosed phenylketonuria with normal IQ: a case report**

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Phenylketonuria (PKU) is a rare inborn error of metabolism that can cause severe learning disability and mental retardation if remains untreated. Normal IQ in subjects with PKU is very rare. We present a 9 month-old male with diagnosis of PKU in newborn screening. The parents had a familial first cousin marriage. In retrograde genetic study of the family, two family members including the father and sister of the case had undiagnosed PKU without any clinical signs and symptoms and with normal IQ.

**Keywords:** Phenylketonuria, Intellectual Disability, Phenylalanine
As we know the levels of protein in breastmilk falls naturally in the weeks following birth. In fact it’s now well documented that the protein content of breastmilk is very dynamic. It’s not stable. Particularly it’s higher when the child is born and then, by four weeks of age, the protein content has reduced by about a third, and then by 10 to 12 weeks of age, the protein content has reduced by 50 percent. Infant formulas contain higher protein level compare to breastmilk, this is so sure. But the amount protein varies in different infant formulas, few of them have closer amount to breastmilk, and most of them far from breastmilk. Today it’s gaining support that the actual requirement levels of protein in the formula which have to be adhered to by all manufacturers are still quite high, even if to be honest both in EU and USA they have lowered their upper limits in the last few years. It’s very possible that in the next few months new recommendation on the protein levels into the baby formula it will be coming out.

Keywords: Obesity, Children, Body mass Index, Overweight

The role of Excess Protein in Infant Obesity

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In the last years obesity is increasing everywhere around the World and if this current trends will continue unabated, over two billion overweight and over one billion obese individuals will be counted worldwide by 2030. Lifetime body mass index (BMI) trajectories have shown that both men and women experience weight gain during early to middle adulthood, and this BMI for sure will reduced life expectancy. Childhood overweight and obesity affect approximately one third of US children. Many of these children have one or more obesity-related comorbidities, such as abnormal blood pressure, dyslipidemia, fatty liver disease, prediabetes, diabetes, polycystic ovary syndrome (PCOS), obstructive sleep apnea, psychosocial problems, and others. Recently the excessive protein intake in the first two years of an infant’s life, possibly through conventional baby formula, has been blamed to contribute to childhood obesity. At least some studies refer so. Some of these studies have been carried out looking at over 1500 infants and showed that the high protein intake (of some infant formulas) is leading to later overweight and obesity.

Report of 13 months of neonatal screening for 58 metabolic disorders in Tehran - Iran

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Background: Neonatal Screening for Metabolic Disorders such as Urea Cycle Disorders, Amino Acid Disorders, Fatty Acid Disorders, Organic Acid Disorders, CAH, CH, G6PD Deficiency, Biotindase and Galactosemia are the main parts of neonatal cares in many countries. In this study the result of 2550 Neonatal Screening requests for metabolic disorders is presented.

Methods: A prospective study of 2550 neonates who were referred to the Nilou laboratory for neonatal screening tests from Tehran and its suburbs and 20 other provinces of Iran. Objective The main goal of this study was to determine Cut off values in Iranian populations for each markers, Detection Rate (DR), Screen positive rate, screen negative rate, PPV, and the frequency of each disorders. Methods Neonatal Screening for Metabolic Disorders was performed for 2550 neonates by MS/MS and Colorimetric methods. All those neonates were referred to the Nilou laboratory from July 2015 to August 2016. Before starting this study - for determination of cut off values for each Markers - was performed for 1400 neonates and children in 7 groups (2-7 days, 8-14 days, 15-31 days, 1-6 months, 7-12 months, 13-24 months and 2-7 years).

Findings: The result of our study is shown that in some markers there are a significant variations between our cut off values and references, especially in free carnitine (CO), Methionine
and Ornithine. We detected 2 PKU, 1 MSUD, 1 Argenimia, 1 Non-Ketotic Hyperglycinemia, 1 Carnitine Uptake Defects, Glutaric Acidemia, 1 CAH, 4 CH and 26 G6PD deficiency disorders in 2550 neonates.

**Conclusion:** Some Acylcarnitine markers in Iran have lower levels from other countries and is very important for distinguishing normal neonates from affected babies. Compared to the similar studies in the world, the prevalence and positive rates were higher in our study. Which may be attributed to secondary to decrease level of Carnitine in maternal serum due to nutritional problems. This issues can cause severe affect in our FPR and PPV.

**Keywords:** Neonatal Screening, metabolic disorders, Tandom Mass Spectrometry
Gastroenterology

Peritonitis Following Duodenal Ulcer Perforation in a Newborn: Report of a Case and Review of the Literature

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Duodenal ulcer is an uncommon condition in children that is why is not usually considered in the differential diagnosis unless it presents with complications including perforation and hemorrhage. Moreover, duodenal ulcer perforation is an uncommon entity in pediatric age group. Early diagnosis and treatment is crucial in order to improve survival. A 3-day-old male neonate presented to us because of abdominal distension which had been begun from the second day of birth. On examination, the patient was pale in general appearance. Respiratory distress, tachypnea, and severe abdominal distention existed. Bowel sounds were absent. There was generalized abdominal tenderness in palpation. Neonatal reflexes were so weak. Chest X-ray showed air below the diaphragm. The neonate underwent laparotomy. A perforated ulcer, 5 * 5 mm in size, was found on the anterior aspect of the first part of the duodenum. The perforated ulcer was closed with a single layer suture. Duodenal ulcer perforation may be presented with abdominal distention. This case report emphasizes that pediatricians and pediatric surgeons should be aware of abdominal distension resulting from a perforated peptic ulcer in neonates. Prevention of perforation is based on prompt recognition, as well as administration of histamine-2-receptor antagonists in patients with peptic ulcer.

Keywords: Perforation, Newborn, Duodenal Ulcer, Abdominal Distension

What must we know about HCV in infants and children?

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HCV spreads through blood products, IV drug abuse, sexual contact and also rarely vertically from mother to neonate. The perinatal transmission of HCV is about 5-10%, and is also greater if the mother is HIV positive. Highly maternal HCV viral load increase the risk of transmission. Rupture of membrane and internal fetal monitoring may increase the risk. The type of delivery makes no difference for the infection. Breast feeding is allowed, except when the mother has cracks on her nipples. As many as 40% of the infants who acquire HCV vertically may clear the virus up to 2 years of age. The infection is different in children from adult HCV infection (mode of transmission, clearance, natural history of infection and progression of fibrosis). It is usually an asymptomatic infection in children for many years. Diagnosis is based on abnormal liver enzymes and HCV Ab. Antibodies to the HCV require 6-8 weeks for positivity. HCV antibodies are not protective. HCVRNA can detect the disease after 1-2 weeks following the viral exposure. HCV maternal antibodies cross placenta and are positive in infants and disappear beyond 18 months of age. HCV test is not routinely recommended in pregnant women. Currently there is no HCV vaccine available. Passive immunization after exposure is also not effective. All positive antiHCV mothers should be examined for HCVRNA. If maternal HCVRNA positivity was detected HIV should also be offered. Liver transaminase level is not useful in infants since they may be higher in 18 first months. Pediatric patients with known HCV infection should be referred to pediatric gastroenterologist. Children with chronic HCV infection are allowed to have normal life activities. They may participate in sport activities. Day care attendance is also permitted. They must receive the routine children vaccination and especially HBV and HAV vaccination. They should avoid illicit drugs and alcohol and either obesity which may further damage their liver. Since HCV infection in children has a benign course; treatment is not recommended in asymptomatic until adulthood which effective treatment is available.

Keywords: Hepatitis C, Children, infant, treatment, diagnosis
Ankyloglossia in infant sex month old with vomitig: case report

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Ankyloglossia, also known as tongue-tie, is a congenital oral anomaly that may decrease mobility of the tongue tip[1] and is caused by an unusually short, thick lingual frenulum, a membrane connecting the underside of the tongue to the floor of the mouth. [2] Ankyloglossia varies in degree of severity from mild cases characterized by mucous membrane bands to complete ankyloglossia whereby the tongue is tethered to the floor of the mouth. [2] We introduce a male fourth months old infant with ankyloglossia who had difficulty feeding (breast feeding&buttel feeding) and recurrent vomiting. He diagnosed about Infancy GERD by other physicians and treated for it with prokinetic& PPI drugs for long term, But no useful for him. After careful examination of his oral cavity, We found ankyloglossia for him. Afterreferred him to surgeon and operated (frenulectomy), His problems were solved.

Conclusion: Ankyloglossia is a rare congenital oral anomaly. It often missed at birth if donot careful examination the neonats and it will present by difficulty of feeding, difficulty of speechand the othermechanical and social effects. Therefore we sugesst careful examination of whole of body of neonats including of oral cavity must perform at birth time or atleast as soon as if possible at health visits of infants.

Keywords: Ankyloglossia, Lingualfrenulum, GERD, Frenulectomy

Is medical nutrition therapy important issue in children with cystic fibrosis?

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Cystic fibrosis (CF) is a genetic disorder that affects approximately 80,000 individuals worldwide. It affects many organs, including the digestive system, and can lead to food not being absorbed as it should be, which in turn leads to growth problems. Therefore, in this article, we studied the effect of malnutrition and nutritional intervention on prognosis of cystic fibrosis patients. According to the findings of previous study, the severity of the lung disease, determined by spirometry, is associated with body growth and nutritional status in cystic fibrosis. Therefore, early assessment of failing nutritional status by valid and reliable tools is an essential component of care for individuals with cystic fibrosis. Among the most powerful tools to assess nutritional status are Body Mass Index (BMI) and percent ideal body weight (% IBW). Moreover, height for age and weight for length are the recommended parameters for children less than 2 years. The results of studies showed that initiation of nutritional management should begin as early as possible after diagnosis, with subsequent regular follow up and patient/family education. Exclusive breast feeding is recommended but if not possible a regular formula is to be used. Energy intake should be adapted to achieve normal weight and height for age. When indicated, pancreatic enzyme and fat soluble vitamin treatment should be introduced early and monitored regularly. However, because of the numerous intricate manifestations and complications, nutritional requirements and care must be individually determined for each patient.

Thus, careful follow-up, better knowledge of energy requirements, dietary counseling, and nutritional intervention (e.g. antioxidant supplements) can lead to the better prognosis and life expectancy for cystic fibrosis patients. Finally, a major goal is to maintain a good nutritional status because it improves long-term survival. Early diagnosis of CF and aggressive nutritional therapy are important to prevent growth failure and malnutrition in children with CF.

Keywords: Malnutrition, Nutrition, Cystic Fibrosis (CF)
Irritable Bowel Syndrome in children

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Irritable Bowel Syndrome (IBS) in children. Bagherian R, Quds children Hospital, Qazvin University of Medical Sciences. Irritable bowel syndrome is a functional gastrointestinal (GI) disorder, meaning it is a problem caused by changes in how the GI tract works. Children with a functional GI disorder have frequent symptoms, but the GI tract dose not become damaged. Symptoms: IBS is not a disease; it is a group of symptoms that occur together. The most common symptoms of IBS are abdominal pain or discomfort, often reported as cramping, along with diarrhea, constipation, or both. Diagnosis: To diagnose IBS, a health care provider will conduct a physical exam and take a complete medical history. The medical history will include questions about the child's symptoms, family medical history, and medications and stressful events related to the onset of symptoms. IBS is diagnosed when the physical exam does not show any cause for the child's symptoms and the child meets all of the following criteria: *has had symptoms at least once per week for at least 2 months *is growing as expected *is not showing any signs that suggest another cause for the symptoms Treatment: Though there is no cure for IBS, the symptoms can be treated with a combination of the following: *changes in eating, diet, and nutrition *medications: fibersupplements, laxatives, antidiarrheals, antispasmodics, antidepressants *probios *therapies for mental health problems

Keywords: Irritable bowel syndrome, children, abdominal pain

Eosinophilic Gastroenteritis Presenting as Acute Abdomen

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Background: Eosinophilic gastroenteritis with a low incidence rate remains as a diagnostic challenge for pediatricians. Unusual presentation of this condition is the most problem with diagnosis. Hereby we present the case of eosinophilic gastroenteritis presented with acute abdominal pain and intractable vomiting.

Case Report: A 9-year-old boy presented with abdominal pain and refractory vomiting, admitted in emergency room as an acute abdomen. Past history was positive for atopic dermatitis and received topical treatment for 3 years. No fever, diarrhea or abdominal distention was reported and no remarkable feature in his physical examination was detected. Initial laboratory exams revealed: leukocyte: 15, 400/mm3 (PMN: 75% lymphocyte: 25%), platelet: 281, 000/mm3, Hematocrit: 35.5%, ESR: 23 mm/h. He visited by a Surgeon who suggested further evaluation including abdominal US, urine analysis and stool exam which were normal. Due to refractory vomiting (even in fasting state), Nasogastric tube inserted and abdominal X-Ray was performed. No mechanical obstruction or other abnormality was seen. He transferred to pediatric ward to reevaluate next morning with conservative treatment. Defecation was loose but stool exam was normal. He took Ranitidine and Hyosin and got better but feeding led to vomiting again. Liver tests and amylase and blood sugar were normal. Abdominal CT was normal. Endoscopy revealed nonspecific atrnal erythema, gastric biopsy was taken. Upper GI series was also normal but abdominal pain and vomiting continued. Second CBC showed EOS: 30% Peripheral blood examination revealed eosinophilia; Biopsy from gastric antrum revealed marked eosinophilic infiltration of mucosa. The child's symptoms and clinical findings improved after corticosteroids and anti-allergy treatment for 2 weeks.

Conclusion: Children presenting with unexplained abdominal pain and vomiting in the presence of no surgical problem should be investigated for the eosinophilic gastroenteritis. Considering eosinophilic gastroenteritis in patients with atopic dermatitis and gastrointestinal symptoms is promptly recommended.

Keywords: Acute Abdomen, Eosinophilic Gastroenteritis, Children

Evaluation of the Role of Aspartate Aminotransferase-Platelet Ratio Index in the Diagnosis of Liver Fibrosis and Postoperative Prognosis in Infants with Biliary Atresia

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Background: Biliary atresia is an acute cholestatic disease with unknown cause during infancy characterized by intrahepatic and extrahepatic biliary ducts obstruction. This retrospective, cohort research aims to study the medical records of patients diagnosed with biliary atresia who were hospitalized and underwent surgery and liver biopsy in Mofid Children Hospital in the period 2004-2014.

Method: A retrospective, cohort research was carried out by studying the medical records of patients diagnosed with biliary atresia who were hospitalized and underwent surgery and liver
biopsy in Mofid Children Hospital in the period 2004-2014. The sampling method was complete enumeration and all patients admitted to the hospital in these 10 years were selected as the sample. In this study, an author-made checklist was used. According to data available in the archives of Mofid Children Hospital, a total of 50 patients with biliary atresia entered the study. The obtained data were inserted into SPSS Statistics version 18 (SPSS Inc., Chicago, USA) and analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (Chi-square and ANOVA).

Findings: A number of 50 patients were enrolled in this study according to inclusion and exclusion criteria and number of items in the hospital records database. 32 patients were male (64%). The patients gave birth at a minimum of 29 weeks and a maximum of 40 weeks. It was concluded based on analytical examinations that gestational age was significantly related to the final diagnosis of the disease in children (p=0.011).

Conclusion: The study indicated that none of the mentioned variables had significant relationship with APRI.

Keywords: Biliary Atresia; Infancy; Aspartate Aminotransferase-Platelet Ratio

**Investigation of celiac affected children responses to hepatitis B vaccin in comparison to nonaffected children in Children Medical Center hospital**

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Background: Celiac is an immune and systemic disease in which taking Gladin causes digestive problems. 90-95% of celiac affected patients are HLADQ2 positive. It is indicated that HLA is one of factors for lack of antibody response to Hepatitis B (HB) vaccin. So, regarding to 1 percent prevalence of celiac in Iran, these affected patients can contain a large population of non-immune individuals against HBV which are also a source of HBV in the society. This study aims to investigate the relationship between lack of response to HBV vaccin and celiac disease.

Methods: A case-control study was performed on two groups of children: 20 celiac affected children before diet and 20 non-affected children. All of the children shared the same age and sex. Logistic regression was used to compare HBS Ab in these groups.

Findings: The age average in two groups was 0.94 ± 24.8 months. 41.5% of the children were male and 58.5% were female. There was not a significant statistical difference between two groups regarding HBS Ab. There was also not a significant statistical difference based on variables such as age, weight, height and time interval from the last received vaccine dose.

Conclusion: Although, failure to produce protective levels of antibody against HB vaccin in celiac affected patients was reported in other studies, but this hypothesis was not proved in our study. This can be due to vaccine type in Iran or genetic features of the patients in the region. So, more researches are needed and investigation of vaccine type is proposed in future studies. Acquiring different results is also feasible by increasing sample size.

Keywords: Celiac- Hepatitis B vaccin-HBS Ab

**Evaluate of the relative frequency of the indications of percutaneous liver biopsy and the results of pathology and its complications**

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Objective: The aim of this study was to evaluate the relative frequency of the indications of percutaneous liver biopsy and the results of pathology and its complications in patients attending the Children’s Medical Center between January 2010 and February 2014.

Method: In this cross-sectional study, all patients admitted to the Gastroentrology Ward of Children’s Medical Center who underwent percutaneous liver biopsy using the biopsy needle were evaluated and the reason for liver biopsy and its possible complications were recorded according to the data available in patient records. Then, the pathologic findings of the liver biopsy were recorded according to the pathologic report. The data was analyzed with SPSS software and the frequency of the data was calculated according to the reason.

Findings: A total of 322 patients were included in the study, of whom 128 (39.8%) were female and 194 (60.2%) were male. The highest frequency of liver biopsy was seen in the age group above 2 years (n=220, 68.3%). The most frequent reason for biopsy was thalassemia (n=133, 41.3%). Evaluation of the pathologic findings of the patients showed that iron overload due to thalassemia had the highest frequency (n=130, 4.0%), followed by chronic hepatitis (n=34, 10.6%). As for the complications of liver biopsy, a total of 22 cases (6.8%) were noted with hypotension and vomiting having the highest frequency (n=12, 54.5%).

Conclusion: The most frequent reason for liver biopsy was thalassemia and the most frequent histopathologic finding was iron overload due to thalassemia in our center. Percutaneous liver biopsy is a safe procedure for the evaluation of hepatic diseases.
Gastroparesis Due to Cows Milk Protein Allergy

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The ingestion of cow’s milk proteins produce immunologically mediated adverse reactions in 2.5% of young infants, and regurgitation and vomiting are among the commonest manifestations of such reactions but it appears that food allergy often is not immediately recognized as the cause of these symptoms. In a study, 42% of 204 infants evaluated for symptoms of GER were shown to have CMPA as the underlying cause of their reflux symptoms. In a case, an 11-month-old girl was presented with vomiting & FTT. Vomitings were not bilious and had begun from 7 months ago. Her development was normal. Complementary nutrition was started at 4-month age with rice cereal, cow’s milk and treenut. She was treated with multiple drugs, but vomiting had not stopped. Laboratory tests & metabolic tests were normal except for eosinophilia on PBS (EOS=700). Upper GI barium study revealed delayed gastric emptying, severe distension of stomach and severe GE reflux without any obstruction. The patient’s feeding was changed to amino acid-based formula (Neocate) and breastfeeding was continued but cow’s milk protein was omitted from the mother’s regimen. Furthermore, Cisapride was administered for a short time. One week afterward, the patient clinically improved, and vomiting was stopped.

Keywords: Cow’s Milk Protein Allergy, CMPA, Gastroparesis, FTT, Vomiting

Pediatric Liver Transplantation in Iran

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Background: Liver transplantation has become the treatment of choice in end stage liver disease. It also provides life saving treatment in special circumstances. In general liver transplantation in children can be categorized in: primary liver disease leading to hepatic failure, acute liver failure, some of the inborn metabolic diseases, liver disease as part of systemic illness and primary hepatic malignancy.
Genetics

**Homzygous ATP6V1E1 and ATP6V1A mutations cause autosomal recessive cutis laxa**

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Cutis laxa is a heterogeneous condition with autosomal recessive, dominant and X-linked inheritance. The autosomal recessive forms are categorized into types IIA, IIB, IIA and IIB. Mutations in ATP6V0A2 have already been identified as the cause of cutis laxa IIA, a congenital disorder of glycosylation with multisystem manifestations including a loose redundant skin, skeletal, and often neurological abnormalities. It is known that defects of the V-type proton ATPase pump (V-ATPase) impair acidification of vesicular compartments and interfere with intracellular trafficking of membrane-bound compartments including secretory granules, endosomes, and lysosomes. By whole-exome sequencing we were able to identify homozygous mutations in ATP6V1E1 and ATP6V1A, encoding the E1 and A subunits of the V-ATPase, in five families with severe cutis laxa, dysmorphic facial features, and variable cardiopulmonary involvement. Structural modeling indicated that all substitutions affect critical residues, and alter either inter- or intrasubunit interactions. V-ATPase complex profiling using liquid chromatography tandem mass spectrometry showed a reduction in the amount of assembled V1 domain, indicating that substitutions in the E1 and A subunits affect either the assembly or the stability of the V1 part of the complex. Transferrin isoelectric focusing showed a type II glycosylation defect. Vesicular trafficking defects were evidenced by delayed retrograde translocation of Golgi membranes to the endoplasmic reticulum after Brefeldin A treatment, and abnormal swelling and fragmentation of the Golgi apparatus. Finally, transmission electron microscopy of the dermis showed severe changes in the amount, structure and organization of elastic and collagen fibers. In conclusion, our study expands the molecular and clinical spectrum of metabolic cutis laxa syndromes, and provides new insights in the cellular processes involved in proper assembly and homeostasis of the extracellular matrix.

**Keywords:** cutis laxa, ATP6V1E1, ATP6V1A, V-ATPase complex, glycosylation defect

**Expanding the spectrum of PAH mutations in Iranian population**

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**Background:** Phenylketonuria is the most common amino acid metabolic disorder. In most cases it is caused by mutations in PAH gene. Due to the approval of a national screening program for PKU in Iran and after the identification of patients and carriers, detection of the most common disease-causing mutations in Iranian population is necessary to set a genetic strategy to prevent PKU.

**Methods:** We examined 34 Iranian families with PKU using PCR- Sequencing of 13 exons of the PAH gene and their flanking intron regions. All families were investigated for DNA variations in exons 1-13 of the PAH gene. Polymerase chain reaction (PCR) followed by Sanger sequencing was used for this analysis.

**Findings:** Mutation analysis revealed 22 different mutations were found, which account for 88.23% of the total mutant alleles. The majority of these mutations (69.11%) were distributed across the exons 11, 2, 7 and the flanking intronic regions. IVS10-11G>A was the most common mutation with a frequency of 2.0.58%. Besides, p. Leu48Ser (11.76%), R261Q (1.029%), IVS9+5G>A (8.82%), IVS2+5G>C (7.35%), p. Lys363Asnfs (4.41%), and p. Arg261* (2.94%) comprised 66.15% of all mutations. In addition, eight new mutations were identified for the first time in Iranian population. Thirteen novel polymorphisms were also identified for the first time in the world in our study.

**Conclusion:** The present study is consistent with other finding in Iran that indicates a broad- PAH mutation spectrum in
Iranian population that representing wide heterogeneity of PKU in Iran likely due to ethnic heterogeneity.

**Keywords:** Phenylalanine hydroxylase, Mutation detection, Sequencing, Iranian population

**Mutation detection and haplotype analysis of Phenylalanine Hydroxylase (PAH) gene in exons 6 and 8-13 in 50 families with an affected child to Phenylketonuria (PKU)**

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**Background:** Phenylketonuria is the most common amino acid metabolic disorders with an autosomal recessive inheritance. Its prevalence is approximately 1/10000 among the European population. In most cases it is caused by mutations in PAH gene. So far, more than 600 different mutations in the PAH gene have been detected. Due to the approval of a national screening program for PKU in Iran and after the identification of patients and carriers, detection of the most common disease-causing mutations in Iranian population is necessary to set a genetic strategy to prevent PKU. The aim of this study is to detect PKU-causing mutations in Iranian population and to assess the relationship between the identified mutations and minihaplotypes of the PAH gene.

**Methods:** 50 unrelated families that met the necessary criteria were included in the study. All families were investigated for possible DNA variations in exons 6 & 8-13 of the PAH gene and intronic flanking regions. Polymerase chain reaction (PCR) followed by sanger sequencing was used for this analysis. Haplotype analysis of PAH region was performed using Chi-Square statistical method.

**Findings:** Analysis of exons 6 & 8-13 of the PAH gene showed 11 different mutations. Mutation detection rate was 43%. Most mutations found in exon 11 and its adjacent intron regions (26%). IVS10-11G>A, K363Nfs*37 & IVS9+5G>A mutations were the most frequent mutations in this study with the frequencies of 19%, 7% and 4%, respectively. In this study, IVS10-11G>A & K363Nfs*37 mutations were associated with STR: 17/VNTR: 7 & STR: 15/VNTR: 8 minihaplotypes (p-value 0.017).

**Keywords:** Phenylketonuria, Phenylalanine Hydroxylase, Mutation, Haplotype.

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**A Study of 148 Patients with Cystic Fibrosis Confirmed by Molecular Method between Years 2009 and 2015**

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**Background:** Cystic Fibrosis is an autosomal recessive disorder. It is a disease caused by mutation in the cystic fibrosis transmembrane conductance regulator (CFTR) gene. It was previously known as Cystic Fibrosis of the Pancreas. In addition to destruction of pancreas exocrine function, This genetic disorder may lead to malfunction of sweat glands, bronchial glands, biliary tree, intestinal glands and reproductive organs. Thus, symptoms may include bronchopulmonary infection, sinus infection, fatty stool, meconium ileus or other gastrointestinal problems, biliary cirrhosis or other liver disorders, infertility, an abnormal sweat test. Other symptoms include failure to thrive (FTT), clubbing of fingers, diabetes, osteoporosis and some other rare ones.

**Methods:** We studied 148 patients referred to our lab whose diagnose was confirmed by molecular method (Sanger sequencing of CFTR gene) between years 2009 and 2015.

**Findings:** Among them, 133 children (89.8%) had pulmonary symptoms. 15 children (10.1%) Suffered from Gastrointestinal symptoms. Liver disorder was seen in 8 patients (5.4%). All patients had abnormal sweat test and we had no case of infertility. The age of patients at the time of diagnosis ranged from 6 months to 14 years old with a mean of 2 years old. 73 patients had first cousin parents, 36 had second cousin parents, 39 had first cousin parents once removed. The most prevalent mutation was ΔF508.

**Conclusion:** It seems that due to common consanguinous marriages in Iran, CF is more prevalent than what it is presumed to be. Thus, it is important to offer Carrier detection tests before marriage and pregnancy, to the families at risk and inform them about PND.

**Keywords:** Cystic Fibrosis, Consanguinous Marriage, CFTR gene

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**The molecular analysis of Von Willebrand disease type 3 in Iran**

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**Background:** Von Willebrand disease type 3 (VWD type 3) is a dominant/recessive autosomal inherited bleeding disorder caused by quantitative or qualitative defects of von Willebrand factor (VWF). The VWF is a blood clotting protein which...
encoded by VWF gene. In the present study, VWD type 3 which is the most severe form of this disease was investigated.

**Methods:** A total of 11 individuals diagnosed with autosomal recessive Von Willebrand disease type 3, were selected from patients referred to Kawar Human Genetics Research Center. The genomic DNA was extracted from peripheral blood leukocytes using the salting-out method. All exons and intron-exon boundaries of the VWF gene were sequenced using Sanger sequencing in affected individuals from 10 families. Mutation detection in another family was performed using next-generation sequencing (NGS).

**Findings:** A total of 7 different mutations were identified in exons 5, 8, 16, 20, 26, 37 and 45 among investigated patients. A nonsense mutation identified in exon 5 of VWF gene was novel. In silico studies and segregation analysis confirmed pathogenicity of these mutations.

**Conclusion:** Until now only few studies have performed on VWD type 3 in Iran. Different problems in patients affected by this disorder can show importance of these studies in different countries. More studies with larger samples can help to detect the most common mutations in the VWF gene which is useful for genetic diagnosis of this disease.

**Keywords:** Von Willbrand Factor, Von Willebrand Disease Type 3, VWF Gene, Iran

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**A comprehensive molecular study on Hemophilia A and B in Iran**

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**Background:** Hemophilia A and B which are the consequence of coagulation factors VIII (FVIII) and IX (FIX) genes defect respectively are the most common human X-linked bleeding disorders. Based on high proportion of de novo mutations of these genes, this study has been done to explore the origination and the types of these mutations.

**Method:** A total of 335 non-related families have been referred to our laboratory for molecular genetic evaluation of bleeding disorders due to factors 1-13 deficiency. 74% of the cases were hemophilia A, 13% hemophilia B and the rest were defects of factors 7, 13, 10, 5-8, 5, 1, 2, 11 respects to their frequency. Sanger sequencing of FVIII and FIX genes were performed for the families. Linked STRs and VNTR analysis were done in parallel. MLPA technique was utilized to detect probable deletion.

**Finding:** A total of 143 and 39 different mutations were identified in the FVIII and FIX genes respectively. A lot of these mutations were novel. De novo mutations were identified in 42 families which 57% of them were originated from a normal father and 43% were from a normal mother. Approximately all de novo mutations from the mothers were point mutations while only half percent of these mutations were from the father. In one of these families a normal mother had two children with a pathogenic mutation which was not detected in their mother.

**Conclusion:** This study is a comprehensive report on Hemophilia A and B in Iran. High prevalence of this disease and its economic impacts on the society, high lights the importance of studies on this defect which are helpful in prenatal diagnosis.

**Keywords:** Hemophilia A, Hemophilia B, de Novo, Mutation

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**Epigenetics evolving the future of pediatrics**

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Epigenetic mechanisms are defined as external modifications of DNA that change gene’s phenotype. Our surrounding environment affects our genetic pool via epigenetic mechanisms. Many cancers and even some heritable traits are believed to have epigenetic bases. Epigenetics is orchestrating human development from fetal to adult life. It is already shown that the environmental effects on pregnant mothers could change the phenotype of fetal genes. However malfunctions in this highly complicated mechanism, could have devastating outcomes. Epigenetic abnormalities are involved in many pediatric diseases including: Autism, Beckwith-Wiedemann syndrome, allergies, childhood leukemia, asthma, fetal alcohol spectrum disorders (FASD), childhood obesity, type 2 diabetes and some childhood cancers. Currently, some treatments are being used to treat childhood leukemia via epigenetic modifications. Potential epigenetic treatments and strategies are under study for several diseases and many universities are focusing to reveal the possible underlying preventive strategies. Several genetic methods have been introduced to diagnose the severity of epigenetic abnormalities in cancer epigenetic studies. Recently the gut microbiome has been implicated with the etiology of cancer, as the gut microbiome metabolites can act as epigenetic activators that may influence cancer risk in humans. It is known that, the gut microbiome can modify dietary exposures in ways that are beneficial or detrimental to our health. These metabolites can influence epigenetics by altering the enzymes involved in epigenetic pathways. Therefore, all clinicians and especially pediatricians need to be aware of the epigenetic basis of disease. In this review, we will discuss different aspects of epigenetics in medicine and pediatrics.

**Keywords:** Epigenetics-Environment-Microbiome
Genetics of Metachromatic leukodystrophy in Iran

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Metachromatic leukodystrophy (MLD) is characterized by leukodystrophy and progressive neurologic dysfunction. The late-infantile form is the most severe with loss of previously acquired skills, optic atrophy, ataxia, dementia, seizures and spastic quadripareisis. Most affected individuals have ARSA gene mutations leading to decreased ability to break down sulfatides, resulting in the accumulation of these substances in cells. Genomic DNA was extracted from 9 families having at least one affected offspring. ARSA gene was sequenced and segregation and in silico analyses were performed for novel mutations. Three homozygous mutations were found in two patients and two homozygous mutations in one patient. A novel mutation is also presented here. A patient was compound heteroygote for two previously reported mutations. Genetic testing is recommended for finding the genetic cause of MLD. Some ARSA mutations are in cis configuration as a haplotype and a founder effect may exist for them. Further studies are needed to find mutation spectrum of ARSA gene.

Keywords: Metachromatic leukodystrophy, ARSA

Genetic testing: diagnostic confirmation and management of presymptomatic individuals

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Lysosomal acid sphingomyelinase deficiency is a rare disorder which occurs in approximately 1 in 250,000 live births. It is divided into neuropathic known as Niemann Pick A and non neuropathic (Niemann Pick B). The gene responsible is SMPD1 gene encoding the sphingomyelin phosphodiesterase-1. A one year old boy referred for molecular genetic testing. Due to overlap in enzyme activity predicting the A and B type was difficult; he had splenomegaly and hepatomegaly. A novel deletion mutation was detected by molecular testing in the SMPD1 gene which led to a frame shift mutation. In silico analysis with MutationTaster tool predicted that this alternation might change the protein features and splice sites in subsequent intron, and predicted the pathogenicity. Some investigations argued that Niemann-pick disease is difficult to be clinically diagnosed; hence this study could demonstrate the fundamental role of genetic testing in definitive diagnosis. Sequencing is recommended for at risk family members to benefit from re-occurrence; no curative treatment currently exists for type A, only supportive care could be provided. Some success in hematopoietic stem cell therapy was reported before the appearance of neurological symptoms. Treatments are in clinical trial and physicians could help affected and their family members for disease management. Presymtomatic individuals can benefit from genetic testing. Enzyme assay in carriers and normal could not be differentiated. Also, carrier screening and prenatal testing could be performed for the affected families.

Keywords: Genetic Testing, Mutation, Phenotype, Genotype

Whole Exome Sequencing helps the diagnosis of Alstrom syndrome in Iranian family

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Background: Alstrom syndrome is a rare mendelian multisystemic disorder characterized by cone-rod dystrophy, obesity, progressive sensorineural hearing impairment, the insulin resistance syndrome. Age related clinical variability among patients may cause diagnostic confusion between Alström syndrome and other disorders such as Bardet-Biedl syndrome (BBS). Here we illustrated 6 years old boy from a consanguineous marriage with retinitis pigmentosa and obesity who referred for genetic counselling due to suspected diagnosis of Bardet-Biedl syndrome. Methods DNA capturing and paired-end sequencing with 100X coverage were performed in macrogen company, South Korea (provided by the Pishgam Biotech Company, www. pishgambc. com). Genomic DNA was captured on Agilent SureSelect V5 Target Enrichment Kit and sequenced with Illumina HiSeq 4000 platform. Findings Whole Exome Sequencing of the patients identified a total number of 58, 377, 745 on target reads with the average read length and mean depth of of 100 bp and 99.3 respectively. A total number of 90, 195 variants found in the final vcf file were analyzed by in house-stepwise filtering process, which revealed a novel homozygous frameshift mutation in ALMS1 gene. Conclusion WES is a new emerging approach for facilitating the genetic diagnosis in Mendelian disorders even in the absent of confined clinical diagnosis. Through this study, WES followed by a stepwise in-house filtering process determined a novel pathogenic mutation on the responsible gene for the Alstom syndrome in an Iranian
patient who was suspected to Bardet-Biedl syndrome at the initial investigations. Further precise clinical and para-clinical analysis confirmed the Alstrome syndrome diagnosis in the family. This study implicated the importance of genetic analysis in the management of Pediatrics disorders.

**Keywords:** WES; Alstrome syndrome; Genetic diagnosis

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**Next-Generation Sequencing: Basics and Applications**

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Millions of DNA fragments are sequenced by Next-Generation Sequencing (NGS) platforms which can massively parallel sequence all exons (exome) of a single sample. Capturing entire exons and sequencing all fragments in parallel are the fundamental steps of NGS platforms for whole exome sequencing (WES). Indeed sample preparation, hybridization (capturing all exons), sequencing and data analysis should be performed to find out the causal variants within an exome. NGS platforms facilitate detecting mutations, identifying genes and determining RNA expression levels which are important for understanding the causes and mechanisms of disease. Approximately, 85% of the mutations are estimated to occur at protein-coding regions; and sequencing of the exome (constituting about 1% of the genome) could be used to find these mutations. A panel of causal genes or gene regions is also applicable to sequence for heterogeneous disorders. Nowadays, pediatricians usually prescribe (order) gene-panel sequencing to find mutations of specific known genes.

**Keywords:** Whole Exome Sequencing; Next-Generation Sequencing

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**Molecular analysis of ARSB gene in Iranian patients affected by Maroteaux-Lamy syndrome**

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**Background:** Mucopolysaccharidosis VI (MPS VI) or Maroteaux-Lamy syndrome is an autosomal recessive lysosomal storage disorder. This abnormality is caused by mutations in ARSB gene. Affected individuals experience a lot of problems such as coarse facial features, cloudy corneas, skeletal abnormalities, growth retardation, enlarged organs, and deafness. Skeletal deformities as a main clinical symptom can be associated with joints and hip pains and also difficulty in walking. These problems bother patients by causing movement limitations.

**Methods:** A total of 8 patients from 7 different families were included in this study. DNA extraction was performed using salting out method. Mutation detection was performed by Sanger sequencing of all coding exons and boundary regions of the ARSB gene. In silico studies were performed using PolyPhen, SIFT and mutation taster.

**Findings:** Three novel and three previously reported mutations were identified in exons 1, 2, 4 and 5 of the ARSB gene. In silico prediction and segregation analysis of mutations in families showed that the identified mutations can cause for MPS VI in these families. Conclusion: The Maroteaux-Lamy syndrome shows genetic heterogeneity within Iranian population. However more studies in Iran can help to identify the most common mutations in this gene in this country.

**Keywords:** Maroteaux-Lamy Syndrome, Mutation, ARSB Gene Mucopolysaccharidosis VI

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**Identification of novel and reported mutations in usher related genes in two Iranian deaf families using targeted next-generation sequencing**

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**Background:** Usher syndrome is a phenotypically and genotypically heterogeneous autosomal recessive disorder characterized by sensorineural hearing loss and retinitis pigmentosa. It is divided into three clinical subtypes I, II and III. So far 15 different genes have been identified for this syndrome. Despite the importance of molecular diagnosis of Usher syndrome for disease management, limited studies are available on the genetic diagnosis of this syndrome in Iran.

**Methods:** Two Iranian consanguineous deaf families each with two affected children referred to Kawsar Human Genetics Research Center (KHGRC) were investigated in this study. In one of these families affected children also had progressive vision loss. Targeted next generation sequencing (NGS) of deafness genes was used to identify mutations in one affected member of each family. Sanger sequencing was performed to confirm NGS findings and genotyping of other family members.

**Findings:** A novel homozygous mutation c. 5306T>C (p. Leu1769Pro) in USH2A gene was identified in the family with
non-syndromic deafness and a previously reported mutation c. 1373A>T (p. Asp458Val) in USH1G gene was identified in homozygous state in another family with combined vision and hearing impairments. In silico analysis as well as family genotyping showed that these mutations can cause deafness in these families.

**Conclusions:** Until now only few mutations have been reported as cause of Usher syndrome in Iran. This study expanded the spectrum of Usher syndrome mutations in Iran. More studies should be performed to determine most common causes of Usher syndrome in this country.

**Keywords:** Usher Syndrome, Next Generation Sequencing, Mutation, USH1G, USH2A

Targeted next generation sequencing identified a novel mutation in MYO7A causing Usher syndrome in an Iranian consanguineous pedigree

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**Background:** Usher syndrome is mostly characterized by hearing impairment (HI) and adolescent-onset retinitis pigmentosa. It is categorized into two major types.

**Methods:** In this study a pedigree with two affected members were investigated. A 16 years old male with profound HI, rod-cone degeneration and clinical diagnosis of Usher syndrome, result of a consanguineous marriage, was referred for genetic counseling/analysis. The proband had a one year old cousin, also result of a consanguineous marriage, with profound HI. Target region capturing of 13 Usher syndrome-related genes (CDH23, DFNB31, GPR98, MYO7A, PCDH15, USH1C, USH1G, USH2A, CLRN1, HARS, PDZD7, CIB2, and ABHD12) was performed followed by next generation sequencing (NGS) performed on Illumina platform.

**Findings:** A novel homozygous variant in MYO7A gene was detected in the proband as NM_000260: c. 4513G>T (p. Glu1505*). It was detected in homozygous state in the other affected member of the pedigree by Sanger sequencing. Segregation analysis was consistent with the AR pattern of inheritance. This variant was absent in population (1000G, ExAC, dbSNP) and disease-specific (ClinVar, OMIM, HGMD) databases, predicted to be disease-causing by multiple in silico predictive tools (mutation taster, SIFT, PolyPhen, CADD), and the substituted nucleotide was evolutionally well conserved (ConSurf, phyloP, phastCons).

**Conclusions:** Based on the ACMG standards and guidelines for interpretation of sequence variants, it is classified as a pathogenic variant. Although MYO7A is the most common gene causing Usher syndrome typeI, NGS was able to detect this novel mutation. Therefore applying NGS in less investigated populations can still detect novel variants, even in well-studied genes for different disorders.

**Keywords:** Usher Syndrome, NGS, Genetics
Hematology

Therapeutic effect of hydroxy urea in major thalassemia (Bahonar Hospital) 2014-2015

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Objective: This study was performed to determine the therapeutic effect of hydroxy urea in major thalassemic patients attending to Bahonar hospital of Karaj (2014-2015)

Methods: In this interventional quasi experimental study, 30 patients with major thalassemia were enrolled and underwent treatment with 20mg/kg/day hydroxy urea and the hemoglobin levels was measured and compared at baseline and also in 1, 3, 6, 9, 12 months after drug prescription.

Findings: In this study, the mean Hb at baseline is 8.6 and in 1, 3, 6, 9, months after prescription are 8.4, 8.3, 8.5, 8.2, 8.5 g/dl respectively.

Conclusions: totally, according to the obtained results in this study and comparison with other studies it may be concluded that the change in Hb level is not significant (p value>0.05) and ordinary therapy such as transfusion is better with less adverse effects.

Key words: Thalassemia, Hydroxy Urea, Hemoglobin

Discriminate Between Iron Deficiency Anemia and Beta Thalassemia Trait by Assessment of Hematological Indices in Hypochromic Microcytic Anemia Patients

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Background: hypochromic microcytic anemia is one of the most common types of anemia which is mostly due to iron deficiency and minor thalassemia. Differentiation of these two diseases, from therapeutic and preventive points of view, is very important. There are different way of differentiate these disease that some of them are expensive and inapplicable in most of laboratories. Our aim is to study hematological indices in these two groups to determine the sensitivity and specificity of them and recommend the easiest and most reliable diagnostic method.

Method: This diagnostic case series study was done on 125 hypochromic microcytic anemia patients referring to shahid sadughi hemotologic clinic from 2015 until 2016. 17 cases were excluded as they were under treatment. Serum iron, TIBC, serum ferritin and electrophoresis of all 108 recruited patients were checked. According to the laboratory finding, patients were divided into 3 minor thalassemia (40 cases), iron deficiency (50 cases) and mixed (18 cases) groups. The last group was excluded from our study. Finally 90 patients were included and all hematological indices were check through a CBC test evaluated in a single laboratory by a single device. His results were analyzed by SPSS version 15 software using ROC curve to determine the sensitivity and specificity of indices.

Findings: according to our finding, there was no significant differences between WBC and platelets of two groups, but the differences of hb, MCV, RBC count, RDW, MCV/RBC and (RDW) MCV/RBC index between two group were stastically significant.

Conclusion: It should be noted that RDW, MCV and MCV/RBC were the most sensitive and specific indices to differentiate minor thalassemia from iron deficiency anemia.

Key words: Iron Deficiency Anemia, Minor Thalassemia, Hematological Indices

Behavioral disturbance in children with hemophilia

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Background: Children with hemophilia demonstrate difficulties with emotional well-being, including more depressive symptomatology and lower self-perceptions, but there is weak evidence of behavioral problems. Methods: The purpose of the present study was the comparison of behavioral dysfunction in 7-12 years-old children with hemophilia to healthy children. Data were collected in the hospital and schools of 30 boys with hemophilia (who admitted in Mofid Hospital) and 50 healthy boys of the same economic status and age. Behavioral and emotional disruption was examined with The Child Behavior Check List (CBCL). To evaluate of cognitive function in participants was applied cognitive software included Continuous Performance Test (CPT), Wisconsin Card Sorting Test (WSCT), and Working Memory Test (N-Back). Behavior Check List (CBCL) was completed by parents, and cognitive software was performed by the children. Statistic methods such as One-way ANOVA, Kruskalâ€”Wallis and Mannâ€”Whitney tests were used for evaluation. Results: The results of the study indicated children with hemophilia showed more problems in activities, educational function, total competence, and adaptation. They indicated less proficiency in activities and total competency than healthy children. Children with hemophilia displayed more Internalization, behavioral disruption and emotional distress. The results showed that externalization in children with hemophilia was high in compared to control. The cognitive dysfunction analysis indicated children with hemophilia and leukemia challenged more with attention,
executive functions, and working memory impairments in compared with healthy children. Conclusion: factors related to disease (such as anemia and bleeding), treatment (side effect of medicine), and social deprivations have influenced the behavioral functions in children with hemophilia.

Keywords: Hemophilia; Behavioral Problems; Internalization; Externalization; Hemophilia.

Hearing loss disorder and oto-laringeal impairments in transfusion dependent thalassemic patients

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Background: Thalassemia should be considered in any chronically anemic patient presenting from the Middle East with hearing impairment. With the improved life expectancy of beta-thalassemia major patients, new clinical problems such as hearing loss must be evaluated. This study was done to determine the prevalence of hearing loss and its relationship with beta-thalassemia major.

Methods: 42 Patients with beta-thalassemia were evaluated. All patients were evaluated for hearing loss by audiometric tests. For all patients Deferoxamine Doses, duration of deferoxamin therapy, serum ferritin level, duration of blood transfusion, were determined and E. N. T evaluation were examined. The data analyzed by T test X2 and Mann-Whitney tests.

Findings: This study contains 20 (47.6%) male and 22 (52.4%) female with mean age of 12.8±5.7 years of age. Five patients (11.9%) had clinical hearing loss. Patients with audiometric hearing loss presented with relatively longer duration of desferal injection (P=0.002) and blood transfusion (P=0.000). The mean level of serum ferritin level was 3014 (±2137.4) microgram/dl. No statistically significant difference was observed with serum ferritin levels in patients with or without hearing loss.

Conclusion: The findings are indicative of desferal contributing role in the development of hearing impairments. Regular audiologial evaluations are imperative in all thalassemic major patients so that early changes may be recognized and treatment may be judiciously adjusted in order to prevent or reverse hearing impairment. Keywords: thalassemia, hearing loss, audiometry

Keywords: Thalassemia, Hearing Loss, Audiometry

Prevalence of G6PD Deficiency in Children with Hepatitis A

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Background: Hepatitis A virus is the most prevalent viral hepatitis. It is globally a major public health problem with different clinical symptoms. This study aimed at investigating the clinical findings and prevalence of glucose 6-phosphate dehydrogenase (G6PD) deficiency in children with hepatitis A.

Methods: In this prospective study, demographic information, clinical findings, and G6PD level of hepatitis A patients, who were visited at Pediatric Hematology clinic, were entered into the database. The diagnosis of hepatitis A infection was based on the presence of anti-HAV Ig M antibody. The activity of G6PD enzyme was measured with florescent spot test.

Findings: Of the 117 children with hepatitis A, 52 (44.4%) were male and 65 (55.6%) were female. The mean age of these patients was 2.79±5.39 years. The most prevalent clinical manifestations were dark yellow urine and anorexia. G6PD deficiency was observed in 26 (26.3%) out of 99 patients whose G6PD levels were measured.

Conclusion: Given the high prevalence of G6PD deficiency in this study, the measurement of G6PD level along with other liver and biochemical markers in areas with endemic hepatitis A is recommended. In addition, it is recommended that patients undertake precise monitoring for hemolysis and renal function.

Keywords: Children, Hepatitis A, G6PD Deficiency

The association between diastolic function parameters and MRI T2* measurements in a sample of Iranian patients with major thalassemia

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Objectives: The aim of this study was to investigate the relationship between echocardiographic indices of diastolic dysfunction and MRI T2* measurements indicating myocardial iron loadings in patients with thalassemia major and normal LVEF.

Methods: A series of consecutive patients with known thalassemia major under treatment by regular blood transfusions and iron chelation therapy were enrolled in study between July 2012 to June 2015 at Bahrloo Hospital, Tehran, Iran. All patients underwent cardiac MR imaging with
measurement of T2* for liver and heart, echocardiographic examination with tissue Doppler assessment and serum ferritin assay. The correlation between diastolic function parameters and T2* measurements assessed by statistical software. Standard diastolic indices were recorded, including early (E) and late (A) transmirtal peak flow velocities, early decceleration time (DT).

**Findings:** The mean E/A, E/E′, and E′ were, respectively, 2.09±0.54, 0.07±0.011, and 14±1.40 cm/s. The mean of deceleration time (dt) was 190.97±35.89. The average serum ferritin level was 1.498±783.08 ng/ml (range 212.7 to >3000 ng/ml). The mean cardiac T2* derived from MRI was 26.58±7.54 ms. The frequency of different severities of myocardial iron loading based on myocardial T2* was as follows: 44 (80%) Normal, 4 (7.3%) mild, 2 (3.6%) moderate, 5 (9.1%) severe. Magnetic resonance imaging myocardial T2* did not have a significant correlation with E/A (r=0.091, p=0.508), E′ (r=0.130, p=0.345), E/E′ (r=0.005, p=0.971) or dt (r=0.028, p=0.838). Hepatic iron loading based on MRI T2* values did not also have any correlation with echocardiographic indices of left ventricular diastolic dysfunction; E/A (r=0.151, p=0.270), E′ (r=0.034, p=0.804), E/E′ (r=0.083, p=0.547) or dt (r=0.128, p=0.351).

**Conclusion:** We could not recommend replacing Cardiac MR with diastolic function parameters measured by echocardiography in iron overload induced cardiomypathy.

**Keywords:** Diastolic Dysfunction, Thalassemia Major, Hemoglobin Disorders, Iron Overload

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**Hematohidrosis in a Young Girl**

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Hematohidrosis or bloody sweet is a rare condition of oozing blood in sweat, tears or any other part of the body, with varied underlying etiologies and variable success to different available treatment modalities. We discuss this case in an 11-year-old girl with the history of spontaneous oozing blood (mixed with sweet) from the intact skin over the forehead, arm, umbilical area and her back for several months. The bleeding occurred in episodes, once or twice a day, sometimes more frequently, especially when she was anxious. Most of these episodes were preceded by a brief period of abdominal pain, vomiting and headache. On the basis of the clinical presentation and normal paraclinical investigation, she was diagnosed with hematohidrosis. We successfully treated her with non-specific beta blocker (propranolol) 10 mg daily along with psychotherapy.

**Keywords:** Hematohidrosis, Bloody Sweet, Propranolol
Immunology & Allergy

The Impact of Allergic Rhinitis on Quality of Life: a Study in Kurdistan

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**Background:** Chronic diseases due to their prolonged and debilitating nature, affect patients quality of life dramatically. Allergic rhinitis (AR) is one of the most common chronic diseases. The present study aimed to determine quality of life in the patients with allergic rhinitis.

**Methods:** In a cross-sectional study, 146 patients with AR were enrolled in this study. The required data were collected using the Rhinoneconjunctivitis Quality of Life Questionnaire (RQLQ). The questionnaire was distributed among the patients by a physician and analysis of data was carried out by SPSS version 16.

**Findings:** Of the total of 146 AR patients admitted to the clinic, 61% were female and 39% were male and had a mean age of 29±10.17. Rhinorrea (82.2%) was the most common symptom and moderate to severe intermittent rhinitis (38.4%) was the most common type of the disease. A dramatic reduction in quality of life was observed in 62% of the patients, and severity of the disease reduced significantly the quality of life (P=0.000).

**Conclusion:** Allergic rhinitis can adversely affect every aspect of a patient’s life, including sleep quality, mood and daily activities.

**Keywords:** Allergic rhinitis, quality of life, western Iran

**Toxic epidermal necrolysis in a child, a case report**

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**Background:** Toxic epidermal necrolysis is an acute life-threatening condition (death rates of 30 to 40 percent), that is usually drug-related. Epidermal necrosis causes erosions of the mucous membranes, extensive detachment of the epidermis, and severe constitutional symptoms. The incidence of toxic epidermal necrolysis is estimated at 0.4 to 1.2 cases per million person-years. The aim of this study was to report a case with drug-induced TEN a severe blistering mucocutaneous disease.

**Case Report:** A 19 months old girl admitted to PICU ward due to reaction to HIV drugs. Some drugs associated with Stevens-Johnson syndrome and toxic epidermal necrolysis are usually prescribed for long-term therapy of other conditions. But the generalized maculopapular rash and vesiculopustular eruption in this case started just 3 weeks after prescription of these drugs. Bullous lesions with Eosin and positive nikolsky sign were seen. IVIG, aminplasma, antibiotics, prednisolone, syrup zinc were prescribed and totally cured.

**Keywords:** Toxic epidermal necrolysis, HIV drug

Association of serum vitamin D3 and body mass index in children with mild asthma

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**Background:** Asthma is a common chronic disease in children, the most common causes of emergency department visits, hospitalizations and absenteeism from school. Several studies in various countries have reported increased prevalence of about 50% for childhood asthma. The relationship between abnormal BMI and asthma is considered. The aim of this study was to investigate the relationship between vitamin D levels and body mass index in children with mild asthma was referred to Khorraramad Clinic Children’s Hospital.

**Methods:** This research study was cross-sectional and epidemic analysis. The study population included 109 children 1 to 14 years of age with mild asthma who in 1394 referred to Khorraramad Clinic Children’s Hospital. Sampling method was Non-probability available. A questionnaire was prepared that contained patient information such as age, sex, location, body mass index and inhaled corticosteroid use. vitamin D3 serum levels less than 25 nmol/L means deficient and 25-74 nmol/L was considered to be insufficient. Information was collected through questionnaires and analyzed by SPSS. Fisher’s exact test was used statistical methods.

**Findings:** Mean age of 6.7±2.9 years, 35.8% female and 64.2% were male. The majority of children between 5-9 years of age. Residence of the majority (88%) was city. Body mass index in 35.8 % of children less than 18, in 30.3 % normal and on 16.5 % was greater than 3 O.Average serum vitamin D 3 levels in children with mild asthma was 63.2±23.3 mg/dl with minimum 20.4 and a maximum of 160 mg/dl. In 7.3% vitamin D3 deficiency in 66.1% inadequate amount and 26.6% normal. Most cases of deficiency was found in girls to be statistically significant (p=0.04). Also in children residing in city frequency of vitamin D3 deficiency was 8.2% and inadequate amounts 69.1% which was statistically significant (P=0.03). The most frequent deficiency of vitamin D3 was found in children with a body mass index greater than 30 (27.8%) and overweight children (21.1%) children overweight (21.1%) to be statistically significant (p=0.02).
Conclusion: Serum levels of vitamin D3 deficiency in children with mild asthma based on body mass index was statistically significant.

Keywords: Vitamin D3, Body Mass Index, Asthma

Prevalence of food and inhalant allergens in patients with urticaria in Gorgan

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Background: Today, allergies to food and fresh fruit is a major health problem in worldwide. Allergic diseases affect the body’s various systems and provide a variety of symptoms. The most frequent allergies protests, including protests skin allergies, respiratory symptoms, dyspepsia, cardiovascular symptoms. Urticaria is one of the most common type of protests hypersensitivity disorder that can occur in any part of the skin, including the scalp, lips, palms and soles, about 2% of people are kind of developed a rash. So far the treatment has been not found, especially for allergic diseases and spending a lot of money and time for the family and the state imposes. The aim of this study was to evaluate the prevalence of some air and food allergens in children with urticaria to avoid contact with these allergens is this?

Methods: This study evaluated 115 pediatric allergy and asthma clinic of Gorgan, referring to the year 1395 are referred to the hospital with complaints of hives will be done. Children participating in this study, patients based on clinical symptoms confirmed by a specialist. Criteria for entering the study included parental consent, the signs of illness, lack of drugs contain antihistamines is one week before the test and no Dermatoglyphism. Skin Prick Test (Skin Prick Test) for the detection of sensitization to allergens used in patients. Data will be analyzed by the software Spss19.

Findings: The results showed that 78. 26% of all subjects had at least one of the allergens airborne and food allergies. Food allergens such as curry and tomato significantly more than other allergens cause allergies in people under study. Inhaled allergens, especially at an older age also causes a high percentage of people were sensitive. The results of this study showed that factors such as age and gender can affect the incidence of allergies in people. In general, the reaction is more common in men. The need to pay more attention to this group led to the occurrence of allergic diseases. The results of this study showed no significant correlation between the sensitivity of different ethnicities. Also in first degree family history of allergies, despite a significant difference was not statistically significant (P>0.05).

Conclusion: Generally sensitivity to food allergens affect people’s consumption and lifestyle and it varies by age and sex.

The frequency of exposure to smoking in asthmatic patients

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Background: The World Health Organization estimates that nearly half of the world’s children’s health from environmental tobacco smoke exposure threatens. Children’s exposure to environmental tobacco smoke increase the risk of respiratory tract infections, middle ear infections, asthma and sudden infant death syndrome.

Methods: This descriptive, cross-sectional, epidemiological study was conducted on 150 children aged 2 to 14 years with asthma hospitalized in Shahid Madani hospital of Khorramabad in 2015. The questionnaire consisted of the demographic information of the patients including age, gender, exposure to smoking, socioeconomic status and use of inhaled corticosteroids. The data were collected by questionnaire was analyzed by Spss software.

Findings: The mean age in the children with asthma was 6.76±2.8 years. Minimum age of children 2 years and a maximum of 14 years. 56%) were in the age group 5-9 years and 61/6 percent were male. 88.8% were in urban areas. 32/1 percent of father’s employees and self-employed 31. 3 percent. According to parental reports 27 % of the children exposed to environmental tobacco smoke. Children of fathers with low education and who smoked 10 or more cigarettes per day had severe asthma and poorly control.

Conclusion: It is concluded that increases in prevalence of childhood asthma may be in part related to the increased prevalence of smoking.

Keywords: asthmatic patients, exposure to smoking

Normal values of peak expiratory flow rate in children from the town of Babol, Iran.

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In the management and evaluation of asthma, simple instruments for measurements of peak expiratory flow rate
(PEFR) are necessary. The aim of this study was to determine normal PEFR of the healthy children in Babol, Iran. This study was randomly done on 1050 students (primary and secondary schools) in Babol. Mini-Wright peak flow meter was used for measurement of PEFR. The range of age, weight and height were defined. Information was statistically analyzed by SPSS, T-Test and R2 and due to formula with regression. Mean age of 1050 students (525 male and 525 female) who participated in this study was 1 0.26 years. The mean of PEFR was 262. 3SV±71. 97 L/min. obtained PEFR with all anthropometrics variants indicate a high correlation. Correlation between PEFR and height was more significant and between PEFR and weight was lower, and according to importance of height and age, formulas suggested for prediction of PEFR in females { (age×4/8) + (height×0/6) -25 } and in males { (age×1/7) + (height×2/1) -208 }. The results of this study can determine normal PEFR and it can be useful for treatment and monitoring of children with asthma who live in this region.

**Keywords:** Anthropometrics, Children, Peak Expiratory Flow Rate

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**Challenges in Diagnosis of Patients with Primary Immunodeficiency Diseases**

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Primary Immunodeficiency Diseases (PIDs) are usually presented with characteristic clinical features, including recurrent respiratory tract infections, recurrent pyogenic or severe infections, early infancy failure to thrive, and autoimmune or chronic inflammatory disease and/or lymphoproliferation. Suspicious to a number of certain PIDs should be made according to their clinical phenotypes. Meanwhile the first step in the diagnostic process starts from a limited set of simple screening tests, which are available in most hospitals. Specific laboratory tests for each category of defects in the immune system are needed, considering the characteristic clinical presentations, such as immunoglobulin assays for antibody deficiency, CH50 and AP (AH) 50 assays for complement deficiency in those with recurrent sinopulmonary infections with encapsulated organisms. B-/T- cell enumeration should be done those with combined immunodeficiency who are presented with early onset severe infections. Chemotaxis and dihydrorhodamine oxidation test are screening tests for phagocyte defects in those with recurrent pyogenic infections. More sophisticated tests such as specific antibody responses to protein or polysaccharide antigens, lymphocyte proliferation tests can be performed in immunological laboratories, while definite diagnosis of PIDs relies on genetic tests.

**Keywords:** Primary Immunodeficiency Diseases, Diagnosis, infections

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**Clinical Approach to Primary Immunodeficiencies**

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Primary immunodeficiencies (PID) are inherited disorders of immune system function that predispose affected individuals to increased rate and severity of infection, immune dysregulation with autoimmune disease, and malignancy. Summary: In general, initial evaluation is guided by the clinical presentation. Screening tests are applied and followed by advanced tests, as indicated. This stepwise approach ensures efficient and thorough evaluation of mechanisms of immune dysfunction that underlie the clinical presentation, with narrowing of diagnostic options before using costly sophisticated tests that might be required to arrive at specific diagnoses. In addition to global assessment of immune development through measurement of nonspecific features, such as serum immunoglobulin levels and leukocyte and lymphocyte subpopulations, evaluation of the specific immune response is essential. This is most often directed toward evaluation of responses against vaccine antigens, but assessment of responses to natural exposure or infections is also useful. Conclusions: Understanding the types of PI and the variety of associated clinical manifestations can help pediatricians, internists, and other non-immunologists see beyond the isolated symptoms, and lead to improved recognition and diagnosis of PI. Timely diagnosis is of utmost importance in PI, as recent advances in bone transplantation and immunoglobulin replacement therapy, as well as future gene therapies, provide effective ways to prevent significant mortality and morbidity.

**Keywords:** Primary Immunodeficiencies, Clinical Approach

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**Cause of respiratory distress in patient admitted at intensive care unite of pediatric hospital of Khormabad**

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**Background:** Almost of patients with respiratory distress admitted in intensive care unite. This study was done in order
to assess the cause of respiratory distress in admitted patient in neonatal intensive care unite (NICU) and pediatric intensive care unite (PICU) of khomarbad pediatric hospital in 2013-2015.

**Method:** This study was a cross sectional which performed on 560 case under 5 years old with respiratory distress admitted in Nicu and Picu. Variable studies were sex, age, cause of respiratory distress, connected to ventilator, duration of hospitalization. Data was collected by questionnaire and analyzed with SPSS system.

**Findings:** Out of 560 cases with respiratory distress 26/5% were girls and 73/5% were boys. 67/5% were neonate, 23/5% less than 1 years old and 8/7% had 1-5 years old. Cause of respiratory distress in neonate were 75% respiratory distress syndrome (HMD), 13.5% meconium aspiration and 11.5% pneumonia. 50% were connected to the ventilator. Those neonate whom connected to ventilator had poor prognosis. The cause of respiratory distress in another patient were 86.7% pneumonia, 6.7% croup 4.4% asthma and 1% foreign body aspiration. 3% were connected to the ventilator. There were 2 death in this age group that was due to congenital heart disease. Duration of hospitalization was between 5 hours to 1 months with average of 7 days.

**Key words:** Neonatal Intensive Care Unite (NICU), Pediatric Intensive Care Unite, Respiratory Distress

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**The prevalence and severity of rhinitis and eczema in 6-7 and 13-14 year-old school children -West Mazandaran-Iran**

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**Background:** Systematic comparisons of the prevalence and severity of allergic disorders in children are needed to understand their epidemiology, economic burden and possible causes. Objectives: To identify the prevalence and severity of rhinitis, and eczema in 6-7 and 13-14 year old school children from West Mazandaran (Ramsar and Tonekabon).

**Methods:** This cross-sectional study was done on, 6-7 year old and 13-14 year old students, with simple enumeration in West Mazandaran, in 2012-2013. We used the ISAAC (International Study of Asthma and Allergies in Childhood) written questionnaires for rhinitis and eczema.

**Findings:** The response rate was 90%. In 3760, 6-7 year old and 2257, 13-14 year old children, the prevalence of current rhinitis (past 12 months) and current allergic rhino conjunctivitis were %33.4 and 28%, respectively. The prevalence of rhinitis in 13-14 years old children was significantly higher than younger age group. (EXP=0.30, 95%CI=0.26-0.35, P<0.000). The prevalence of severe rhinitis in children with" current rhinitis "was 2.4%. The prevalence of "chronic itchy rash in past 12 months" and "chronic itchy flexural rash in the past 12 months" were 15% and 12.6%, respectively. The prevalence of severe eczema was 15.8%. The prevalence of" current eczema" was higher in 13-14 year age group (EXP =0.75, 95%CI =0.5–1.1) and boys (EXP =1.2, 95%CI =0.84–1.87).

**Conclusion:** Eczema and rhinitis are highly prevalent in West Mazandaran.
Keywords: ISAAC, Rhinitis, Eczema, Prevalence, Severity

Severe combined immunodeficiency; a case report

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A 7 month old male, came to our hospital because of one month fever and recurrent abscess over left arm. He was first product of a consanguineous marriage, born by full term cesarean delivery with birth weight of 2.9 Kg. The infant was gaining weight normally and routine vaccination was done for him. The infant had been exclusively breast fed till date. The infant had been administered BCG at birth. There was no history of contact with tuberculosis. His parents complain that 2 month ago, multiple non tender, non erythematous nodules and abscess present over the trunk and the BCG site over left arm with regional adenopathy. He was febrile for last month. Laboratory investigations revealed: biochemical, liver and renal parameters, stool and urine analysis were within normal limits. Chest X-ray (CXR) was normal, Ultrasonography of abdomen did not reveal any organomegaly. Histopathological examination of biopsy from the skin nodules showed AFB and findings consistent with cutaneous tuberculosis. Infant was started on anti-tubercular treatment. There was evidence of disseminated BCG tuberculosis so immunologic evaluations were done. the immunological panel revealed hypogammaglobulinemia and grossly reduced T-cells. Mother was negative for ELISA-HIV. Based on above findings the diagnosis of BCGosis with underlying Severe combined immunodeficiency (SCID) was made and Bone marrow transplant has been tried for him successfully.

Keywords: SCID, BCGosis

Higher low bone mineral density risk in Common variable immunodeficiency and X-Linked agammaglobulinaemia patients

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Background: Primary antibody deficiency (PAD) is the most common group of primary immunodeficiency disorders (PID), resulting from different defects in development and function of B cell lineage. Common variable immunodeficiency (CVID) and X-linked agammaglobulinaemia (XLA) are two of the major types of PADs. Multiple factors in PAD might interfere with optimal growth and maturation and potentially compromise bone health. In the present study our aim was to evaluate bone mineral density (BMD) of patients with CVID and XLA.

Methods: BMD of 37 CVID and 19 XLA patients was examined. Total BMD was determined by dual energy X-ray absorptiometry (DEXA) and Z scores according to age and height were compared to sex and ethnic specific reference data. Related factors associated with bone density including serum calcium, phosphate, total alkaline phosphatase, 25 (OH) vitamin D and parathyroid hormone levels were measured.

Findings: Mean BMI was 19.405 ± 4.650 kg/cm². BMI was positively correlated with DEXA z-score at lumbar spine (r=0.290, p<0.04), t-score at lumbar spine (r=0.634, p<0.001) and t-score at femoral neck (r=0.518, p<0.005). Thirty eight (67.9%) of total patients had normal BMD and 18 (32.1%) patients had a low BMD (15 patients with CVID, and 3 patients with XLA). The number of low BMD patients in CVID (40.5%) group was more than the XLA (15.8%).

Conclusion: Altered bone mineral density is an emerging health problem in PID patients especially in the severely affected subgroup. Bone density should be evaluated according to height or puberty of the patients when delayed puberty or short stature is observed in PID patients.

Keywords: Bone Mineral Density, Common Variable Immunodeficiency, X-Linked Agammaglobulinaemia
Infectious Diseases

Prevalence of HBsAg carrierity among under 5 years children

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A safe and effective vaccine against hepatitis B, available in Iran since 1993. The main objective of hepatitis B immunization is to prevent chronic HBV infection and its consequences. The primary strategy is to prevent perinatal and early childhood HBV transmission through the timely administration of hepatitis B vaccine at birth (within 24 hours) and completion of the primary vaccination series by 6 months of life. Vaccination coverage in Iran has been steadily more than 95% in previous decade. The prevalence of chronic HBV infection in community has been decreased due to high vaccine coverage and other control strategies like safe blood and safe injection, however there is any information due to impact of vaccination on HBV infection rate in less than 5 years children. All EMR countries are encouraged to conduct hepatitis B sero-prevalence survey, using the WHO guidelines to document the impact of hepatitis B immunization: best practice for conducting a serosurvey, to document the impact of Hepatitis B vaccination programme and document progress towards achieving the 2015 regional hepatitis B disease reduction target. Based on regional goal, all EMR countries should be reach to less than 1% HBsAg positivity in less than 5 years old children. Objective of this study is assessing prevalence of HBsAg carrierity among under 5 yearâ€™s children to identify effectiveness of vaccination. Our total sample size in this study was 6676 based on type I error (β), estimated prevalence of HBsAg in Iranian children less than 5 years, and precision around this prevalence equal to 0.05, 0.7% and 0.2%, respectively considering estimating one ratio formula. Between July and October 2015, interviewers completed the forms and took blood samples and send them to the defied lab. Totally, there were 7030 samples from 11 provinces and 23 cities distributed throughout Iran. There were only eight positive cases for HBsAg that accounts for 0.11%. The 95% confidence interval (CI) of this prevalence was between 0.03 and 0.19. Prevalence (95% CI) of HBsAg positive in boys and girls was 0.14 (0.02, 0.26) and 0.06 (0.002, 0.12), respectively. This difference was not statistically significant (P= 0.454). The result of this study shows that Immunization program has been achieved to reach the regional goal of hepatitis B control.

Keywords: Children, Hepatitis B, Prevalence

Knowledge and Behavior of Mothers about Antibiotic Use in Children Under Six Years Old With Upper Respiratory Tract Infections

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Background: Upper respiratory tract infections (URTIs) are common in children. The cause of URTIs is usually viral, but parents’ attitudes often contribute to inappropriate prescription of antibiotics, promoting antibiotic resistance.

Objectives: The objective of this study was to study the knowledge and behavior of mothers about antibiotic use in children under six years old with URTI.

Methods: Ninety-seven mothers with children under six years were evaluated in a semi-kap study about antibiotic use in children under six years old with URTI. Sampling was done with the convenient method. Data were collected using a researcher-made questionnaire.

Findings: The mean age was 30.2±7.2 years. Maternal knowledge was 8.2±2.2 (scores ranged from zero to 12) and their performance was 4.1±1.4 (scores ranged from zero to seven). Mothers had intermediate knowledge and performance. Knowledge was associated with mother and father’s education, and mother and father’s occupation (P<0.05), but was not significantly correlated with the number of children. (P>0.05) also, performance was associated with mother and father’s education, and mother’s occupation (P<0.05) but was not significantly correlated with the father’s education and number of children (P>0.05).

Conclusions: The study findings suggest that mothers’ knowledge and practice in the use of antibiotics is moderate, and lower parental education may lead to unnecessary antibiotic consumption and resistance.

Keywords: Maternal; Knowledge; Practice; Using Antibiotic; URTI.

Comparison of urinary antigen test and PCR assay for detection of Legionella pneumophila in respiratory samples from children with hospital-acquired pneumonia

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Legionella pneumophila is the causative agent of more than 95% cases of severe legionella pneumonia. Nosocomial pneumonias in different hospital wards impose an important health threat. The main objective of this study is to detect
legionella with two methods of polymerase chain reaction (PCR) and urine antigenic test in patients suffering from nosocomial pneumonia admitted to pediatric intensive care unit (PICU) of children hospitals.  
**Keywords**: Legionella Pneumonia, Polymerase Chain Reaction, Urinary Antigen Test, Hospital-Acquired Pneumonia

The pattern of antibiotic resistance among Pseudomonas aeruginosa isolated from tracheal samples obtained from patients admitted to Children’s Medical Center

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**Objective**: The aim of this study was to investigate the prevalence of antimicrobial resistance among Pseudomonas aeruginosa (P.aeruginosa) strains isolated from tracheal samples from patients admitted to Children’s Medical Center, Tehran, Iran in 2015.  
**Methods**: Tracheal specimens were obtained from the patients and cultured on the appropriate bacteriological media. P. aeruginosa isolates were identified by standard biochemical tests. Antimicrobial susceptibility testing was performed according to CLSI guidelines.  
**Findings**: P. aeruginosa isolates showed a high degree of resistance to Imipenem (33.3%) and Ceftazidim (28.2%) and other antibiotics use to treatment Pseudomonas infections.  
**Conclusion**: 30% of P. aeruginosa strains isolated from tracheal samples had a high degree of resistance to commonly used anti pseudomonas antibiotics (Ceftazidim and Imipenem). It maybe due to inappropriate and incorrect administration of antibiotic therapy.  
**Keywords**: Pseudomonas Aeruginosa, Trachea, Antibiotic Resistance, Children

Etiology and antibacterial resistance pattern of bacterial conjunctivitis in hospitalized neonates

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**Background**: Bacterial conjunctivitis is a common infection in hospitalized neonates and sometimes with serious complications and long term sequelae. This study was done to identify the etiology and antibacterial resistance pattern of bacterial conjunctivitis in these neonates.  
**Methods**: In this study 72 neonates with clinically diagnosed conjunctivitis were studied. Personal informations, age, sex, results of culture and antibiogram pattern of eye discharges and the response to treatment were gathered and were analyzed with SPSS software.  
**Findings**: 61% of the patients were male and 39% female. The average age of patients was 11 days and 36% had positive culture results of eye discharges. The most common organisms cultured were staphylococcus aureus, Escherichia Coli, streptococcus, pseudomonas and haemophilus influenza in the order of frequency. The highest degree of antibacterial resistance was to ampicillin (100%), penicillin, cefixime and ceftazidime in the order of frequency and the highest degree of sensitivity was to vancomycin (100% for Staph. aureus and streptococcus) and imipenem (100% for E. Coli and haemophilus and 93% for pseudomonas). Empirical therapy with topical sulfacetamide and gentamicin was successful in 64% of cases.  
**Conclusion**: Due to increasing antibiotic resistance of bacteria implicating in neonatal conjunctivitis it seems necessary to perform culture and antibiogram on eye discharges before starting treatment in these patients.  
**Keywords**: Conjunctivitis, Antibacterial resistance, Culture, Antibiogram

The prevalence study of CTXM, SHV and TEM in Escherishia coli isolated from urine sample of Kermanshah children

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**Background**: Betalactamase enzymes can inactivate betalactam antibiotics by breaking down betalactam ring in their structure. ESBL E. coli is one of resistant bacterial strain. The aim of this study was prevalence determination of ESBL gene in E. coli strain isolated from urine samples of children in Kermanshah.  
**Methods**: A total of 170 urine samples of children has been surveyed. Standard biochemical tests were performed in order to isolate E. coli strains. Further phenotypical and genotypical identification were done on strains using combination disk diffusion method and PCR with specific primers for detection of TEM, SHV and CTX-M genes.  
**Findings**: The most antibiotic susceptibilities were seen in imipenem (86%) and nitrofurantoin (72%) and the least were seen in ampicillin (11.

Evaluation of platelets in Inflammation, infectious processes in children and its correlation with Level of ESR, CRP in Khorramabad

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Background: Inflammatory and infectious diseases are the major causes of morbidity and mortality. The identification of markers for the assessment of disease activity and response to treatment can improve long-term prognosis. Platelet production increases in the acute phase response to infection and inflammation. The measurement of platelet count has been available and is routinely done nowadays. However, few studies have been carried out on the significance of platelets as independent markers of disease activity. The aim of this study was to evaluate platelet count trend in infection and inflammatory processes. The study also investigated whether these parameters associated with the known markers of disease activity including erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP).

Methods: This cross-sectional study was conducted in the pediatric infectious wards of Shahid Madani hospital in Khorramabad in 2015. 150 children with diagnosis of infectious and inflammatory diseases were included in our study. Platelet count, ESR and CRP were measured at the time of hospitalization and thereafter in the recovery phase. A questionnaire including demographic information, diagnosis on admission and paraclinical data was completed. The statistical analyses were performed using the SPSS v. 15 software.

Findings: The results showed that 50% of the children were male and 50% were female. The results also showed that at the time of hospitalization, 150 children (100%) had abnormal ESR, 40 (26.7%) normal CRP, 110 (73.3%) abnormal CRP, 138 (92%) normal PLT, and 12 (92%) abnormal PLT. On discharge, 1 (0.7%) had normal ESR, 149 (99.3%) abnormal ESR, 132 (88%) normal CRP, 18 (12%) abnormal CRP, 140 (93.3%) normal PLT, and 10 (6.7%) abnormal PLT.

Conclusion: This study showed CRP was more useful for the follow-up of the patients because the number of the patients who had normal CRP after recovery was higher. However, the number of abnormal cases of ESR was relatively high, and ESR had a lower value than CRP, particularly in the acute phase. Regarding PLT, no remarkable value was found in this study. However, PLT is important in some patients with special diagnoses, such as those with Kawasaki syndrome due to the special physiopathology of the disease. Comparisons between PLT with ESR and CRP at the time of hospitalization and discharge in terms of gender showed a significant difference between PLT of hospitalization time and CRP of discharge. It showed that PLT changed simultaneously with CRP in the girls.

Keywords: Platelet, Infectious, Inflammation

Diagnostic utility of interferon gamma release assay in comparison with tuberculin skin test in children candidate for renal transplantation

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Background: Interferon gamma release assay (IGRA) has been approved as a new in vitro test to diagnose mycobacterium tuberculosis infection. However, the diagnostic value of this test depends on various population-based factors in each community and thus the assessment of its diagnostic performance in each population is necessary. The present study aimed to assess the diagnostic value of IGRA in comparison with tuberculin skin test (TST) to detect mycobacterium tuberculosis infection among Iranian children candidate for renal transplantation.

Methods: This cross-sectional study was performed on 31 children who were candidate for renal transplantation needing immunesuppressive medication visited at Ali Asghar Children Hospital from 2013 to 2015. In all patients, both TST and IGRA were performed according to standard methods.

Findings: IGRA was negative in all patients in both groups, while TST was positive only in only one case with no significant difference (p=0.35). None of the participants had simultaneous positive TST and IGRA, whereas both tests were negative in 30 patients yielding a negative predictive value of 96.7% and an accuracy of 96.7% for IGRA to diagnose mycobacterium tuberculosis infection when compared to TST.

Conclusion: IGRA is introduced as a diagnostic tool with high negative predictive value and a high accuracy for diagnosis of mycobacterium tuberculosis infection in children who are candidate for renal transplantation. Despite high cost, it can be used as an accurate alternative for screening mycobacterium tuberculosis infection.

Keywords: Interferon gamma release assay; Pediatrics; Renal; Transplantation; tuberculin skin test
Bacterial gastroenteritis in children in an Iranian referral Hospital: frequency of Salmonella and Shigella spp. and their antimicrobial susceptibility

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Background: Acute gastroenteritis is one of the most common causes of children diarrhea. This study was performed to detect the frequency of Salmonella and Shigella spp. and their antimicrobial susceptibility in children with diarrhea.

Methods: During 1392, all medical records of children admitted to a pediatric medical center were evaluated. Positive stool cultures of children were evaluated and frequency of Salmonella and Shigella spp. and their antimicrobial susceptibility was extracted.

Findings: In this study, 676 patients with the mean age of 24.94 months were enrolled and 211 positive cultures were obtained. The most common isolated bacteria were S. sonei with 39 cases (18.5%) followed by S. flexneri (N=36, 17%), S. paratyphi D (N=36, 17%), S. paratyphi B (N=26, 12%), S. paratyphi C (N=20, 9.5%), other Shigella spp (N=10, 5%) and Salmonella spp (N=5, 2.5%). Thirty-eight percent of S. paratyphi B were resistant to nalidixic acid, while higher frequency of nalidixic acid resistant was found in S. paratyphi C and S. paratyphi D. High frequency of trimetoprim/sulfametoxazol was seen in S. sonei and S. flexneri (77% and 56%, respectively), whereas more than 90% of S. paratyphi type B, C and D were susceptible to this antibiotic. Ampicillin resistant was more found in Shigella spp than Salmonella spp (92% in S. sonei, 51% in S. flexneri, 50% in S. paratyphi B, 20% in S. paratyphi C, and 6% in S. paratyphi D).

Conclusion: The prevalence of resistance to some commonly used antibiotics is high and differs within Shigella and S. paratyphi spp. Because resistance varies according to specific location, continuous local monitoring of resistance patterns is necessary for the appropriate selection of empirical antimicrobial therapy.

Keywords: Antimicrobial Resistance, Children, Bacterial Gastroenteritis

New congenital toxoplasmosis treatment

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The treatment of congenital toxoplasmosis is standard practice. The combination of sulfadoxine and pyrimethamine well tolerated. Maternal infection with Toxoplasma Gondii during pregnancy exposes the fetuses to a risk of infection through transplacental transmission. Congenital Toxoplasmosis is a severe infection which depends on gestational age. The consequences for the fetus range from subclinical to life-threatening manifestations such as miscarriage, stillbirths and neurological (hydrocephalus, meningoencephalitis and retinchoroiditis) or ocular (chorioretinitis) abnormalities. Monthly prenatal screening has been mandatory in France. Pregnancy follow up allows the early detection of severe fetal abnormalities. To reduce long-term lesions, infected infants are traditionally treated with a combination of pyrimethamine and sulfonamides. Infected infants are treated with combination of pyrimethamine and sulfonamides. Pyrimethamine and sulfadoxine (Fansidar) can be used orally every week or 10 days. Its side effects include bone marrow suppression (neutropenia or anemia), acute hypersensitivity skin reactions (stevens johnson syndrome). The length of treatment ranged from 5 months to 2 years. Dose of pyrimethamine varied from 1.25 mg/kg/15 days to 1 mg/kg/day. Dose of sulfadoxine 25 mg/kg/10 days. Dose of folinic acid 50mg/7 days. Higher dose of pyrimethamine are preferred in cases of severe infections. The doses of pyrimethamine in Fansidar tablets are 6 times lower than cotrimaxasole. So the adverse reactions from Fansidar have reported lower than cotrimaxasole. It has been hypothesized that Pyr-SDS may be more efficient than Pyr-SDX in vitro but no data are available to support this. Both treatment regimens may be equivalent, then safety and the ease of use might be taken into account.

Keywords: Congenital Toxoplasmosis, Cotrimaxasole

An uncommon feature of chronic granulomatous disease in a neonate

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A 24-day-old boy with 39 weeks gestational age, was referred to our hospital with vesiculopustular rash in the periortial, genitalia, foot and sacroilac regions. The patient was born to a 26-year-old primigravida woman after a full term gestation without any complications during pregnancy. His father and mother were cousins. His birth weight was 2700 gr. He was admitted to NICU due to respiratory distress, and was discharged after 4 days with a healthy condition. Ten days after his birth, he developed a vesiculopustular rash progressively in...
periorbital, genitalia, foot and sacroiliac regions. Fourteen days later, he was referred to our hospital and was admitted for further evaluation and treatment. There was no complaint of poor feeding or fever. In physical examination, his weight was 2950 gr. He was not ill or toxic. Neonatal reflexes were normal. Vesiculopustular lesions were asymmetric, partially ruptured and crusted. They were found in the left periorbital region, scrotum and penis, as well as the sacroiliac region and on the medial malleolus of the left ankle with some necrosis having extension into the dorsal surface of the foot. We also found conjunctivitis with purulent discharge and dactylitis in the left foot. Examinations of other organs were normal. Routine lab tests, smear and culture from lesions were performed. Table 1 shows the results of the routine lab tests. Gram positive cocci were seen in direct smear, and culture was positive for staphylococcus aureus. In addition, tzanck smear for the herpes simplex virus (HSV) was performed due to the form of lesions and was negative for HSV. We started our treatment with a combination of broad spectrum antibiotics (meropenem and vancomycin) regimen and local treatment with N/S irrigation and sterile dressing then modified it to vancomycin and amikacin when culture results were available. According to the severity and extension of the lesions, a consult with a dermatologist and an Immunologist was requested. Skin biopsy showed necrotizing-type granulomatous tissue reaction, with infectious etiology. Nitroblue tetrazolium (NBT) test and Dihydrorhodamine (DHR) tests was performed for confirming diagnosis. Osteomyelitis of the left ankle, right elbow and right wrist was seen in Tc99m whole body scan. BCGiosis or tuberculosis was ruled out by biopsy of phalanx. After a few days of treatment, the lesions were significantly improved and treatment with intravenous antibiotics continued for 6 weeks then discharged with antibiotic and anti-fungal prophylaxis.

**Keywords:** Chronic Granulomatous Disease, Infection, Skin Lesions, Osteomyelitis

### Discriminating between latent and active tuberculosis: the role of interleukin-2 as biomarker

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**Introduction:** In the last years, the potential role of distinct T-cell subsets as biomarkers of active tuberculosis TB and/or latent tuberculosis infection (LTBI) has been studied. The aim of this study was to investigate the potential role of interleukin-2 (IL-2) in whole blood stimulated with Mycobacterium tuberculosis-specific antigens in the QuantiFERON-TB Gold in Tube (QFT-G-IT) for the discrimination of active and latent tuberculosis.

**Methods:** In this study we included 30 patients with active tuberculosis infection, 30 with LTBI and 30 healthy individuals. The QFT-G-IT (Cellestis Ltd., Victoria, Australia) test was carried out according to the manufacturer’s instructions. After 72-h of stimulation by antigens from the QFT-G-IT assay, IL-2 secretion was quantitated in supernatants by using ELISA (Mabtech AB, Sweden).

**Findings:** Observing the level of IL-2 released after 72-h of incubation, we found that the level of IL-2 were significantly higher in LTBI group than in patients with active TB infection or control group (P=0.019, Kruskal–Wallis test). The discrimination performance (assessed by the area under ROC curve) between LTBI and patients with active TB was 0.816
(95%CI: 0.72-0.97). Maximum discrimination was reached at a cut-off of 13.9 pg/mL for IL-2 following stimulation with 82% sensitivity and 86% specificity.

**Conclusion:** Although cytokine analysis has greatly contributed to the understanding of TB pathogenesis, data on cytokine profiles that might distinguish progression from latency of TB infection are scarce and even controversial. Our data indicate that evaluation of IL-2 could be instrumental in discriminating active and latent TB infection.

**Keywords:** Interleukin-2, discrimination, active TB, latent TB

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**Evaluation of epidemiological, clinical and laboratory finding in children with meningitis in Khorramabad**

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**Background:** Familiarity with the epidemiological, clinical and laboratory features of meningitis is important for rapid diagnosis and initiation of therapy. This study aimed at evaluating these patients based on their epidemiological, clinical and laboratory findings and comparing these variables with patients with septic and aseptic meningitis.

**Methods:** In this retrospective study, all patients who were hospitalized between 2014 to 2015 and suspected for meningitis were studied. Cases were grouped as BM and ASM and compared for their epidemiological, clinical and cerebrospinal fluid (CSF) laboratory aspects.

**Findings:** Among 63 patients with meningitis, 44 (69.8%) had septic meningitis and 19 (30.2%) had aseptic meningitis. Of 44 patients with septic meningitis, 10 patients (22.72%) had positive microbial culture. Most of bacteria (70%) that isolated from samples were Neisseria meningitides. The means for CSF-WBC, CSF-glucose and CSF-protein in septic meningitis compared with aseptic meningitis patients were 64.81±6.27 vs. 28.26±8.90 cell/mm3 of CSF; 40.95±9.70 vs. 72.10±5.27 mg/dl and 115.23±13.28 vs. 61.94±9.49 mg/dl, respectively.

**Keywords:** Meningitis, Septic, Cerebrospinal Fluid

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**Determination of microorganism types and antibiotic resistance pattern of children with urinary tract infection in Kermanshah 2015**

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**Background:** Urinary tract infection is the most prevalent childhood infection after respiratory tract infection and gastroenteritis. Escherichia coli, the most frequent UTI pathogen, is responsible for more than 80% of them. The aim of this study was frequency and antibiotic resistance pattern determination of UTI pathogens of children under 15 years old in Kermanshah.

**Methods:** This study carried out on 121 one positive urine culture of children on 6 month period in 2015. After microorganism determination antibiotic susceptibility test was done with disc diffusion method.

**Findings:** UTI was more frequent in girls. The most of cases were under 2 years old. The most prevalent pathogens were E. coli (71.1%), Enterobacter (14.9%) and other pathogens (14%) respectively. Ciprofloxacin (11.6%), Nitrofurantoin (18.6%) were the most susceptible and ampicillin (5.4%), cotrimoxazol (21%) were the most resistant antibiotics.

**Conclusion:** Results shows the importance of nitrofurantoin and ciprofloxacin in treatment of UTI infection. Unnecessary prescription of these antibiotic seems pivotal. Considering the difference between prevalence and antibiotic resistance pattern of pathogens in each area periodical epidemiological studies seems necessary.

**Key words:** Urinary Tract Infection, Antibiotic Resistance, Antibiogram
Neonatology

Benign neonatal hemangiomatosis, A Case Report and reviewed literature

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Hemangiomas are the most common benign tumor of childhood, and usually present at birth or during the first few months of life (1). Benign neonatal hemangiomatosis is a cutaneous condition in infants, characterized by multiple cutaneous lesions without evident visceral hemangiomas. BNH denotes multiple cutaneous lesions without any symptomatic extracutaneous lesions or complications. Diffuse neonatal hemangiomatosis is a serious multisystem syndrome of multiple cutaneous hemangiomas, visceral hemangiomatosis with arteriovenous shunts, high output congestive heart failure, thrombocytopenia with hemorrhage and central nervous system involvement. Some neonates with multiple cutaneous hemangiomas, however, may follow a benign course of spontaneous resolution without symptomatic visceral involvement. Such cases may be called benign neonatal hemangiomatosis. We report a full term neonate with benign neonatal hemangiomatosis without evident visceral hemangiomas and reviewed literature.

Keywords: Multiple Hemangiomas, benign tumor, neonate

Congenital Malformations in singleton infants conceived by Assisted Reproductive Techniques and singleton infants with natural conception in Tehran

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Background: Many studies show that congenital malformations in infants conceived by assisted reproductive techniques (ART) occur more often than in infants that were naturally conceived (NC). Multiple pregnancies occur more frequently when using ART methods than following NC and it is known that the risk of congenital malformations in a multiple pregnancy are higher than single pregnancy; the aim of this study is comparison of congenital malformations in singleton infants conceived by ART and singleton infants conceived naturally.

Methods: We performed a historical cohort study of major congenital malformations (MCM) in 820 singleton births from January 2012 to December 2014. In our study, the risk of congenital malformations was compared in 164 ART infants and 656 NC infants. We also performed multiple logistic regression analyses to calculate the odds ratio (OR) and 95% confidence intervals (CI) for the independent association of ART on each outcome.

Findings: We found 40 infants with major congenital malformations: these included 27 NC infants (4.1%) and 13 ART infants (7.9%). In comparison with NC infants, ART infants had a significant 2 fold increased risk of MCM (P= 0.046). After adjusting individually for maternal age, infant’s sex, stillbirth, spontaneous abortion and type of delivery, we did not find any difference in risk. In this study the majority (95.1%) of all infants were normal but 4.9% of infants had at least one MCM.

Conclusion: Other studies have shown a slightly increased risk of major congenital malformations in pregnancies resulting from singleton ART. Likewise, this study reports a greater risk of MCMs in ART singleton infants than in NC singleton infants. We also found evidence of a difference in risk of MCMs between in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI). Congenital heart disease, developmental dysplasia of hip (DDH) and urogenital malformations were the most reported MCMs in singleton ART infants according to organs and systems classification.

Keywords: singleton infants - Assisted Reproductive Techniques- Congenital malformations- Natural Conception

Risk Factors Associated with Cerebral Hemorrhage in the Newborns Admitted to the Neonatal and Neonatal Intensive Care Units in 17 Shahrivar Hospital in Rasht, Northern Iran

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Background: Intracranial hemorrhage in infants is associated with several factors. This has allowed different studies to report different levels of it. Therefore, further studies are required in order to arrive at reliable and common risk factors.

Methods: In this descriptive prospective study, hospitalized infants with ultrasound and CT brain indication, including all preterm infants and neonates with symptoms such as seizures, loss, unexplained anemia and hypoglycemia were enrolled. To diagnose intracranial hemorrhage, ultrasound and CT. Scan
Evaluation of feeding tolerance in very low birth weight infants given enteral Granulocyte-Colony Stimulating Factor (G-CSF) compared to historical controlled group.

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This non-randomized clinical trial study was performed on preterm infants (≤1500g birth weight) without any major anomaly. Two groups of neonates included in the study by sequential admissions. In historical control group (n=220) the enteral feeding began and advanced with our unit’s feeding policy. Our unit’s feeding policy was to starting early trophic feeding with 10-20 mL/kg/day, preferably breast milk if available, and progressing by 10-20 mL/kg/day for as long as tolerate (as judged by the attending neonatologist). This feeding policy didn’t alter during this study. The 73 included newborns were in trial group and given enteral G-CSF. These neonates fed with the unit’s feeding policy and given a single daily dose of enteral G-CSF, 5 micg/kg (Filgrastim 300 micg/5mL) concurrent with feeding started. The daily dose for each patient was diluted in sterile distilled water and administered through the orogastric/nasogastric tube with milk feedings for 7 days. The unit’s feeding policy was same as historical control group. The following outcome data will record: duration of hospital stay; mortality; time to establish one-half, two-thirds, and full enteral feedings; duration of total parenteral nutrition; time of weight gain started; the in rate of necrotizing enterocolitis; and adverse effects of enteral feeding and treatment (vomiting, increased gastric residual, abdominal distention, diarrhea, bloody stool, skin rash)

Results: All neonates tolerated the treatment without side effects. Neonates who received G-CSF had better feeding tolerance, as reflected by earlier achievement of 75 mL/kg/day, 100 mL/kg/day, and full enteral feeding of 150 mL/kg/day with earlier weight gain and a shorter hospital stay (P < .05). Duration of hospital stay was shorter and mortality was fewer than control group (P < .05). The risk of necrotizing enterocolitis was reduced from 5% to 1% in all treatment groups (P < .05). There was a shorter duration of withholding of feeding secondary to feeding intolerance among neonates receiving G-CSF compared with the historical controlled group (P < .05).

Conclusions: Enteral administration of G-CSF improves feeding outcome and decreases the risk of necrotizing enterocolitis in preterm neonates. The mechanism may involve the prevention of villous atrophy.

Keywords: newborn, G-CSF, feeding tolerance

Invasive candidiasis incidence before and after fluconazole prophylaxis in the neonatal intensive care unit (NICU) in Bahrami Hospital during 1390 to 1394

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Background & Objective: Critically ill infants are at significant risk for invasive Candida infections. Additionally, within the Neonatal Intensive Care Unit (NICU), very low birth weight (VLBW) infants ≤1500g and extremely low birth weight (ELBW) infants ≤1000g are at highest risk for Candida infections. We evaluated the impact of fluconazole prophylaxis in the neonatal intensive care setting.

Methods: This retrospective study was performed on 130 neonates admitted to the NICU in Bahrami Hospital. Data collection based on laboratory data, diagnostics, and medical records of the patients. The subjects were divided into two groups of neonates who had received fluconazole and who didn’t have received. Basic information and a full range of interventions for infants were recorded. Data were analyzed using SPSS.

Results: The results showed, invasive candidiasis incidence in NICU infants decreased from 33% before fluconazole prophylaxis to 15% in 1392-1394. A significant relationship was found between invasive candidiasis incidence and mortality (P = 0.02) and the percentage of deaths in the group with candida infection was much higher than other group (39% vs. 19%).

Conclusion: According to this study, the policy of fluconazole prophylaxis is recommended to reduce the severity of outbreaks and mortality in preterm infants who admitted to the NICU, especially in infants with Central Venese Catheter and Umbilical Catheter, intubated infants and who have received TPN.

Keywords: invasive candidiasis incidence, fluconazole, NICU, prophylaxis

were used in the days 3, 7, 14, 28 (discharge days), based on doctor discretion. Follow up for 6 months was performed by a neurologist and data were analyzed by SPSS software version 17.

Findings: The percentage of cerebral hemorrhage was 1.13 and 3.051 in neonates less than 35 weeks of gestational age (P= 0.001). Cerebral hemorrhage in delivery by NVD method was 8.8% and in delivery with C/S was 3.5% (P= 0.001). Comparing distributions of the Apgar score, the percentage of cerebral hemorrhage in neonates with Apgar scores more than 7 was 1.8% and Apgar score below 3 was 66.7 (P< 0.05). Cerebral hemorrhage in delivery by NVD method was 1.8% and Apgar score below 3 was 66.7 (P< 0.05).
The impact of maternal illness on the neonate

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Chronic and acute maternal illness can have implication for the developing fetus and newborn, some of which may be life long. Preterm delivery: is the greatest contributor to overall neonatal morbidity and mortality. It is a factor for at least half of all neonatal deaths and morbidity, some of which can be life long including neurodevelopmental issues, chronic lung disease, increased risk of infection, visual impairment, gastrointestinal and renal dysfunction etc. Underlying reasons for prematurity are many, important factors include urinary tract infections, sexually transmitted infections, ascending intrauterine infection and environmental exposures such as cigarette smoking. Obesity: during pregnancy, obese women have higher risks for developing gestational diabetes and preeclampsia and prematurity. Hypertensive disorders and preeclampsia: early onset preeclampsia associated with FGR and SGA, placenta abruption is more commonly seen among pregnant women with preeclampsia. Diabetes mellitus: fetal anomalies and stillbirth rates are higher with hyperglycemia. The most common abnormalities include NTDs, complex congenital heart defects, skeletal malformations. Thyroid disease: diseases of the thyroid gland are some of the most common endocrine problems encountered during gestation. Women with hypothyroidism are at higher risk for miscarriage and stillbirths, preterm delivery, preeclampsia, FGR and placental abruption. Autoimmune disorders, perinatal infections, liver disease are fatal and neonatal risks.

Keywords: neonate, pregnancy, maternal illness

Procedural pain control in neonates

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Compared with older children, neonates are more sensitive to painful stress. They exhibit greater metabolic, hormonal and cardiovascular responses to painful producers. So painful producers in neonates may cause neurodevelopmental delay. Therefore higher doses of analgesics may require for adequate pain control in neonates. The non-pharmacological options used in combination with pharmacological treatments can have additive or synergic effects in controlling procedural pain and stress and reduced neurological sequels. Therefore standardized pain assessment methods should be used along with guidelines for using analgesia in neonates undergoing painful procedures in all NICUs. There have to be management approaches for Heel Lance, Percutaneous Venous Catheter Insertion, Peripherally Inserted Central Catheter Placement, Central Venous Line Placement, Umbilical Catheter Insertion (Umbilical Arterial/Umbilical Venous), Lumbar Puncture, Subcutaneous or Intramuscular Injection, Endotracheal Intubation, Endotracheal Suction, Nasogastric or Orogastric Tube Insertion, Chest Tube Insertion and Circumcision.

Keywords: Pain management, Neonates, Analgesics

A Comparative Study between Ranitidine and Omeprazole in Severe GERD of Premature Infants

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Background: Gastroesophageal reflux disease (GERD) is one of the most common problems in neonates. It refers to troublesome symptoms that complicate the physiologic GER. As few studies have compared the effect of acid suppressants in the treatment of severe GERD in premature infants, the present trial was enrolled to compare the effectiveness of omeprazole with ranitidine in this regard.

Methods: This study was performed on 60 preterm newborns (mean age, 9. 53±6. 761days; 56. 66% girls and and birth weight of 1583. 67±613. 965 grams) with GERD resistant to conservative therapy hospitalized in neonatal ward of Shariati Hospital during 2014-2016. Neonates were randomly assigned to a double blind trial with either oral omeprazole or oral ranitidine in each group. After one week, changes in symptoms and signs were recorded.

Results: There were no statistically significant differences between the two groups regarding demographic data and baseline characteristics. All GERD-related clinical manifestations improved after administration of ranitidine or omeprazole. Our study showed omeprazole is effective as ranitidine in treatment of severe GERD in premature infants (96. 43% vs. 93. 34%, respectively, P= 0.595). Conclusion: Our study showed omeprazole is effective as ranitidine in the treatment of severe GERD in premature infants. As omeprazole is associated with fewer side effects compared to ranitidine, it may be used as the first acid suppressant in severe GERD in preterm infants.

Keywords: severe gastroesophageal reflux disease, premature neonates, ranitidine, omeprazole
The comparison of serum level of interlukin 10 in preterm neonate with or without respiratory distress syndrome

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Background: Respiratory distress syndrome (RDS) is a common cause of death in preterm neonates that inflammatory mechanisms and alteration of cytokines play role in its pathophysiology. In this study, we intended to evaluate IL-10 levels in premature neonates with and without respiratory distress syndrome.

Methods: This case-control study was done on 30 preterm neonates with RDS and 30 preterm neonates without RDS hospitalized in 17 Shahrivar hospital in Rasht. Variables such as age, sex, birth weight, gestational age, surfactant therapy, length of Hospitalization, neonatal death and IL-10 serum level in prepared questionnaire were recorded. Data were analyzed by SPSS ver. 21 statistical software.

Findings: In this study, 60 patients were studied. The average ages in the preterm neonate with and without RDS were 11.83 ± 5.4 hours and 13.3 ± 5.18 hours, respectively. Preterm neonates with RDS showed higher IL-10 level (29.46 pg/ml vs 5.31 pg/ml) (P= 0.018). Moreover the IL-10 level were statistically higher in preterm neonate with RDS who died than the others (P=0.049). There was no significant association of IL-10 levels with age, gender, admission weight, surfactant therapy and gestational age of preterm neonate with and without RDS.

Conclusion: According to our findings it seems IL 10 play a role in pathophysiology of RDS and it should be considered as a biomarker in evaluation of process and prognosis of disease.

Keywords: IL-10, Preterm newborn, Respiratory distress syndrome

Incidence of Neonatal Birth Injuries and Related Factors in Kashan, Iran

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Background: Birth injuries are defined as the impairment of neonatal body function due to adverse events that occur at birth and can be avoidable or inevitable. Despite exact prenatal care, birth trauma usually occurs, particularly in long and difficult labor or fetal malpresentations.

Objectives: This study aimed to investigate the incidence of birth injuries and their related factors in Kashan, Iran.

Methods: In this cross-sectional study, all live-born neonates in the hospitals of Kashan City were assessed prospectively by a checklist included demographic variables (maternal age, weight, and nationality), reproductive and labor variables (prenatal care, parity, gestational age, premature rupture of membrane (PROM), fetal heart rate (FHR) pattern, duration of PROM, induction of labor, fundal pressure, shoulder dystocia, fetal presentation, duration of second stage, type of delivery, and delivery attendance), and neonatal variables (sex, birth weight, height, head circumference, Apgar score, and neonatal trauma). Birth trauma was diagnosed based on pediatrician or resident examination and in some cases confirmed by paraclinic methods. Statistical analyses were performed by chi-square, student’s t-test, and multiple logistic regression analyses using SPSS version 17. P ≤ 0.05 was considered statistically significant.

Results: In this study, the incidence of birth trauma was 2.2%. Incidence of trauma was 3.6% in vaginal deliveries and 1.2% in cesarean sections (P < 0.0001). The most common trauma was cephalohematoma (57.2%) and then asphyxia (16.8%). In multiple logistic regression analyses, decreased fetal heart rate (FHR), fundal pressure, shoulder dystocia, vaginal delivery, male sex, neonatal weight, delivery by resident, induction of labor, and delivery in a teaching hospital were predictors of birth trauma.

Conclusions: Overall, incidence of birth trauma in Kashan City was lower in comparison with most studies. Considering existing risk factors, further monitoring on labor, and delivery management in teaching hospitals are recommended to prevent birth injuries. In addition, careful supervision on students and residents’ training should be applied in teaching hospitals.

Keywords: Birth injury; Incidence; Neonate; Risk Factors


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Introduction: Intraventricular hemorrhage (IVH) is one of the major causes of brain injury in premature infants. IVH occurs primarily in preterm infants and it’s prevalence increases with lower gestational age and birth weight. Such that the highest rate of IVH is seen in infants of <32 weeks gestational age or <1500 gr birth weight. The severity of IVH is classified into 4 grades using cranial ultrasound. Considering the high prevalence of IVH in preterm infants and the importance of
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-37 weeks gestational age) (P=0.014).

Alborz Jashni Motlagh

Keywords complications of this disease might be reduced.

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weight, gestational age and fifth

Conclusions: Based on the result of the present study, birth
weight, gestational age and fifth-minute apgar score were
associated with IVH. By preventing preterm deliveries and
providing preventive and curative strategies, the
complications of this disease might be reduced.

Keywords: IVH; prematurity; LBW; brain ultrasound

What is the best weight of discharge for LBW neonates?

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Background: Low birth weight is a common problem in
neonates, especially in low income countries. The mortality
rate of infants with very low birth weight (below 1500 gr) is too
high. Since that in European countries discharge criterion is
1800-2100 gr but Due to limited capacity of the hospitalization
and quicker turnover of admission and discharge, we are
discharging these patients when they reach 1500 gr. So we
should survey rate of mortality and re-hospitalization and if
the difference in term of mortality between these two groups
were not significant, early discharging of these low birth
weight infants be placed on the future programs (without side
effects).

Objective: This study aimed to investigate the relationship
between mortality and re-hospitalization with low weight
discharged infants.

Method: In this cohort study 192 infants hospitalized in the
kamali and bahonar hospitals of Alborz university which were
divided in two groups, 96 infants with below 1500 gr weight
and 96 infants with above 1500gr (1500 to 2500) will be
selected and evaluated and demographic requirement
information such as gestational age, infant gender, family
history, birth order, birth weight collected in the checklist that
contains study variables, then consequences including
mortality and morbidity (re-hospitalization) after discharge up
to 3 months were determined.

Result: Mortality and re-hospitalization rate in low weight
discharged infants in both investigated groups were
significantly different based on gestational age and birth order.
The first child and preterm infants had the highest number of
the mortality and morbidity, but this different according to
gender and family history were not significant. In total,
Consequences of mortality and readmission rate in both
groups were significantly different and we have detected that
the lowest mortality and morbidity weight of discharge was
1620-1645 gr. (P-value

Keywords: LBW, Newborn, mortality, morbidity

Severe anemia and hydrops in a neonate with
parvovirus B19 infection: A case report

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Background: Anemia at the time of birth may cause some
problem like asphyxia, heart failure shock or even death in a
neonate. Different etiologies can be considered for this
problem. Parvovirus B19, as a viral organism, can cause
hydrops fetalis and neonatal anemia and consequent
complications. We present here a case of newborn infant with
severe anemia who had human parvovirus B19 infection.

Case Presentation: A male newborn with gestational age of 36
week was born from a mother with poor prenatal care and
history of contact with domestic animal. The neonate was very
pale with Apgar score 2 at 1 min and received resuscitation,
mechanical ventilation and repeated blood transfusion The
hemoglobin level was significantly low. Analysis was made
based on the clinical presentations. According to the case
Declining pattern of bilirubin in severe neonatal hyperbilirubinemia: a comparative study between intensive and double phototherapy â€“ THE FIRST REPORT

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Background: Although phototherapy has been used in clinical practice for 50 years, there is still much debate about how the most efficacious phototherapy application can be provided.

Objective: This study aimed to evaluate the declining pattern of serum bilirubin and so the efficacy of two type of phototherapy (double versus intensive phototherapy) in treatment of severe hyperbilirubinemia of neonate in severe hyperbilirubinemia of nonates.

Materials /patients and methods: 100 healthy full-term neonates with nonhemolytic hyperbilirubinemia (Total serum bilirubin between 20 to 25mg/dL) were allocated in this study. The first group received double phototherapy (DP) (8 lamps) and the second group received intensive phototherapy (IP) (12 lamps).

Results: The mean serum bilirubin declined significantly in ID group 6 hours after phototherapy in comparision to DP group (4.65±3.02 mg/dL versus 3.59±1.86 mg/dL) with P= 0.008. The mean serum bilirubin decline was not statistically different (P=0.277) in the second 6 hours of phototherapy between two groups.

Conclusion: As our study showed significant decline rate of bilirubin in intensive phototherapy in the first 6 hrs of phototherapy in comparison to the second 6 hrs of phototherapy, we recommend to start phototherapy with IP in high bilirubin levels. After 6 hrs, it can be changed to DP if total bilirubin is under exchange transfusion level. More studies are needed to support this suggestion.

Keywords: double phototherapy, Intensive phototherapy, neonatal hyperbilirubinemia

Fournier’s Gangrene in a Neonate With Acute Myeloid Leukemia: A Case Report

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Introduction: Fournier’s gangrene is an infective necrotizing fasciitis of external genital and perineal region. Hematologic malignancies and immunocompromised status are predisposing factors. Simultaneous occurrence of Fournier’s gangrene and congenital leukemia in neonates is extremely rare.

Case Presentation: We present a case of Fournier’s gangrene in a 4-day-old female infant with a necrotic lesion in perineum and no history of trauma or other predisposing condition. Focusing on high blast percentage in blood cell count she was affected by acute myeloid leukemia (M4 type). Pseudomonas aeruginosa was isolated from the blood and wound culture. She was treated with broad spectrum antibiotics and supportive care. The parents refused chemotherapy and the patient was discharged from hospital. Bleeding and DIC was the cause of death in a local hospital few days later.

Conclusions: High index of suspicion is essential for diagnosis and appropriate treatment. Congenital leukemia should be considered in the differential diagnosis of a newborn with clinical features of sepsis and necrotizing fasciitis.

Keywords: Fournier’s Gangrene, Acute Myeloid Leukemia, Neonate

Effect of Kangaroo mother care on hospital stay duration in less than 2000 grams low birth weight neonates.

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Objective: The aim of study was to compare the effect of Kangaroo mother care (KMC) and conventional methods of care (CMC) on hospital stay duration in low birth weight babies less than 2000 grams as a cost benefit item.

Method: One hundred babies with birth weight less than 2000 grams and without clinical problem were randomized in two groups, the intervention group (N=50) received Kangaroo
mother care and the control group (N=50) received conventional care. Two groups were compared in self confidence of mother. Collected data was analyzed by SPSS 11.5 software.

Results: Duration stay on hospital in KMC group was significantly shorter than on CMC group. A significantly longer duration of hospitalization observed in CMC group 16. 24±1 0.04 vs 27. 18±12. 07 (p

Keywords: Kangaroo mother care, Low birth weight, Conventional methods of care

Comparison of bilirubin level in term infants born by vaginal delivery and cesarean section

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Background: Given the overriding importance of neonatal jaundice and scarcity of studies on the role of route of delivery on its occurrence, this study aimed to investigate the association between neonatal bilirubin level and the route of delivery (i.e., normal vaginal delivery [NVD] and cesarean section [CS]).

Methods: This prospective, cross-sectional study was conducted in 2012 in Imam Reza Hospital of Mashhad, Iran, 2012. In all term infants, who met the inclusion criteria, serum bilirubin level was measured by the bili-test device between the second and seventh days after birth. In cases with skin bilirubin level>5 mg/dl, serum bilirubin was also checked. The collected data were analyzed using SPSS, version 16.

Results: A total of 182 neonates were enrolled in the study, 56% of whom were male. The mean bilirubin levels in the NVD and CS groups were 9. 4±2. 9 mg/dl and 9. 8±3. 4 mg/dl, respectively (P= 0.53). Additionally, comparison of the mean bilirubin levels between the two groups based of demographic characteristics demonstrated no significant differences.

Conclusion: This study showed no significant correlation between neonatal jaundice in term infants and the route of delivery.

Keywords: Cesarean section, Hyperbilirubinemia, Neonatal jaundice, Normal vaginal delivery

A review of ventilator-associated pneumonia in a neonatal intensive care unit

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Ventilator-associated pneumonia (VAP) is a common and serious problem among mechanically ventilated (MV) patients in neonatal intensive care units (NICU). The centers for disease control and prevention defines VAP as a nosocomial infection diagnosed in patient undergoing MV for at least 48h. according to review of recent conducted studies found out the main pathogenic bacteria of VAP were gram negative (93. 40%) such as Klebsiella pneumonia, Acinetobacter baumannii, Enterobacter cloacae, Escherichia coli and Enterobacter aerogenes, and the main gram positive pathogen was Staphylococcus aureus. Compared to previous studies has been a significant increase to rate of infection by Enterobacter cloacae and reduce rate of infection by pseudomonas aeruginosa. The risk factor of VAP include premature infants, low birth weight, length stay in NICU, tracheal intubation and the frequency of intubation, mechanical ventilation, bronchopulmonary dysplasia, parenteral nutrition, enteral feeding, transfusion. No conclusive methods have been reported on how to prevent VAP in the neonatal period; however, implementation of hygienic measures and early extubation are apparently the most efficient strategies to reduced VAP.

Keywords: VAP, Mechanical ventilated, NICU, Risk factor

Nosie in NICU: hemodynamic changes in low and very low birth weight neonates

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Background:having problems are one of the disabling disorders, and if would not be diagnosed until age 3, it lead to language and learning difficulties, and developmental delay. Children admit in NICU expose to noise more than usual. There is a great concern about noise impact on neonate health. The aim of this study was to evaluate the effect of noise in NICU on neonates hemodynamic parameters.

Methods: this cohort study was approved by ethical committee of Mashhad University of medical sciences. And all neonates admitted in Qaem hospital NICU were enrolled the study. Noise was measured two times (day and night) in NIUC.
And hemodynamic parameters such as blood pressure, mean arterial pressure and heart rate was assessed, also. Data was analyzed by SPSS version 16.

**Results:** 40 neonates were evaluated in our study. Their mean gestational age was 30/7±2/1 weeks with arrange between 27 and 36 weeks. Mean noise level was 59/4±7/7 during night and 67/8±6/7 during day time. Average changes in heart rate, systolic blood pressure, diastolic blood pressure and mean arterial pressure were 12/7±5/5 per minute, 7/5±3/8 mmHg, 3/8±2/4 mmHg and 5/1±2/7 mmHg. Using linear regression did not show a significant effect of noise on these parameters (p=0.05).

**Conclusion:** this study showed that noise levels were higher than NICU standard levels all day time.

**Keywords:** noise, low birth weight, NICU

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**Investigating the relationship between breastfeeding duration and type of delivery in a multi-center study in Tehran, Iran**

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**Background:** Because of the increasing duration of breastfeeding and exclusive breastfeeding directly correlates with the enhancement of the breastfeeding benefits for both mother and baby, we compared the duration of breastfeeding and exclusive breastfeeding in women with cesarean section and vaginal delivery in hospitals related to medical unit of the Islamic Azad University of Tehran.

**Methods:** This study was conducted cross-sectional and case-control. The investigated society was 180 women with a history of childbirth who were selected by convenience sampling. 90 patients for case group (cesarean) and 90 in the control group (vaginal delivery) were used.

**Findings:** based on independent t-test, the median duration of breastfeeding infants vaginal delivery were significantly greater than the cesarean delivery. (P= 0.002) t-test, the duration of breast feeding mothers with a vaginal delivery history was significantly longer than in women with history of cesarean section (P= 0.001).

**Conclusion:** Considering the effects of breastfeeding for both infants and mothers, any factor that creates of the disorder have awarded. Cesarean section causes delay in cuddling the infants, delayed onset of lactation, the refusal of the breast caused by antibiotics in milk flavor and difficulty in adopting the correct breastfeeding positions because of pain, interfere in initiation of breastfeeding, and accelerate the use of the auxiliary valve.

**Keywords:** Caesarean, Vaginal delivery, Breastfeeding, Infants, Exclusively breastfeeding

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**Effects of Delayed Cord Clamping on Intraventricular Hemorrhage in Preterm Infants**

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**Background:** One of the benefits of delayed cord clamping is a reduction in the rate of intraventricular hemorrhage. Some studies reject these findings and sometimes negative effects have been reported. This study aimed to compare effects of delayed cord clamping on intraventricular hemorrhage in preterm infants.

**Methods:** This clinical trial was carried out at the Ayatollah Rohani Hospital in Babol on 70 preterm neonates delivered via cesarean section and gestational age of less 32 weeks and birth weight of less than 1500 gram. Neonates were randomly assigned to two groups of early cord clamping (less than 10 seconds) or delayed clamping of the umbilical cord (45-30 seconds after birth). Then 3 to 7 days after birth, an ultrasound was done to check for the presence of IVH (Intraventricular hemorrhage) in two groups by mind ray machine model m7. The rate and severity of IVH was compared between two groups.

**Findings:** The mean gestational age, birth weight, gender distribution and use of medications in both groups delayed cord clamping and early clamping of the umbilical cord was no significant difference. The incidence of seizures in the early clamping was 8. 6% and in the delay clamping was zero (p= 0.239). The incidence of IVH and PVL (Periventricular leukomalacia) was 8. 6% and 5. 7%, respectively in the early clamping, while this rate was zero in the delay clamping, but this difference was not statistically significant in both indicators (p= 0.239 and p= 0.493, respectively)

**Conclusion:** The results showed that intraventricular hemorrhage in premature neonates with delayed clamping
was less than early clamping, and may be used as a reliable method.

**Keywords:** Delayed cord clamping - intraventricular hemorrhage - preterm neonates.

### Air leak syndrome in a term newborn: A case report 1

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**Background:** Air leak syndrome include conditions of pneumothorax, pneumomediastinum subcutaneous emphysema, pneumoperitoneum and pneumopericardium. It may occur in premature newborns with respiratory distress syndrome or patients managed with ventilator. Pneumomediastinum is usually of little clinical importance and usually does not need to be drained. However, its presence should alert the clinician of an increased risk for subsequent symptomatic air leaks. Symptomatic infants are often placed in 100% oxygen for up to 24 hours (nitrogen washout).

**Case presentation:** Our patient was a term newborn with NVD labor without any trauma. His 1- minute Apgar scores was 9 and 5-minute Apgar scores decreased to seven. After birth he had respiratory distress and tachypnea, grunting, nasal flaring, retractions and cyanosis. Gradually with warming under warmer and oxyhood he became stable and cyanosis was disappeared. The diagnosis became clear on radiographic evaluation. We found elevation of the edge of the thymus from the pericardium by mediastinal free air in a characteristic crescent or spinnaker sail configuration. We used 100% oxygen by a hood for 5 days and follow-up radiographs was obtained until the resolution of the pneumomediastinum.

**Conclusion:** Pulmonary air leak syndromes may develop without any underlying disease in neonates. Supportive care and oxyhood with 100% Oxygen might lead to nitrogen washout and resolution.

**Keywords:** Air leak syndrome, Pneumomediastinum, Newborn

### Lead intoxication with antenatal fetal exposure to opium due to mother addiction: A case report 2

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**Background:** Use or abuse of certain illicit and prescription drugs in our country adversely affects public health in diverse ways and substantially increases overall health care expenditures. Selected antenatal drug exposures can produce significant short-term consequences or serious permanent long-term injuries in the child. Many illicit drugs like opium have high percent of Lead. Lead readily crosses the placenta, and is a known neurotoxin. Developmental exposure is linked to learning disability, cognitive and language deficits, and ADHD. The major repository for lead is bone, and chronic exposure results in significant accumulation of lead in the skeleton. Lead stores are mobilized from bone during pregnancy, potentially exposing the fetus during critical stages of brain development.

**Case presentation:** Our case was a term boy that became symptomatic in eleventh day of life. He was reffered to our hospital for poorfeeding, fever, lethargy, hypotonia and seizure. The seizure was controlled with Diazepam in another medical center. Urine for opiate and benzodiazepeine was positive. His mother was opium addict during pregnancy and neonatal period. Urine for opiate and benzodiazepeines was positive. We check the serum Lead of the infant. The serum Lead was high. After 3 days with intravenous EDTA therapy the serum Lead were decreased without any complication. Our patient was discharged with a good condition and now is followed as an outpatient.

**Conclusion:** Check the serum Lead is mandatory for infants whose mothers were addicted with opium.

**Keywords:** Addiction, Lead intoxication, neonate, opium

### Tongue-tight in a newborn with feeding problem : A case report 3

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**Shahid Beheshti University of Medical Sciences, Loghman Hakim Hospital, Tehran, Iran**

**Background:** Commonly known as tongue-tie, ankyloglossia is a congenital oral anomaly that may result in difficulty with sucking and could lead to sore nipples, low milk supply, poor weight gain, maternal fatigue, and frustration. It may affect breastfeeding more than bottle-feeding because of the differences in tongue movements between the feeding modalities.

**Case presentation:** Our case was a newborn who was unable to extend the tongue forward beyond the gum line, preventing compression of the nipple and areola, and reducing the effectiveness of the sucking effort. Frantic sucking traumatized the nipple. Maternal pain led to withdrawal of the breast and inhibition of milk letdown. The newborn could not extend the tongue beyond the lower gum border, had restriction of tongue mobility, and especially unable to elevate the tongue. For impending lactation failure and maternal pain was present, a frenotomy was performed in the hospital. The infant could be put to the breast right after the procedure.

**Conclusion:** Careful oral evaluation of the infant is needed, assessing the ability to extend the tongue beyond the lower
gum border, observing for restriction of tongue mobility, in breast feeding problems.

**Keywords:** Ankyloglossia, Tongue-tie, Breastfeeding, Neonates

isolated and identification of Enterobacter Sakazaky from blood samples of newborns admitted to the NICU and confirmation by molecular methods

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**Background:** The Bacillus Enterobacter Sakazaky Gram negative, is a facultative belonging to the family Enterobacteriaceae, which is considered as opportunistic pathogens, causing many diseases such as meningitis, necrotizing enterocolitis, neonatal bacteremia and neonathal sepsis and is usually caused by consuming milk powder contaminated with the organism. Much of infections caused by and associated with the milk powder in hospitals occur in the NICU (neonatal intensive care unit).

**Method:** In this study, after coordination with the parents of infants suspected of having Enterobacter Sakazaky who admitted in NICU, Blood samples were collected from 14 infant and after enrichment and primary culture, the final separation of bacteria was done with the help of Mac Cancan, EMB, TSB, ESIA and TSA culture and at the end, investigated by PCR molecular and R and F primer pairs methods. In this molecular study, Bgrx gene was used; who codes the B subunit of the DNA GYRASE (Topo isomerase 2) enzyme and is suitable for rapid detection of Enterobacter species.

**Findings:** Using the above methods, the existence of Sakazaky Enterobacter, ATCC51329 strain was proved in one blood sample.

**Conclusion:** The gold standard for isolation and identification of Enterobacter in blood samples and milk powder is very sensitive and time consuming, and also requires great precision and different biochemical methods. Accordingly, the use of molecular techniques and specific genes such as Bgrx is very effective and conducive to expedite identification, and the results shows the rather good microbiological quality of milk powders consumed by infants which is an indication of compliance with desirable standards.

**Keywords:** Enterobacter Sakazaky, Sepsis, DNA GYRASE -ESIA-Bgrx

Neuroprotective Strategies in Short- and Long-term of Developing of Neonatal Brain

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Neuroprotection is not a new entity especially in scientific studies, but with novelty in the environment of the neonatal intensive care unit (NICU) according to the unique potential mechanisms of brain injury and repair of neonatal brain. The term of neuroprotection is generally used to emphasize neuroprotection strategies pointed the brain development of newborn infants. Newborn infants can receive various medical and painful interventions every day during NICUs admission. However, their response to these events along with the stressful environmental issues can affect both the short-term and long-term outcomes the newly born infants especially the preterm infants with vulnerable and premature nervous system. The responses of admitted newborns to these events might be alleviated the negative effects along with the long term consequences on development and future of these infants. The changes in response to external signals such as experiences in the environment can be both positive and negative consequences. Nowadays, many developmental supportive care as neuroprotective activities can be found in many NICUs. In recent years, several studies have investigated the neonatal cortical responses to noxious stimuli by using nearinfrared spectroscopy (NIRS) and electroencephalography (EEG). Both of these techniques can provide a noninvasive opening into the brain, understanding the developing newborn infant nervous system, examine the responses to noxious stimuli, and further changes in NICU cares. By spreading these new information about the development of brain and nervous system, the health care providers could be able to support, implement, and enhancing the appropriate development ways that could lead to optimal outcomes in perinatal and neonatal period. So, neuroprotective strategies are one of the important issues that needs further more attention in the clinical setting and integrated care of newborn infants.

**Keywords:** Brain development, NICU, Neuroprotection, Neuroprotective strategies, Newborn infant
Effects of baby massage on neonatal jaundice in healthy Iranian infants: A pilot study

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**background**: To evaluate the effects of baby massage on transcutaneous bilirubin levels and stool frequency of healthy term newborns.

**Methods**: This Pilot study was conducted on 50 healthy newborns in Valiasr Hospital of IKHC. The infants were randomly allocated to two treatment (massage) and control group. The massage group received massage therapy (according to Touch Therapy) for four days from the first day postnatal while the control group received routine care. Main variable studied were transcutaneous bilirubin level (TCB) and stool frequency which were compared in two groups.

**Findings**: There were 50 newborns in the study 25 in each group (50%). There was a significant difference in the TCB levels between two groups (p = 0.000) with those in the massage group having lower bilirubin levels. As for the stool frequency there was a significant difference in two groups on the first day showing more defecation in the control group (p = 0.042) which on the consequent days was not significant and the frequencies were almost similar. 

**Conclusion**: Massage group had a lower transcutaneous bilirubin levels compared to the control group, thus, these pilot results indicate that massaging the newborns can be accompanied by a lower bilirubin level in the healthy term newborn. Keywords Neonatal jaundice; Baby massage; Transcutaneous bilirubin
Scorpion sting is one of the health problems in many parts of the world including the tropical areas, such as Iran. Several low molecular weight proteins are present in the venom of scorpions including neurotoxins, nucleotides, aminoacids, oligopeptides, cardiotoxins, nephrotoxin, hemolytic toxins, phosphodiesterase, phospholipase A, hyaluroinidase, acetylcholine esterase, glycosaminoglycans, histamine, serotonin, 5-hydroxyptamine and proteins that inhibit protease, angiotnsinase and succinate dehydrogenase, ribonuclease and 5-nucleotidase. These toxins are capable to produce a potent synergic effects in victim. Scorpion neurotoxins and cytotoxins are the main causes of symptoms and complications in scorpion stung victims and identifying of the type of scorpion, allows one to be able to predict the type of venom. Gadeem (HemiscorpiusLepturus) venom creates the most cytotoxic effects and can cause skin necrosis, hemolysis, rhabdomyolysis and acute kidney injury. But the venom in other scorpions is mostly contain neurotoxins and depending on its amount and ingredients can cause severe pain, parasympathetic and sympathetic system stimulation symptoms, pulmonary edema and acute respiratory distress syndrome. Treatment with enough amounts of intravenous scorpion antivenom, serum therapy and adequate diuresis with fresh frozen plasma (FFP) in hemolytic uremic syndrome (HUS) and disseminated intravascular coagulation (DIC) in Gadeem scorpion stung cases and appropriate treatment of neurological complications with prazosin have improved prognosis and decreased mortality in recent years.

**Keywords:** Scorpion Sting, Gadeem Scorpion, Step By Step Treatment, Renal Failure

**The epidemiology and associated factors with nocturnal enuresis among school children in Guilan province (Rasht): a cross sectional study**

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**Objective:** Enuresis is one of the most common diseases of children that has several psychosocial effects on children and their parents. According to the results of previous studies, different estimates of enuresis prevalence and its related factors have been reported. Combining the results of these studies is valuable. This study aims to estimate the prevalence of enuresis and its related factors among personal and family factors in the city of Rasht.

**Method:** This cross-sectional study was conducted among elementary school students in Rasht. Samples were randomly selected among Rasht girls and boy's school. Questionnaires were selected for each student and then completed by a Health expert with invitation of a parent. Questionnaires were analyzed by SPSS software after collection and P<0.05 was considered significant and data was analyzed by K2 test.

**Result:** In this study, 1125 questionnaires were completed that 568 (50.5%) were boys and 557 (49.5%) were girls. The study showed that the prevalence of enuresis was 7.5% (n = 43) in boys and 4.1% (n = 23) in girls and overall is 5.9% (n = 66). The gender difference was statistically significant. There were statistically significant relation in two groups about personal factors such as history of urinary tract infections, snoring, computer games and eating fast food and family factor such as family history of enuresis and the place of residence.

**Conclusion:** enuresis prevalence has less rate in Rasht in comparison with some of province in the country and also other countries. Results achieved from enuresis and familial and personal factors in this research, is comparable with other countries' epidemiological studies.

**Keywords:** Nocturia, Enuresis, Prevalence, Primary School-Children

**Twelve behavioral advices in treatment of nocturnal enuresis**

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Nocturnal enuresis (NE) is a common problem in childhood and early adolescence. It is characterized by urine control loss during sleeping in children over the age at which bladder control is expected to be achieved. Although this condition has a high rate of spontaneous remission, bed-wetting has significant negative impacts on a child’s self-image and causes many limitations and psychosocial effects on both children and their families. It seems that delay in development of cerebro-vesical axis is the main reason for the lack of waking the baby when the bladder is full. Nocturnal enuresis treatments consist of some drugs and several behavior modification techniques. Although non-pharmacologic behavior modification therapies are substantial and more permanent, most physicians and parents prefer to use...
Pharmacologic treatments. These are several techniques that can advise to the patients and their parents to accelerate the development of cerebro-vesical axis during drug therapy in NE.

1. Patients and families can rest assured that nocturnal enuresis will improve and it should not cause discomfort in the patients and their families.

2. Two hours before sleeping, eating dinner, fruit and all of drinks should be avoided. The time between dinner and routine bed time should be more than 2 hours, at this time the liquid of food will be excreted from the body.

3. Heavy and salty foods or sweets should be avoided at night and in the evening, because these foods tend to increase drinking water and fluids.

4. The patient should go to the toilet before sleeping.

5. The sleeping place should not be cold.

6. The patient should sleep early at night, because a deep sleep prevents waking up to go to the toilet at midnight.

Practices for awakening:

7. Before sleeping they have to set alarm clock for 4 to 6 hours after sleeping to awake the patient. However, gradual adjustment of medications is needed to delay filling of bladder earlier than 4 hours.

8. The family should explain to their child every night to waking up by the sound and they should not turn off the alarm clock until the patient waked up and encourage him or her to waking up by calling.

9. If nocturnal enuresis occurs, the patient should be get up early in the next night. It is necessary to continue waking up training seriously as long as the patient conditioned to the alarm and wake up spontaneously. It is difficult at first, but gradually will become easier and the patient will be awakened only by the alarm sound and ultimately like a normal person will awaken even without the bells.

11. The family should be know that there are several pharmacetical treatments for this disease and they have good effects in all patients and it is necessary to continue taking the drug without any stress, but if the patient is able to get up for urination, taking the drugs will stop.

12. Drug side effects will be controlled by tests carried out at certain intervals and in this period the practicing should be continued.

Keywords: Behavioral advices, Nocturnal enuresis

Hypercalciuria in children with recurrent UTI

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Introduction: Urinary tract infection (UTI) is common in children. Recurrent UTI cases complication such as renal sacra, proteinuria and hypertention. Recent studies have reported that hypercalciuria may be considered a risk factor for recurrent UTI.

Methods: In this study 110 children 2months to 13 years old with recurrent UTI evaluated for hypercalciuria, urinary tract anomalies and voiding Dysfunction, constipation, reflux, scar. Hypercalciuria was defined as a calcium/creatinine ratio more than 0.21 in at least two morning spot urine test. Recurrent UTI was defined as at least 3 episodes of cystitis or 2 episodes of pyelonephritis.

Results: There was 110 children 103 female (93.6) and 7 male (6.4). Mean age was 4.35 ± 2.05. Frequecy or recurrent UTI was 2.7 times. The most common symptom was dysuria (73%) and frequency (60%), abdominal pain (44%). Hematuria was seen in 60% of patients with recurrent UTI and hypercalciuria. Mean c/a ratio was 0.87 ± 0.32 that detected in 37.7% of children with recurrent UTI. Familial history of hypercalciuria was detected in 13. 6% of patients. Microlithiasis was detected in 83.3% of children with recurrent UTI and hypercalciuria. The patients with hypercalciuria received hydrochloroiazid for 3-18 months (mean 8.3 ± 3.1 months).

Keywords: Hypercalciuria; recurrent Urinary Tract Infections, children

Diagnostic evaluation of the level of serum procalcitonin in comparison with other diagnostic methods of reflux in children younger than five years old with a urinary tract infection

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Background: Children with vesicoureteral reflux are posed to the danger of recurrent pyelonephritis, kidney scar and renal failure. Nowadays, the evaluation of vesicoureteral reflux is carried out using different imaging methods such as sonography, voiding cystourethrogram and direct radionuclide cystography that are accompanied with different limitations. Pediatricians are looking for other evaluation methods that are feasible, easy to implement and carries the least amount of danger to the patient. Therefore, in this study we aimed to investigate the evaluation of vesicoureteral reflux by using the level of serum procalcitonin as a nonradiological method.

Methods: This case-control study was conducted from 2013 to 2014. The samples were consisted of 110 children younger than five years old that were divided into two groups: (i) the case group with 72 children diagnosed with urinary tract infection using urinary culture test, and (ii) the control group with 38 healthy children. The data was collected using a researcher-made questionnaire. The collected data was analyzed using descriptive and inferential statistics via the SPSS software.

Results: Of the samples, 78 children (75.7%) were female. The median age of the samples was 21 months with an
interquartile range between 10 and 36 months. Although, 69.1% of them had no vesicoureteral reflux, 20% and 1.09% of the samples suffered from severe unilateral vesicoureteral reflux and severe bilateral vesicoureteral reflux, respectively. According to our findings, 61.8% of the samples were positive with regard to the level of serum procalcitonin. One-half of those samples (38 people) who was diagnosed to be healthy using voiding cystourethrogram had a normal level of serum procalcitonin. However, 30 people (88.2%) of the samples diagnosed to be healthy using voiding cystourethrogram had a positive result of level of serum procalcitonin. The positive and negative predictive values of the level of serum procalcitonin were 44% and 90%, respectively. In this respect, 50% of the samples diagnosed by using level of serum procalcitonin were false positive and 11.8% were false negative. It meant that sensitivity and specificity of the level of serum procalcitonin were 88.2% and 50%, respectively. The kappa score for the level of serum procalcitonin was 0.3 (P < 0.0001). Accordingly, the sensitivity of the level of serum procalcitonin for the female samples was 85% and for male samples were 100%. Additionally, the specificity of the level of serum procalcitonin for the female and male samples was 38% and 68.4%, respectively. The positive predictive value of the level of serum procalcitonin for the female and male samples was 43% and for the male ones was 50%.

Conclusion: There was no a statistically significant relationship between vesicoureteral reflux and the level of serum procalcitonin.

Keywords: Children, Urinary Tract Infection, Procalcitonin

Nephrotic Syndrome and Renovascular Hypertension

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Nephrotic Syndrome and Renovascular Hypertension

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Proteinuria in renal artery occlusion is positively related to active renin concentration, which reflects plasma angiotensin II concentration. Therapy aimed at lowering angiotensin II levels, decreased proteinuria in nephrotic patients. This is the presentation of a 4 months male infant who admitted for seizure, irritability and red skin eruptions. BP was 200/120 at admission. There was no other positive findings in physical examination, past history and family history. Bilateral leg Edema developed during admission and increased gradually. Laboratory exams for HIV (1, 2), anti GBM, ANA, anti dsDNA, ANCA (C, P), RF, anti PL and anti CL were negative. Renal function tests, C3, C4, CH50, protein C, S, and ATIII were normal. T4 level decreased with increased TSH (8.2- 0.6-6.3), in favour of primary hypothyroidism. Serum Na, K, protein, and albumin decreased. Urinalysis showed nephrotic range proteinuria and hematuria. Renal ultrasound showed small left kidney with decreased parenchymal thickness, and increased parenchymal echogenicity. Renal artery doppler ultrasound showed normal right kidney with increased renal resistive index and decreased flow in the upper pole of left kidney with abnormal wave (Damped). Renal vein had normal blood flow without thrombosis. DMSA scan showed small left kidney with decreased cortical function (29.5%), and right kidney larger than normal with compensational hypertrophy. Brain CTscan and MRI showed ischemia and abnormal signal in left parietal lobe, in favour of acute infarction. Echocardiography showed moderate left ventricular hypertrophy and mild pericardial effusion, without coronary involvement. A mass of 1.4x0.8 size was detected in left ventricle attached to the cardiac septum, in favour of hamartoma, rhabdomyoma or cardiac clot. Kidney MRA showed bilateral renal artery stenosis, with beading pattern, in favour of fibromuscular dysplasia. Renal angiography showed normal right kidney and small hypoplastic left kidney artery with impossible curative angioplasty. Proteinuria, edema and hypertension decreased gradually with antihypertensive other than converting enzyme inhibitors or angiotensin receptor blockers. Cardiac clot disappeared with antithrombotic treatment. In spite of increased incidence of nephrotic proteinuria in patients with renal artery stenosis, nephrotic syndrome rarely occur in these patients, and should be treated with antihypertensive treatments instead of traditional idiopathic nephrotic syndrome drugs.

Keywords: hypertension, nephrotic syndrome, renal artery stenosis.

BUN to creatinine ratio in AKI limitations and benefits

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Introduction: The blood urea nitrogen (BUN) /creatinine ratio (BCR) is one of the common laboratory tests used to distinguish pre renal azotemia (PRA) and acute tubular necrosis (ATN), with a typical threshold of 20 being suggested as a useful cut-off point But there is little evidence showing that BCR can distinguish between these two conditions and/or is clinically useful. In this study we try to find the importance of BCR in prerenal azotemia in critical ill children.

Methods: 40 cases admitted to PICU evaluated about renal indices in first and 5th day of hospitalization: urinalysis showed proteinuria in patients with renal artery stenosis, nephrotic syndrome rarely occur in these patients, and. 20% and AKI was classified as RIFLE classification and urine specific gravity over1020 considered as dehydration and cases with both drop GFR and dehydration considered as PRA.
Case presentation

Nephrotic Syndrome and Acute Renal Failure as the First Presentations of Kidney Tumor

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Introduction: Nephrotic syndrome (NS) defined as massive proteinuria, hypoalbuminemia, edema and hypercholesterolemia is caused by renal diseases that increase the permeability across the glomerular filtration barrier. NS is mostly primary or idiopathic in children. However, it may be secondary to systemic diseases as well. Malignancies are placed among the rare causes of NS in children. Hereby, we are introducing an 11-month-old infant who was diagnosed as nephrotic syndrome secondary to a urinary system tumor.

Case presentation: An 11 month-old infant presented to the Emergency Department with severe oliguria over the past 24 hours. On physical examination her blood pressure was 120/70 mmHg, and she had periorbital edema. Primary lab data was consistent with acute renal failure in the context of nephrotic syndrome. Sonography of the urinary system showed normal sized kidneys and mildly increased echogenicity in renal cortices. Staying unresponsive to the initial management, the patient underwent peritoneal dialysis. As soon as the patients condition became stable, renal biopsy was performed to define the underlying cause. Renal biopsies from both kidneys were diagnostic for bilateral Wilms tumor. Consequently, bilateral nephrectomy, chemotherapy and renal transplantation were the next interventions.

Conclusion: Wilms tumor is the most common renal malignancy in children and the fourth most common childhood cancer. Most children with Wilms tumor present with an abdominal mass or swelling, without other signs or symptoms. Other symptoms can include abdominal pain, hematuria, fever, and hypertension. However, to our knowledge, acute renal failure and nephrotic syndrome as the first manifestations of Wilms tumor have not been reported in the literature so far. Therefore, acute renal failure in the context of nephrotic syndrome should be taken into special consideration since they might be the first presentations of an underlying urinary system malignancy.

Keywords: Nephrotic Syndrome, Acute Renal Failure, Wilms Tumor

A Rare case of Aphallia

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Aphallia (total absence of penis) is an extremely rare abnormality that can be part of the urorectal septum malformation sequence. We are reporting a 40-day-old boy who was referred to our nephrology clinic due to the absence of the penis and urinating through the rectum. He was born to a 17-year-old mother and a 24-year-old father, and was delivered term via normal vaginal delivery. The pregnancy was uncomplicated with no maternal toxin or medication exposure. Both parents were healthy and there was no family history of congenital abnormality. The parents were also unrelated. Physical examination revealed agenesis of the penis, a normal scrotum, and bilateral normally positioned testes. Moreover, the heart, lungs, abdomen, head and neck, and spinal column were all normal on examination. The karyotype was 46XY and the gender was male. Initial ultrasonography one week after birth revealed moderate bilateral hydronephrosis but the last ultrasonography 45 days later revealed only mild fullness of both kidneys.

Keywords: Aphallia; Gender; Penile Agenesis
Labial fusion diagnosis in prepubertal girls and its association with asymptomatic bacteriuria

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Background: Labial fusion, which is not a rare condition in girls can be terminated to urine retention above the thin membranous layer of the labia minor and often it considered as being normal post voiding dripping. It can caused recurrent ranges of UTI s from an asymptomatic to serious pyelonephritis.

Methods: In this study we interviewed 140 school girls between 7-12 years old, and we asked for symptoms such as vaginal irritation, dysuria, UTI history, discharge, post voiding dripping. Also, we took a urine sample for analysis and culture and then we checked up them for labial adhesion.

Results: Of 140 girls, 11 (7.8%) had labial adhesion. 8 (72%) of these girls didn’t have any complaint, but in physical exam we found vaginal discharge and unpleasant vaginal odor. 2 girls (18%) had vaginal irritation and only one (9%) of them had dysuria. All of their mothers (100%) give us post voiding dripping history, but none of them were considered it abnormal. Only 13 children (9%) had a positive past history for UTI and all of them were cystitis and 4 of them had frequent cystitis. The important point is 9 of them (70%) had labial adhesion and all 4 frequent cystitis had labial adhesion. We found 46 (32%) asymptomatic bacteriuria and E. coli was most frequently isolated in 30 samples (65%) followed by Staphylococcus in 8 samples (17%). In these patients we found 9 girls (19%) with labial adhesion. Conclusion: Based on these findings it becomes clear that labial adhesion is not a rare condition in girls and we have to think about it especially in frequent cystitis, even without complaint. It is important to treatment these cases before causing problem.

Keywords: Labial adhesion, Asymptomatic Bacteriuria

The Study of Relative Frequency Renal Scar in Children with Urinary Infection in Yazd Hospital In 2014

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Introduction: Age of study sample was range from 2 months to 12 years. 350 persons (87.5%) of the samples was considering the importance of diagnosis and treatment of urinary tract infection that is known as a risk factor for irreversibly damage of kidney tissue (scar), early diagnosis and treatment is essential to prevent complications. This study also with the same aim focuses on the presence of permanent kidneys scars in children with urinary tract infections.

Methods: In this Descriptive study, 400 children with urinary tract infection that were admitted in hospitals of yazd in 1393 were studied. The information including age, sex, frequency of disease, duration, family history and the presence or absence of renal scarring was inserted at researcher made questionnaire and the data were analyzed using SPSS Ver17 software.

Result: 11 cases of children of 0.17 to 2.99 years age group had renal scarring and in older than 3 years children, no renal scarring was observed. 6 girl children (1.71%) and 5 cases of boy children (10%) had renal scarring. 8 case (3.2%) of children who once and 3 cases (2.4%) of children who two times were suffering to urinary tract infections had renal scarring and 23 persons who were three and four times suffering to urinary tract infection did not have renal scarring. In 4 cases (19%) with a family history, and 7 (1.8%) of children who had no family history, renal scarring was observed.

Conclusion: Since scar formation is one of the known complications of urinary tract infection, prevention and early detection is essential in children with urinary tract infection. To prevent renal scarring in patients with, to identify related factors such as age, sex, frequency of disease and family history is necessary.

Keywords: Urinary Tract Infection, Renal Scarring, Children

Neurology & Psychiatry

Bilateral Ptosis as the First Presentation of Guillain-Barre Syndrome

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Guillain-Barre syndrome (GBS) is the most common cause of acute weakness in children. It has multiple variant forms with different presentations. A rare initial sign is ptosis. In this study, we present a 10-year-old girl with bilateral ptosis without ophthalmoplegia followed by a weakness in extremities with a favourable response to intravenous immunoglobulin. Due to the patient's™ initial eyelid levators, myasthenia gravis was ruled out by a Tension test and electrophysiological studies. Our report highlights the possibility of GBS as a cause of isolated ptosis, especially in cases without ophthalmoplegia.

Keywords: Guillain-Barre Syndrome; Children; Ptosis; Weakness

Bayley Scales of Infant and toddlers Development Screening test (Concurrent Validity)

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Background: The aim of this study was to determine concurrent validity of the Bayley Scales of Infant and toddlers Development Screening test.

Methods: In order to determine concurrent validity, a representative sample of 404, 1-42-months-old children recruited by consecutive sampling from health-care centers in five main geographical areas in Tehran. The Bayley Scales of Infant and toddlers Development III (Diagnostic test) was used as gold standard that its construct validity was confirmed by factor analysis.

Findings: Correlation between scores of cognitive, receptive and expressive communication, fine and gross motor subtests of Bayley Scales of Infant and toddlers Development Screening and Diagnostic Bayley Scales of Infant and toddlers Development III were 0.99, 0.955 and 0.967, 0.938 and 0.97 respectively.

Keywords: development, screening, validation study, Child

Screening, Diagnosis and Intervention Program in Autism spectrum disorder

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ASD is one of the neuropsychological disorders that is common on deficit of relation, socialization and repeat behaviors. Although ASD is a life time disorder, but a person with ASD can live more normally with Continuous training. Research has shown that early diagnosis of these disorders in treatment and recovery of children with ASD is very effective. Thus, screening, diagnosis and intervention is a program in office of daily centers and medical rehabilitation of State welfare Organization. By implementing this program, in addition to extensive information and awareness in the community about autism spectrum disorders, all of the 2-5 years old children referred to clinics (autism spectrum disorders training and rehabilitation centers), screened and will be examined by parents and experts the probability of having autism spectrum disorders symptoms. So, if the diagnosis is definite, training and rehabilitation centers for children with autism spectrum disorders will be referred to the intervention by base center. Although the family as an important factor in increasing the level of intervention in these disorders, this program is considered as a family base program. So, the training package name ROZANEH, has been prepared, till family base intervention goes along as well as center base intervention. The package includes 14 booklets and toys are targeted.

Keywords: ASD, intervention, screening, diagnosis, intervention (family base, center base)

Incidence of acute neurologic complications after heart surgery in children with congenital heart disease

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Introduction: In pediatric cardiac surgery, according to the nature of heart disease and require the use of cardiopulmonary bypass, there are significant transient or permanent neurologic complications. The aim of this study was to evaluate the incidence of acute neurologic complications in the postoperative cardiac surgery period in children with congenital heart disease that were undergoing cardiac surgery within a year.

Methods: In a cross-sectional study from July 2014 and July 2015, all patients with cardiovascular disease...
(including CHD and other cardiovascular diseases) who had been operated in the Medical Center’s pediatric heart surgery (open or closed) were evaluated. Those who had died during hospital stay or surgery and those with incomplete information in medical records and those who had been operated not CHD were excluded from study. Of the 435 patients surveyed, 364 patients were enrolled in study and were recorded their acute neurologic complications information and findings related in brain CT scan.

**Results:** The range of age of the 364 patients enrolled in the study was 5 days to 15 years old, of whom 64 (17.6%) patients were under 2 months, 131 (36%) patients were between 2 months to 1 year and 169 (46.6%) patients were over 1 year of age. 33 (9.06%) patients were with acute neurological complications after heart surgery in which included in the incidence of seizures, movement disorders, loss of consciousness, visual disturbances, headache, hydrocephalus.

**Conclusions:** Due to the high incidence of neurological complications in the patients in our study, it seems necessary to improve the implementation of the protocols cardiopulmonary bypass, and more attentions should be used in the use of neural monitoring for ischemia and bleeding impendingor development. In recent years, many studies have been done that show multimodal cerebral monitoring can reduce the incidence of neurological complications after cardiac surgery. Also using arterial filter during surgery is away to prevent the passage of air embolism.

**Keywords:** Acute neurologic effects, pediatric cardiac surgery, congenital heart disease

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**EyeSeeCam Video-Oculography (VOG): Following of Iranian NPC patients**

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**Introduction:** EyeSeeCam VOG with its lightweight goggles and the integrated inertial measurement unit (IMU) provides a measurement device for quantifying eye movements. With it, a doctor can objectively and reliably assess ocular motor function in a few minutes. EyeSeeCam VOG is a time-saving and low-cost tool that can be readily applied in all clinical setups such as in outpatient units or in emergency rooms. EyeSeeCam VOG systems provide information to assist in the oculographic evaluation and documentation of eye movement physiology and disorders.

**Objectives:** Recording of vertical and horizontal saccadic and pursuit eye movements by EyeSeeCam VOG in confirmed cases of NP-C that were more than 5 years of age, available and cooperative, that were diagnosed in Childrens Medical center (CMC) or referred by other physicians. Patients more than 5 years that were available and cooperative included in the project.

**Methods:** Confirmed cases of NP-C by Filipin staining or NPC-509 Biomarker (both of theme in some cases) and proved mutation analysis of NPC1 or NPC2 gene, irrespective of treatment with, Zavesca® (Miglustat) included in the project. Uncooperative patients with attentional deficits was our main concern and limitations. Since only an accurate calibration ensures high data quality, cooperation of the
patients was an important step of the exam. After the calibration of an eye tracker or a VOG system, vertical and horizontal saccades and then smooth pursuit eye movements were examined.

**Results:** Fourteen cases of confirmed NP-C patients were registered in Iranian neurometabolic registry site (INMR) of CMC. Seven patients completed the EyeSeeCam VOG exam with acceptable calibration and analysis that were selected from our registered patients or referred from other physicians. The patients were between the age of 5. 5 -30 years. All of the patients were under treatment of Zavesca with variable durations. In four cases absent or severe slowing of vertical saccades were seen, in one case absence of vertical saccades and slowing of horizontal saccades was seen, and in two cases both of vertical and horizontal saccades were near normal. Treatment with Zavesca® can stabilize neurological disease in children, juveniles and adults with NP-C over 12 months and this support the normal findings of 2 patients that were under treatment of more than 1 year. The EyeSeeCam VOG will be a good exam for diagnosis and followup of NP-C patients.

**Keywords:** NPC, VOG. Vertical supranuclear gaze palsy, Miglustat

### Epilepsy in Neurometabolic diseases

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Seizures are a common symptom in a great numbers of metabolic disorders that occurring mainly in infancy and childhood period. In these disorders seizures may occur only until adequate treatment is initiated or as a consequence of acute metabolic decompensation (the case in hyperammonaemia or hypoglycaemia). Seizures can be the main manifestation of the disease and can lead to antiepileptic drug-resistant epilepsy or Status epilepticus. Epilepsy in inborn errors of metabolism can be classified in different ways - One useful way uses the possible pathogenetic mechanisms for classification: Seizures can be due to lack of energy, intoxication, impaired neuronal function in storage disorders, disturbances of neurotransmitter systems with excess of excitation or lack of inhibition, or associated malformations of the brain - Other approaches are according to take the clinical presentation, with emphasis on seizure semiology, epilepsy syndrome and associated EEG findings - Sometimes we approach to the age of manifestation Classification of epilepsies of metabolic origin according to the type of presenting epilepsy infantile spasms: Biotinidase deficiency, Menkes disease, mitochondrial disorders, organic acidurias, amino acidopathies Epilepsy with myoclonic seizures: Non-ketotichyperglycaemia, mitochondrial disorders, GLUT1-deficiency, storage disorders Progressive myoclonic epilepsies: Lafora disease, MERRF, MELAS, Unverricht-Lundborg disease, sialidosis Epilepsy with generalised tonic-clonic seizures: GLUT1-deficiency, NCL2, NCL3, other storage disorders, mitochondrial disorders Epilepsy with myoclonic-astatic seizures: GLUT1-deficiency, NCL2 Epilepsy with (multi-) focal seizures: NCL3, GLUT1-deficiency and others Epilepsias partialis continua: Alpers disease, other mitochondrial disorders Classification of epilepsies of metabolic origin according to age at onset Neonatal period: Hypoglycaemia, pyridoxine-dependency, nonketotichyperglycaemia, organic acidurias, urea cycle defects, neonatal adrenoleukodystrophy, Zellweger syndrome, folinic acid-responsive seizures, holocarboxylase synthase deficiency, molybdenum cofactor deficiency, sulphite oxidase deficiency Infancy : Hypoglycaemia, GLUT1-deficiency, creatine deficiency, biotinidase deficiency, amino acidopathies, organic acidurias, congenital disorders of glycosylation, pyridoxine dependency, infantile form of neuronal ceroidlipofuscinosis (NCL1) Toddlers: Late infantile form of neuronal ceroidlipofuscinosis (NCL2), mitochondrial disorders including Alpersâ€™disease, lysosomal storage disorders School age: Mitochondrial disorders, juvenile form of neuronal ceroidlipofuscinosis (NCL3), progressive myoclonus epilepsy Conclusion Epilepsies In children with neurometabolic diseases, depends on the age group. Neonates should all undergo a therapeutic trial with pyridoxine and pyridoxal phosphate, even if seizures are thought to be due to sepsis or perinatal asphyxia. If seizures are resistant to conventional antiepileptic drugs, folinic acid should be tried as well. In infants, early myoclonic encephalopathy (EME) is often thought to be due to an inborn error of metabolism, although the precise defect can often not be pinpointed.

**Keywords:** Epilepsy, Neurometabolic Diseases, Children

### Assessment of Causative Factors of Febrile Seizure Related to a Group of Children in Iran

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Febrile seizure is a common disorder between children with age of 6 month to 6 years and its recurrence is an emotional trauma for parents. Causative factors of febrile seizure have not been completely identified. In this study we determined the correlation between causative factors and probability of febrile seizure occurrence. This study was performed on 344 children factors related to febrile seizure were recorded and the distribution of febrile seizure occurrence was identified.
with Pearson chi square test. Our results demonstrated that number of febrile seizures increased in evening and autumn. Also, there was a correlation between body temperature and number of febrile seizure. Finally, the history of family with febrile seizure was identified as a suitable causative and prognostic factor.

**Keywords:** Febrile seizure; Circadian rhythm; Seasonal variations; Family history; Body temperature

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**Stress in children**

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Children just like as adults may have stress. The origin of their stress may be related to intrinsic or extrinsic factors. In a little child, separation from parents may be cause of stress and in school age children academic, social and parental pressures may be stressful. Being overscheduled, events of their own life such as illness, death of a related person, parental conflicts or divorce, social or community events such as war, disasters, problems related to school such as succeeding in school, making friends, passing exams, combating peer pressures, are other causes of stress in children. In children, signs and symptoms of stress aren’t always easy to recognize. They may be shown as behavioral or somatic symptoms. In little kids, mood changes, sleep or feeding problems, acting out, bed wetting, thumb sucking, hair twirling are some of the symptoms of stress. Older children may begin to lie, having trouble in concentrating or doing their assignments, having nightmare, being overactive to minor daily problems, having dramatic changes in academic performance or showing psychosomatic symptoms such as abdominal pain or headache, tantrum and even depression. Ways to reducing stress: some degree of stress is normal in daily living. Parents can help their children to cope with stress by providing proper rest and nutrition and spending time with them. Sometimes children need to talk, but if they do not want, parents should not try to make them to talk. In this situation giving reassurance and supporting them is enough. These ways can help children cope with stress: anticipating stressful situation and preparing kids by telling them age appropriate information, telling their own past stressful experiments, remembering them that having some level of stress is normal for everybody. Parents duties: talking about the childrens feeling and showing attention to their feeling, asking them to tell what is the problem and listening with a good manner without any judgment, blame or urging are suitable. They would encourage them to tell the whole story by themselves by asking few short questions. Then parents can find proper words to describe their child’s feeling. It helps children to feel that they are understood and are important for their parents. Encouraging children to find some solution by themselves is good for building self-confidence. Giving them time and just supporting children by spending time, playing or watching TV together can help them feel better. Finally, if the problem or any behavioral changes persist or lead to anxiety or significant school or home problems, the parents should consult a professional.

**Keywords:** children, Stress

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**Efficacy of potassium bromide (as an out of date drug) in epilepsiapartialis continua**

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Epilepsiapartialis continua (EPC) is a term for focal motor clonic and/or myoclonic seizures which last for days or months or longer. Previous to introduction of Phenobarbital in 1912, bromide was the main anticonvulsant medication. It was considered to be effective on tonic-clonic seizure but its effectiveness on focal seizures had not been tested precisely. Our patient had epilepsiapartialis continua (EPC), which had been refractory to the conventional anti-epileptic drugs. The seizure started since early infancy. In our patient, the brain anomaly (pachygyria) is considered to be the main etiology for EPC. Not having proper response to the previous medication, the neurologist consultant decided to try an old antiepileptic drug, potassium bromide, which there have been reports of its effectiveness. Fortunately the seizures frequency responded significantly to potassium bromide.

**Keywords:** Refractory seizure, pachygyria, Epilepsiapartialis continua, Potassium Bromide

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**The relationship between quality of life of mothers and sleep quality of children with cerebral palsy**

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Sleep habits affect the sleep quality and quantity in childhood. Improper sleep habits for children will affect the quality of life of mother as a primary caregiver for children with cerebral palsy and endangers her health. With regard to this issue, its
impact on quality of life of their mothers was studied to determine the sleep habits in children with cerebral palsy aged 1 to 7 years old referring to Alvand Clinic in Hamadan. A cross-sectional study was performed on 19 children (11 girls and 8 boys). Sampling was done by census and data was collected through self-reporting questionnaire (children sleep habits) via interviewing the mothers and the World Health Organization Quality of Life Questionnaire Brief Form (WHOQOL-BREF). To analyze the data, Pearson correlation test and ANOVA were used. Results Insomnia with a score (13. 67± 2.77) is the most common sleeping habit and the tendency of children to morning awakening by parents (93 percent) is the most common sleep behavior among the study population. Sleep habits of studied children has a significant relationship with quality of life of mothers P).

**Keywords:** mothers, quality of life, sleep habits, children with cerebral palsy

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**Brain Death in Children**

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The widespread use of mechanical ventilators that prevent respiratory arrest has transformed the course of terminal neurologic disorders. Vital functions can now be maintained artificially after the brain has ceased to function. Brain death is defined as the irreversible loss of all functions of the brain, including the brainstem. The three essential findings in brain death are coma, absence of brainstem reflexes, and apnea. The determination of brain death requires the identification of the proximate cause and irreversibility of coma. Severe head injury, hypertensive intracerebral hemorrhage, aneurysmal subarachnoid hemorrhage, hypoxic-ischemic brain insults and fulminant hepatic failure are potential causes of irreversible loss of brain function. The physician should assess the extent and potential reversibility of any damage, and also rule out confounding factors such as drug intoxication, neuromuscular blockade, hypothermia, or other metabolic abnormalities that cause coma but are potentially reversible. The process for brain death certification includes: 1. Identification of history or physical examination findings that provide a clear etiology of brain dysfunction. 2. Exclusion of any condition that might confound the subsequent examination of cortical or brain stem function. 3. Performance of a complete neurological examination which shows: absence of spontaneous movement, decerebrate or decorticate posturing, seizures, shivering, response to verbal stimuli, and response to noxious stimuli, absent pupillary reflex to direct and consensual light, absent corneal, oculocephalic, cough and gag reflexes, absent oculovestibular reflex, failure of the heart rate to increase by more than 5 beats per minute after 1- 2 mg. of atropine intravenously, absent respiratory efforts in the presence of hypercarbia. Generally, the brain death determination requires two clinical assessments of brain function, separated by a period of hours. The apnea test is typically performed after the second evaluation of brainstem reflexes. These guidelines apply to patients one year of age or older. After the first clinical exam, the patient should be observed for a defined period of time for clinical manifestations that are inconsistent with the diagnosis of brain death. The recommended observation period depends on the age of the patient and the laboratory tests utilized. Most experts agree that a 6 hour observation period is sufficient and reasonable in adults and children over the age of 1 year. Reliable criteria have not been established for the determination of brain death in children less than 7 days old. In seven days to two months old, two examinations and electroencephalograms (EEGs) should be separated by at least 48 hours. In two months to one year old, two examinations and EEGs should be separated by at least 24 hours. The diagnosis of brain death is primarily clinical. When the full clinical examination, including both assessments of brain stem reflexes and the apnea test, is conclusively performed, no additional testing is required to determine brain death. In some patients, skull or cervical injuries, cardiovascular instability, or other factors may make it impossible to complete parts of the assessment safely. In such circumstances, a confirmatory test verifying brain death is necessary. Also, in children younger than one year old, they are recommended. The choice of a confirmatory test is dictated in large part by practical considerations, i. e. availability, advantages and disadvantages. Currently available confirmatory tests are angiography (conventional, computerized tomographic, magnetic resonance, and radionuclide), EEG, nuclear brain scanning, somatosensory evoked potentials, transcranial Doppler ultrasonography.

**Keywords:** Brain dead, children,

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**Afebrile benign convulsions associated with mild gastroenteritis in infants and young children: an observational study**

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**Objective:** Afebrile convulsions with mild gastroenteritis (CwG) is characterized by afebrile seizure occurs mainly in young children aged 6 months to 4 years and associated with gastroenteritis without electrolyte imbalance or dehydration. Viral agents play significant role in CwG. Its prognosis is excellent. This study was design to introduce CwG, its clinical
Effect of massage on increasing body weight and improve the neurodevelopment in healthy infants

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The practice of Massage has shown physiologic growth, cognitive and emotional gains for infants. Massage is safe for infants and may have important benefits for their growth and their neurodevelopment.

Objectives: The purpose of this article is to inform health care professionals and parents about use of massage in all infants. Increased knowledge of education on massage for healthcare providers should lead to increased, routine use of this beneficial intervention. The both parents and the family should be involved as direct caregivers in the care of their neonate. This intervention could be an excellent means to ensure parents’ mature involvement in the future of their children. We must provide the parents with necessary information to make an informed decision to massage. Aims: To evaluate the effect of infant massage on weight gain and on the neurodevelopment. Study design: This prospective study was carried out on term infants (No=50) in Khalije Fars Hospital during a 24-month period. All participants were divided into two groups randomly (25 in each group). The group receiving massage intervention was compared to the control group receiving only routine care. The criteria included in this study were: healthy neonate, birth weight >2500g and breast-feeding. The data were collected through monthly observations, interviews and measurements using weight specific scales and Denver II Test at 0 to 24 months of age regarding their neuro development. Each infant in the massage group received daily massage of 15-minute periods by the both parents.

Findings: Weight gain and gross motor in the massage group was significantly higher than that in the control group.

Conclusion: The massage seems to influence state organization and motor system modulation of the newborn infant. As massage enhances weight gain in infants, it is recommended to be considered as a complementary intervention to promote their growth and neurodevelopment. Massage has a positive impact on home environment. Medical and nursing staff may be well advised to provide this kind of care in neonate and infant.

Keywords: Massage neurodevelopment

The quality of life in boys with Duchenne muscular dystrophy

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We conducted a study to evaluate the quality of life in boys with Duchenne muscular dystrophy aged 8-18 years, compared with that in matched healthy controls. A total of 85 boys with Duchenne muscular dystrophy aged 8-18 years and 136 age, sex and living place matched healthy controls were included in this study. Patients and one of their parents separately completed the 27-item Persian version of...
KIDSCREEN questionnaire (child and adolescent version and parent version). From the childrens perspective, the quality of life in patients was found to be lower in two subclasses: physical activities and health (p < 0.001) and friends (p = 0.005). Parental estimation of their sick child's quality of life was significantly lower than childrens own assessment in two subclasses: physical activities and health (p < 0.001) and general mood and feelings (p < 0.001). Our results indicate that boys with Duchenne muscular dystrophy have quite a satisfactory quality of life. A happier and more hopeful life can be promoted through increasing social support and improving the parental knowledge regarding their child's more positive life perspective.

Keywords: Quality of life; Duchenne muscular dystrophy; KIDSCREEN questionnaire

First Unprovoked Seizure: Treat or Not to Treat

Approach to the Management

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The main reason for prescribing antiepileptic drugs (AED) is to prevent further seizure. Thus, such therapy is recommended when there is a reasonable chance seizure will recur. Decision to initiate therapy requires weighing the risk of treatment against the medical and psychosocial risks of further seizures. Treatment does not ensure that no seizure will recur; it merely lowers the probability of recurrence. Some reports suggest that seizure may permanently or temporarly impair cognition, but there is no consensus that treatment with AEDs will alter this impairment. Risk of Treatment Countering the argument for preventing seizure is the fact that AEDs present some risks to patients taking them. The risk of idiosyncratic serious complications is low; fatal complications occur at a rate of 1 per 5000 patient taking Felbamate to perhaps less than 1 per 50,000 to 100,000 with agents such as Phenytoin Sodium, Carbamazepine and Phenobarbital. However, the cognitive and behavioral adverse effects may be serious, particularly in children. Higher plasma levels and polypharmacy increase the cognitive adverse effects. Thus the risk-benefit ratio of the anticonvulsant treatment must be carefully assessed in patients after a single seizure. Risk Factors for Recurrence Studies of persons with a single unprovoked seizure have shown recurrence rates ranging from 16% to 61% depending on duration of follow-up and method of case ascertainment. A reasonable estimate of the general recurrence rate is 40%. Despite conflicting reports in the literature, some conclusion can be drawn about the risk factors for recurrence. These risk factors include: 1- Causes 2- Seizure type 3- EEG findings 4- Family history of seizure 5- A history of febrile seizure 6- TODD paralysis (a transient post-ictal focal deficit) 7- Abnormal neurologic finding Camfield et al found that children with partial seizure, an abnormal EEG and abnormal neurologic finding had a 90% chance of recurrence. Whereas patients with generalized seizure, a normal EEG and normal neurologic finding had only a 30% chance of recurrence. A study from Bronx, NY suggested that: 1. Remote symptomatic cause, 2. Anabnormal EEG, 3. A seizure occurring during sleep, 4. A history of febrile seizure, and 5. The presence of TODD paralysis increase the risk of recurrence in children. The cause of the seizure is an important determinant in risk for seizure recurrence. Patients with a single seizure and a history of neurologic abnormality or injury are nearly twice as likely to have a recurrence as those with an idiopathic first seizure. The EEG is a powerful predictor of recurrence after a single seizure. The chance of relapse is greater in the presence of both generalized spike-and-slow wave pattern and focal abnormalities, especially when seizures are idiopathic or the family history includes epilepsy. It is unclear whether a focal or generalized abnormality is worse. When to Treat? Patients at higher risk of recurrence might be considered for treatment after a single unprovoked seizure. 1. Patients with single seizure and EEG epileptiform abnormalities. 2. Patients with single seizure and associated medical or neurologic condition (CP, MR, etc) that increases the risk of further seizures. 3. Patients with single seizure which is associated with a known cause (tumor, stroke, tuberous sclerosis). When Not to Treat 1. Patients with single seizure and normal EEG 2. Patients with single seizure and unknown cause 3. Simple partial seizure 4. Seizure during sleep 5. Blood, liver or kidney diseases 6. Drug related seizures Patients may need seizure preventive treatment for immediate management of head trauma in which a seizure would complicate management.

Keywords: Children, Seizure, Treatment, unprovoked

Pediatric idiopathic intracranial hypertension

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Idiopathic intracranial hypertension (IIH) is a disease of unknown etiology and is an important consideration in the diagnosis of chronic daily headache. Incidence of IIH is 3.5 to 19 per 100,000, with female predominance. Important finding is papilledema. Neuroimaging is normal and, when left untreated, can result in severe irreversible visual loss. It most commonly occurs in obese children, but can occurs in other
children with obstructive sleep apnea, transverse cerebral venous sinus stenoses, endocrinopathy, pregnancy, drugs, anemia, systemic lupus erythematosus. The diagnostic test for IIH is lumbar puncture and measurement of opening pressure. This procedure also relieves the pressure and usually provides significant decrease in headache symptoms. Administration of acetazolamide can be helpful. The recovery is slow over weeks or months. In obese programs of weight loss is recommended, if the visual symptom is severe ventriculoperitoneal shunt or optic nerve sheath fenestration may be necessary

**Keywords:** Idiopathic Intracranial Hypertension, Venous Sinus Stenosis, Ventriculoperitoneal Shunting, Optic Nerve ventriculoperitoneal Shunt Fenestration

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**Nonepileptic motor movement in the neonate & infancy**

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Nonepileptic motor movement in the neonate & infancy Saeed ANVARI MD, pediatric neurologist, Social Security Organization

**Abstract:** These include tremors, jitteriness, various forms of myoclonus and brainstem release phenomena. They are frequently misdiagnosed as seizures. Our aims are recognition and differentiating of this movement from epileptic seizures. Many of these phenomena are benign and have no bearing on the neonate’s eventual neurodevelopmental outcome. Epileptic seizures in the newborn are frequently associated with significant intracranial pathology and may place the newborn at high risk for poor neurodevelopmental outcome. Tremor & jitteriness Tremor can be defined as an involuntary, rhythmical oscillatory movement of equal amplitude a fixed axis. 1) is the most common abnormal movement in the neonate 2) High frequency: greater than 6 Hz 3) Low amplitude: lower than 3 cm 4) Jitteriness= recurrent tremor 5) Up to two- thirds of healthy newborns will have some fine tremor in the first three days of life 6) one theory: immaturity of spinal inhibitory interneurons causing an excessive muscle stretch reflex 7) another theory: elevated levels of circulating catecholamines account for the tremor 8) may be benign or pathological 9) pathological conditions: hypoglycemia, hypocalemia, sepsis, hypoxic ischemic encephalopathy, intracranial hemorrhage, hypothermia, hyperthyroid state & drug withdrawal 10) fine tremor is usually benign or secondary to hypocalemia 11) coarse tremor is frequently associated with neonatal hyperexcitability syndrome (in mildly asphyxiated neonate with increased tendon reflexes & excessive motor response) 12) several studies: jittery infants without a history of perinatal complications had normal neurodevelopmental outcome (regardless of whether the tremor was fine or coarse) 13) Tremor can be differentiated from seizure if? A) tremor can be brought on with stimuli & can be stopped with gentle passive flexion & restraint of the affected limb. B) tremor is not associated with significant with ocular phenomena such as forced eye deviation C) tremor is not associated with significant autonomic changes such as hypertension or apnea 14) A benign tremor will resolve when the neonate is allowed to suck on the examiners finger 15) Investigation: Depend on the clinical situation, but consideration should be: a) Septic work b) Urine drug screening c) Thyroid function test d) Neuroimaging e) Metabolic work up Treatment: Should be aimed at correcting the underlying cause if identified

**Conclusion:** Paroxysmal abnormal movements in childhood comprise a wide range of differential diagnoses which can be epileptic and non-epileptic. History taking and examination of the movements may dramatically increase the diagnostic accuracy. A long-term video-electroencephalographic recording may be necessary to provide ultimate diagnosis in some situations. Prompt and accurate diagnosis is extremely important for commencement of the most appropriate treatment if indicated and to avoid unnecessary use of anticonvulsants in certain benign non-epileptic self-limiting conditions. Last but not the least, timely reassurance to parents of benign conditions is also very important to reduce unnecessary parental anxiety.

**Keywords:** Neonate; Epileptic; Movements; Nonepileptic

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**Two-Year Follow-Up Study on Neurodevelopmental Outcomes After Term Intrapartum Asphyxia Using Age and Stages Questionnaire**

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Birth asphyxia is one of the multiple causes of neonatal encephalopathy. The objective of this study was to evaluate neurodevelopmental outcomes of newborn term infants with definitive asphyxia. Thirty infants met study criteria for asphyxia. The 5-year incidence of asphyxia was estimated to be 5.5 in 100 0. According to the Age and Stage Questionnaire, 1 0.5% of 6-month-old infants, 14. 3% of 12- and 18-month-old infants, and 5. 3% of 24-month-old infants had neurodevelopmental delay in gross motor function in the absence of cerebral palsy. In 7. 3% of 18-month-old infants, neurodevelopmental delay in problem-solving ability was observed. Higher values of Apgar score and bicarbonate levels were associated with higher Age and Stage Questionnaire total score. Delivery type, maternal age, gravidity of mother, and
existence of mother disease during pregnancy were also associated with lower Age and Stage Questionnaire total score in different stages of life.

**Keywords:** Neurodevelopment- HIE- Age and Stage Questionnaire

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**The effect of aromatherapy with Rosa damascene in sleep disorders in children**

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**Background:** Sleep disorders are one of the main problems that can influence childâ€™s growth and development. Aromatherapy is a kind of alternative medicine that uses essences of herbs to reach therapeutic effects. The aim of this study was to investigate the effects of Rosa damascene aromatherapy on sleep quality in children.

**Method:** This was a pre-and-post clinical trial conducted on 30 children aged 5-12 years with sleep disorders. Children received Rosa damascene aromatherapy for 2 weeks before sleeping. Before and after intervention, BEARS questionnaire was assessed.

**Result:** After the study, the prevalence of sleep latency, difficulty waking in the morning and nightmare decreased.

**Conclusion:** Aromatherapy with Rosa damascene can notably improve the sleep quality in children with sleep disorders.

**Keywords:** Aromatherapy- sleep disorder- Children

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**Citrullinemia type 2**

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The patient is a 15 year old adolescent from shahrood. He had been periodically hospitalized many times in different ICU sections due to preserving seizures, delirium, and continuous deficiency and intermittently intubated since three months ago before being visited. Probably, before beginning above mentioned cases the patient hadnâ€™t neurological and psychological disorder, during studying at high school. Patients seizures hadn’t been controlled with medicines such as phenobarbital, phenytoin, IV valproate, and midazolam. After weaning from ventilator manifested some psychological disorders like instability, gluttony and unusual behaviors not compatible with his age. Being diagnosed with viral cerebral encephalitis, autoimmune encephalitis and cerebral vasculitis got acyclovir and then IVIG and prednisolone pulse many times without any prevalent changes in his position. In Brain MRI signal changes were detected in parietofrontal in T2. In first laboratory tests, no evident signs were detected that will be mentioned briefly under neath. ESR=15, Hb=13, MCV=81, CSF/A=NL, NMDA Ab=NG, CSF PCR HSV=Ng, ANA=Ng, NH3=89, Lactat=17 Sleep EEG-teta pattern in background After high protein diet, blood ammonia was rising (325mcg/dl) & The organic acid in his urine showed a clear elevated LACTIC ACID & traces of 2-HYDROXYISOVALERIC ACID & 5-HYDROXYCAPROICACID. Such as tandem mass spectrometry showed significantly elevated levels of Citrulline. Citrulline in chromatography was 1468umol/lit (normalrange: 19-47). At the end, the patient, with low protein diet &hyperammonemiatreatment, gradually got better psychomotor condition with encephalopathy relief & stopped seizures. After 3 months, the patient started studying & had normal living.

**Keywords:** encephalopathy; hyperammonemia; seizure; citrillinemia

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**Confusing Patterns in Pediatric Electroencephalography**

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Pediatric Electroencephalography is sometimes misleading and confusing. Benign Variants, developmental patterns, artifacts are the most significant elements in this regard. Benign Variants are the normal components of pediatric EEG which are very similar to abnormal patterns and epileptiform activities. Developmental patterns are just like pediatric developmental milestones, appearing in certain age and disappearing in other age group. Sometimes these patterns persist through adulthood and lifelong. Certain artifacts are really misleading and confusing and they are easily mistaken as abnormal epileptiform discharges. In my talk, I will address the above-mentioned issues and I will give the examples from our own patients admitted at Children’s Medical Center’s Epilepsy Monitor Unit (EMU).

**Keywords:** Confusing EEG Patterns, Pediatric EEG, Encephalography, EMU, Benign Normal Variants
Principle of seizure management in neurodegenerative disorder of children

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More than 600 disorders with degenerative impact the nervous system and epilepsy is part of the clinical picture of some of them. Neurodegenerative diseases are defined as hereditary and sporadic conditions which are characterized by progressive nervous system dysfunction. These disorders are often associated with atrophy of the affected central or peripheral structures of the nervous system. Some present in adults such as dementia syndromes, Parkinson’s Disease, ALS while some manifest in early ages e.g., ceroidLipofuscinosis, Neurometabolic disorders, mitochondrial disease, Lipidosis and others are seen in both age groups. The framework of health information on neurodegenerative diseases include brain diseases, defined as pathologic conditions also affecting the brain (composed of the intracranial components of the central nervous system). This includes (but is not limited to) the manifestation seen in clinical course of some degenerative disease. In most seizures respond to available medications. However, a significant number of patients, especially in the setting of medically-intractable epilepsies, may experience different degrees of memory or cognitive impairment, behavioral abnormalities or psychiatricsymptoms, which may limit their daily functioning, on the other hand clinical course of some degenerative or metabolic disorders may be aggravated by some antiepileptic drugs. In order to prevent such an adverse effect clinician need to consider side effect of and impact of medical treatment on nature and clinical course of these disorders. In this lecture we will discuss management of seizure conditioned in these cases.

Keywords: Epilepsy, Neurodegenerative disease, Children

Benign Myoclonic Epilepsy in Infancy (BMEI)

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Benign Myoclonic Epilepsy in Infancy (BMEI) Seyed Hassan Tonekaboni MD Professor of Pediatric Neurology Pediatric Neurology research Center, ShahidBeheshti University of Medical Sciences Benign Myoclonic Epilepsy in Infancy is a rare epileptic syndrome characterized by isolated, short myoclonic seizures in a normally developed child. These myoclonic seizures can be provoked by external stimuli (touch or sound) and are not accompanied by any other kind of seizures. There may be a positive history of febrile convulsion in the child and strong positive family history of febrile and non febrile seizures. These seizures are easily controlled by conventional antiepileptic drugs. Generalized tonic clonic seizures can occur later but usually there is complete remission and normal ultimate neurodevelopment. Some benign conditions as shuddering spells and benign essential myoclonus and some conditions with more guarded prognosis as infantile spasm and Dravet syndrome are in differential diagnosis. This will be discussed in details in the lecture.

Keywords: Myoclonic Epilepsy, Infant, Seizure

Posterior reversible encephalopathy syndrome

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Posterior reversible encephalopathy syndrome (PRES) is a clinical radiographic syndrome of heterogeneous etiologies that are grouped together because of similar findings on neuroimaging studies. PRES is increasingly recognized and reported; however, its incidence is not known. Patients in all age groups appear susceptible. It is the disorder of cerebral autoregulation and endothelial dysfunction. Hypertensive disorders, renal disease, nephrototoxic drugs (e.g., acyclovir), immunosuppressive therapies and treatment with high doses of methyl prednisolone are risk factors for this disorder especially in patients receiving excessive fluid loads. Cytotoxic drugs (e.g., cyclosporine) have direct toxicity on vascular endothelium, leading to vasogenic edema and PRES. Normal autoregulation maintains constant cerebral blood flow over a range of systemic blood pressure, by means of arteriolar constriction and dilatation. As the upper limit of cerebral autoregulation is exceeded, arterioles dilate and cerebral blood flow increases in a pressure-passive manner with rises in systemic blood pressure. The resulting brain hyperperfusion, may lead to breakdown of the blood brain barrier allowing extravasation of fluid and blood products into the brain parenchyma. The clinical syndrome is characterized by: Headaches, altered consciousness, visual disturbances and seizures. Hypertension is frequent but not invariable. The hypertensive crisis may precede the neurologic syndrome by 24 hours or longer. Neuroimaging is essential to the diagnosis of syndrome. Typical findings are symmetrical white matter edema in the posterior cerebral hemispheres and parieto-occipital regions that are best seen on MRI. With treatment, resolution of findings within days to weeks is expected. Treatment include: lowering blood pressure by an easily titratable parenteral agent such as nicardipine or labetalol, withdrawing or lowering the dose of the cytotoxic agent, and treating patients who have a seizure with antiepileptic drugs. Most patients recover within two weeks. A small number have residual neurologic deficits resulting from secondary cerebral infarction or hemorrhage.

Keywords: Encephalopathy, Hypertensive encephalopathy, posterior reversible
Vitamin D in children with febrile seizure: A preliminary study

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Background: Febrile seizures are the most common convulsive disorder in children, and the role of vitamin D in these patients are under investigation. The objective of this study was to explore the levels of vitamin D in children aged six to 60 months presenting febrile seizure.

Methods: We measured plasma vitamin D, Ca, P, Alp, and PTH in 40 children with their first episode of febrile seizure, and analyzed them using descriptive statistics.

Results: The mean plasma Ca level was 9.64 ± 0.46 mg/dl, the phosphorous level was 5.04 ± 0.71mg/dl, the PTH level was 28.22 ± 15.70 IU/L, and the alkaline phosphates level was 461.22 ± 137.95 IU/L, which were all in normal ranges. The mean vitamin D level was 24.41 ± 11.21 ng/ml.

Conclusion: Our study demonstrated a high frequency of vitamin D deficiency among this population of Iranian children, and this result can possibly propose a relation between vitamin D deficiency and febrile seizure.

Keywords: febrile seizure, vitamin D, children

Neurobrucellosis presenting with unilateral abducens nerve palsy

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Neurobrucellosis is a rare complication of brucellosis. Several clinical forms of brucellosis affecting the CNS have been reported, including meningitis, meningoencephalitis, myelitis, radiculoneuritis, cranial nerve involvement, and demyelinating or vascular disease. In this case report we introduce a 2.5 years old girl with unilateral Abducens nerve palsy. The patient is presented with left eye isoptria for 3 days, fever and occasional vomiting for 20 days. Paraclinical findings: Brain MRI: There was a round hyperintense lesion at parasagittal cortex of left parieto-occipital area on T1-weighted images .There was another small hyper intense lesion at frontal subcortical white matter, near the anterior horn of left lateral ventricle on T1-weighted images as well. Orbital MRI : normal CBC: WBC= 11600 (Poly: 44.2%, Lymph: 46%, Mono: 9%), Hb= 10.4, HCT=31.6, Platelet= 244000, ESR=17, CRP= Negative, Wright Test: positive (titer: 1/640) 2ME: Positive (titer: 1/640) Coombs wright: Positive (titer: 1/1280) Treatment was started by the diagnosis of neurobrucellosis with the following protocol: 1)Intravenous Gentamycine (30 mg BID) for 10 days, 2)Oral rifampin (150 mg per day) for 6 weeks, 3) Oral trimethoprim-sulfamethoxazole (200-40 mg TDS) for 6 weeks. Fever was discontinued 3 days later and she was discharged from hospital 10 days after starting the antibiotic protocol.In outpatient visits after six and nine months there was not any recurrence of the disease, physical and neurologic exams were normal.

Keywords: Neurobrucellosis, Abducens Nerve Palsy

Evaluation of children development (12month) condition based on Ages Stages Questionnaire (ASQ) in Iran university health center in 2015

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Background: Children developmental delay prevalence is more than 13 percent. Early children identification with developmental delay is important in the Primary Health Care (PHC) setting. Children developmental disorder screening is so many important in terms of intervention and treatment timely. Early intervention is beneficial for cognitive, social, and emotional development in children with developmental disability. Developmental disorders are important health difficulties in childhood due to social opportunities and economical condition limitation.

Methods: Current study was a cross-sectional descriptive research. All 12 months children referred to Iran University health centers from April-March 2015. Children developmental screening from and Ages Stages Questionnaire (ASQ) was data collection instrument. ASQ was included total cases section for parent’s suggestion and 30 question including 6 questions for 5 fields of communication, fine motor, problem solving, and personal, social domain. The Data were analyzed using descriptive statistic by spss18.

Results: 436 children (1. 30%) were diagnosed referral requirement of 33353 filled questionnaires. Communication, gross motor, fine motor, problem solving and social-personal filled was reported 125 (28. 7%), 138 (31. 7%), 101 (23. 2%), 87 (20 %), 74 (17%), 168 (38. 5%) respectively.

Conclusion: Many parents were worried about their children developmental fields based on ASQ. Diagnostic test could lead to diagnose conclusively and intervene timely for identified children. Also parents education and practices for children aptitude would increase.

Keywords: Development, Children, ASQ

MRI Biomarker and Natural History in Alexander Disease
**Introduction:** Alexander Disease (AxD) is a leukodystrophy caused by mutations in the gene GFAP, encoding the glial fibrillary acidic protein, an astrocytic intermediary filament protein. Neuroimaging is notable for T2 signal hyperintensity and T1 hypointensity with predominant involvement of the frontal lobes, basal ganglia and brainstem, with contrast enhancement. MRI criteria for AxD have been established and are used routinely for diagnosis (diagnostic biomarker). A correlation between AxD imaging findings and clinical progression has not yet been established (prognostic biomarker). The Loes score is used in assessing the MRI findings of patients with X-Linked Adrenoleukodystrophy, and is used to predict clinical outcomes and response to therapy. Adaptation of the Loes scoring system may provide a prognostic biomarker in AxD. Objective: To develop a modified Loes MRI score in AxD as a prognostic biomarker in future clinical trials.

**Methods:** Retrospective review of MRIs from individuals with Type I AxD with documented GFAP mutations was done. MRIs were scored according to a custom modified Loes score. Parameters included caudal-rostral progression of T2 signal abnormalities, basal ganglia edema, and presence of contrast enhancement and involvement of additional structures. Age at MRI, age at disease onset and genotype were recorded. All MRIs were reviewed by two independent investigators. Retrospective review of medical records was done. Functional outcomes assigned according to the Gross Motor Function Classification at the time of the MRI and where available 5 years after the initial MRI. Scores assigned by two independent investigators, and consensus was achieved when there was discord between scoring. Best predictive model was established using univariate analysis (Chi2) for selection of criteria followed by logistic binary regression, using GMFCS score <2 and GMFCS score >2.

**Results:** 20 individuals with GFAP mutations and Type I AxD had MRI and clinical data available for analysis. Age of onset of symptoms ranged from 2 months to 4 years, with median 10.5 months. Median age of MRI was 22 months (4-242 months). 11/20 individuals had clinical data >2 years after initial MRI. The majority of Loes score criteria were collinear, and present in all individuals regardless of functional outcome. Twelve areas on MRI were found to have p scores <0.15 on univariate analysis with correlation with functional outcomes. Comparison of all possible combinations of these areas led us to identify a 4 point score as a predictive model for functional disability by GMFCS, which we called the AxD MRI scale. AxD MRI Scale scores >2 are correlated with poor functional outcomes at the time of MRI and more than 2 years later.

**Conclusion:** Specific features from the Loes score used in Adrenoleukodystrophy can be used to assess AxD neuroimaging. While many of the Loes criteria were present in all affected individuals, a more restricted group of variables (N=12) were correlated with functional disability and a model using 4 variable was predictive of short and long term functional outcomes.

**Keywords:** Biomarker, Alexander Disease, X-Linked Adrenoleukodystrophy

**First presentation of Myasthenia gravis following to heat stroke – A case report**

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**Background:** Myasthenia gravis is autoimmune neuromuscular disease characterized with muscle weakness increase during activities and resolved after rest. The main causes of Myasthenia gravis are producing autoantibody against acetylcholine receptors in neuromuscular junction in post synaptic area that block nerve transmission. The prevalence of Myasthenia gravis is 150-200 cases in 1 million people. Myasthenia gravis occurs 10%- 20% in childhood and juvenile. Muscle weakness and petosis are the main symptoms of Myasthenia gravis. stress, exercise, activities, infection and drugs maybe exacerbate the beginning of Myasthenia gravis.

**Case presentation:** A 1.5 years old boy admitted to madany children hospital for bilateral petosis and mild generalized weakness. he was born from related parents .he had history of hypothyroidism and treatment started from neonatal period. He was well before his travel but he developed bilateral ptosis due to heatstroke during trip in tropical area. He admitted to hospital for evaluation of Myasthenia gravis.In physical exam bilateral petosis, mild generalized weakness were obvious. The other exams and laboratory tests were normal. Autoantibodies against acetylcholine receptors were negative. The tensilon test showed rapid improvement of petosis and weakness after few minutes. He was treated with mestinon and prednisolon for 3 months. Conclusion: Myasthenia gravis is autoimmune neuromuscular disease .the acetylcholine receptors antibody cause nerve transmission block, petosis and weakness worsen during activities. In this case heatstroke predisposed him to Myasthenia gravis crisis.
Benign Paroxysmal Torticollis in infants

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Benign Paroxysmal Torticollis of infancy is a condition with abnormal posture of head and neck that head is deviated to one side. It disappears after several days but recurs a few weeks later. It is more common in girls. Benign Paroxysmal Torticollis is self-limited condition with an excellent outcome.

Case presentation: we report a patient, 2 month-old girl with torticollis that she was hospitalized for rule out of seizure, brain diseases, cervical subluxation. Her general condition, physical exam, EEG, Brain MRI and lab tests were normal. Passive movement of head was painless. Torticollis disappeared spontaneously in 2 days.

Discussion: Benign Paroxysmal Torticollis is one of the causes of head deviation that begins in infancy. It is episodic. In each attack irritability, pallor and vomiting may occur. After several hours or days, attack is resolved. These episodes continue to pre-school age. In some cases migraine is developed in adulthood. Conclusion: Benign Paroxysmal Torticollis is a self-limited disorder that improves with no treatment but it can mimic seizure. Therefore observation and rule out of posterior fossa tumor are suggested.
**Nutrition & Health**

**Assessment of Nutritional status and nutrients intake of elementary school girls in Isfahan City**

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**Background:** Nutrition is one of the most important health problems in the world. By measuring the height and weight of the children we can determine nutritional status as normal, obese, overweight and underweight. This study aimed to evaluate the nutritional status and nutrient intake of elementary school girls in Isfahan.

**Method:** In this cross-sectional study, 216 students from 4 schools of Isfahan city by using multi-stage random sampling were studied. Weight and height of them were measured by using the standard method and BMI was calculated and these measurements were compared with standard curves of America’s Centers for Disease Control at 2000 (CDC-2000). To determine the prevalence of stunting, NCHS (National center for health statistics) was used. Dietary data were assessed by a food frequency questionnaire (FFQ) with a standard size. The findings of these data were compared with the Dietary reference intakes (DRI) and were analyzed with NUT4 software.

**Results:** Almost 8. 3% of Students were underweight, 11. 2% of them were overweight and 8/6% were obese. Also, the 4/2% of them were stunted. The participants had an insufficient intake of calcium, zinc, iron, folic acid, riboflavin and vitamin B12.

**Conclusion:** According to the results of this study, a significant percentage of students were at risk of wasting or overweight. So, attending to the nutritional status if children and perform the food support programs seems necessary.

**Keywords:** Nutritional Status, Micronutrients, Body Height, Body Weight, Body Mass Index (BMI)

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**Nutrition with Special Soy-Based Formulas (SSBF) in case of Specific Conditions**

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**Background:** In recent years a lot of variety of formulas for the specific conditions in the feeding of infants and adults is offered to the market and that in the meantime formulas is based on a Special Soy-Based formula placed for others. The most important application of these formulas is in some cases such as allergy to cow’s milk proteins, galactosemia, lactose intolerance and animal protein-free diets, which can be used from birth to adulthood. Most recently, according to the reports of the American Academy of Pediatrics (AAP) 10-15% of infants who are allergic to cow’s milk proteins, soy protein allergy also have been shown. However it seems testing of SSBF is prior and valuable to hypo allergen formulas (HA) and deep hydrolyzed formulas (DHF) in case of CMPA. some reasons of this argumentations are as follow: 1-better and desired taste of SSBF to sour and bitter taste of HAF and DHF which result in better & enough nutrition of infants. 2- SSBF have a consistency to Goldenstandard of Breast Milk protein profile unlike HA & DHF which are also mostly free of casein. 3- hydrolyzing the natural protein, generally leading to the creation of new peptides whichare different from the peptides generated in the process of protein digestion by pancreatic enzymes. So infant misses the natural protein content. Also new peptides may earn new allergic properties that are absent in milk proteins. 3- the hydrophobic parts of the allergens that are not in direct contacts with immune cells become exposed due to hydrolysis reactions and causes greater allergies. In the USA, use frequency of SSBF is about 25% of the total commercial formulas. It also should be noted that, the other benefits of SSBF in addition to the above-mentioned factors, must also contains high amounts of minerals that including (calcium, iron and zinc), as well as those of the fitat protein and isoflavones have been isolated for lack of creating symptoms of bloating and etc. just like BIOMOL SOY.

**Conclusion:** Special Soy-Based formulas (SSBF) can be the best alternative for feeding in infants or adults compared with most commercial formulas based on cow’s milk and prevent the creation of the common and related diseases.

**Key words:** Special Soy-Based formulas (SSBF), Deep hydrolyzed formula (DHF), Cows Milk Proteins Allergy (CMPA), Galactosemia, Lactose intolerance.
Prevalence of malnutrition among children under 5 years in Fasa city in the year 2015

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Background: Evaluation of growth curves in children is a good way to understand the child’s health and nutritional status. With the anthropometric measurements could identify malnutrition before the onset of clinical symptoms at an early stage. Therefore, this study aimed to determine the prevalence of malnutrition in children under 5 years with anthropometric measurements in Fasa in 1994.

Method: This research was a descriptive study. Data collected from urban and rural health centers. This data included information about measurements of height and weight in children under 5 years who were looked after in urban and rural health centers. The rate of malnutrition on the basis of weight for age and height for age were measured and compared with NCHS-WHO table.

Findings: The findings of this study showed that the prevalence of stunting (height for age), underweight (weight for age) and also overweight and obesity (weight for age) among children under five years were 6.34, %1.4 and %1.8 respectively.

Conclusion: The results of this study showed that protein-energy malnutrition in the city of Fasa is less than previous years and also represent the improving performance of health centers and families. But it must be programmed to reduce malnutrition through education.

Keywords: malnutrition, underweight, overweight and obesity, stunting

Equity in health: Comparison of children health indices in poor and rich zones

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Background: Although many efforts made for the advancement of medical science, it is distributed inequitably despite of all existing financial and human resources facilities. Children as the most important and vulnerable groups of society are influenced by these inequities. The Objective of this study is comparison of children health indices in rich and poor rural zones in Mashhad/Iran.

Methods: This is a cross sectional study, We considered a poor (Andad) and a rich (Toos) zones to compared for some health indices. We compared some indices like: maternal mortality rate (MMR), neonatal mortality rate (NMR), children under 1 (IMR) and under 5 years mortality rate (U5MR), low birth weight prevalence (LBW), exclusive breast feeding (EBF) and fertility rate. Data collected with check list and analyzed by SPSS-11.5.

Results: in our study in two poor (Andad) and rich (Toos) zones we have: Neonatal mortality rate (zero versus 5. 46) (P= 0.00); breast feeding indices like exclusive breast feeding indices up to 6 month (54.4% versus 79%) (P= 0.01); have significant differences between two zones. But fertility rate indices like total fertility rate (2. 09 versus 1. 95) (P= 0.98) and Mean children mortality rates during 2011-2013 like children less than 5 years mortality (18. 65 versus 12. 13 per thousand live birth) (P= 0.29) does not have statistically significant differences.

Conclusion: This study shows that health indices in rich and poor zones, have significant differences

Keywords: children mortality rate; neonatal mortality rate; equity in health

Surveying prevalence of malnutrition and the effective factors in children under 6 years old, Qom, 2015

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Background: malnutrition is a health problem and one of the main causes of mortality in the developing countries in particular. The problem leads to negative physical and mental side effects. It is one of the most common and prevalent factors in decrease of life expectancy and health among children. The present study is aimed at determining prevalence of malnutrition and the effective factors in children below six years old based on the standards of WHO.

Methodology: A cross-sectional study was carried out on 286 children under six years old in four urban districts of Qom City. The subjects were selected through multistage cluster sampling. Along with height and weight of the children, demographics of the children and their parents was recorded via interviewing the mothers. Prevalence of malnutrition was determined based on three indices of weight to age (low weight), weight to height (thinness), and height to age (shortness). The collected data was analyzed in SPSS.

Findings: Boys and girls constituted 48. 6% and 51. 39% of the participants. According to the standards, 6. 28% of the children had severe and moderate low weight. Prevalence of low-weight in the girls and boys were 4. 31% and 8. 16%
respectively. As to height to age index, 8. 04% of the children had sever and moderate shortness. Prevalence of shortness in the girls and boys were 7. 2% and 8. 86% respectively. With regard to weight to height index, 6. 66% of the participants suffered from severe and moderate thinness. Prevalence of thinness in the girls and boys were 5. 75% and 7. 48% respectively.

**Conclusion:** The survey showed that malnutrition is a problem among children in Qom city. Although, a decrease in prevalence of malnutrition was observed comparing with previous studies, there are still needs for more efficient measures to achieve an ideal society.

**Keywords:** Children, Malnutrition

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**Correlation between Oral health and Nutrition**

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Nowadays according to scientific data there seems a strong relation between nutrition and integrity of the oral cavity in health and disease. Nutrition and diet has a major role in craniofacial and dental development, resistance to microbial biofilms and tissue repair capacity. The most common dental disease"dental caries"is strongly related to diet. Dietary factors associated with increased risk of caries are: sugar sweetened liquids, sticky foods, candies which-dissolve slowly, sugary starchy snacks and simple sugars. Furthermore oral health is related to diet in different ways. Dental caries, oral pain, soft tissue pathologies, tooth loss, xerostomia can reduce the ability to eat varied diet. Also these pathologies can effect the child’s selection of food’s type, consistency and taste. Consequently oral cavity diseases may have detrimental effects on children’s live. As we know more about the correlation between nutrition and oral health professionals of each group must learn referral to each other as a part of multidisciplinary patient care.

**Keywords:** Oral Health, Diet, Nutrition, Dental Disease

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**Whey: casein ratio and complete breast feeding**

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**Introduction:** Composition of human milk protein especially whey: casein ratio is important in growth and development and immunity of infant and complete and correct breast feeding for this purpose is vital.

**Methods:** In this study, several papers and researches about nursing and variability of composition of breast milk were studied.

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**Results:** In human milk whey: casein ratio is usually 60: 40. In early lactation, this ratio is 90: 10 and in late lactation 50: 50. Whey proteins are soluble and digestable proteins that pass rapidly from the stomach, but caseins are less soluble and digestable and slow absorbable proteins. Serum aminoacids are detectable about 30 minutes after consumption of whey proteins but this time for caseins are 2 to 4 hours. The main whey protein in human milk is alpha-lactalbumin but lactoferrin, lysozyme and secretory IgA also are whey proteins that exclusively exist in human milk and promote immunity. Casein proteins which have high concentration in late lactation can provide necessary proteins for infant in interval between feedings that is longer in late lactation.

**Conclusion:** Breast feeding in enough time and with correct technique can provide the best composition of proteins with appropriate whey: casein ratio (60: 40) for infants and so better health.

**Keywords:** Breast feeding, whey: casein ratio, whey proteins

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**The impact of nutritional support basket for children 6 to 59 months-old with malnutrition on their growth curve in the city of Sabzevar in 2014-2016**

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**Background:** the nutritional status during child hood due to the rapid brain development and physical growth have special importance and lack of attention to nutritional status at this time, reduced physical and mental performance assorted with (bring) irreversible effects. The aim of this study was to determine the effectiveness of nutritional support on improving the nutrition status of maldnourished children of families in need.

**Methods:** this cross-sectional study was conducted in collaboration with the imam Khomeini relief foundation, during 2 years (2014-2016). At first 6-59 month-old children with malnutrition due to food shortage receive, identified and then between 150 eligible children in 2014 and 500 children in 2015, food basket delivered monthly and family training were started at the same time.

**Findings:** In (2014-2015), 150 children with growth failure after food intervention and nutritional educations 70% of them have got improve and in (2015- 2016), 500 children with
growth failure after food intervention and nutritional educations 75% of them have got improve.

**Conclusion:** If we accurate identify the children with malnutrition due to the nutritional problem. We can give them a favorable impact on growth, with nutritional intervention and nutritional education.

**Keywords:** Children, Malnutrition, Food Basket

**New considerations for probiotics in pediatrics**

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The term Probiotic is currently used to name ingested microorganism associated with beneficial effects to humans and animal. The most common probiotics include strains of Lactobacillus or Bifidobacteria which are part of the normal gastrointestinal microbiota. Prebiotics are nondigestible carbohydrates that selectively promotes the growth and/or activity of beneficial colonic bacteria. Most probiotics are either Lactobacillus or Bifidobacterium. Other common probiotics are yeasts – for example, Saccharomyces boulardii. Probiotics: exert a trophic action on the intestinal mucosa, Leads to brush border enzyme activation, Stimulation of glucose absorption, Antiapoptotic effects on the enterocyte Effects are strain formulation-specific and cannot be extrapolated from one probiotic to another. The strongest evidence for the clinical effectiveness of probiotics has been in the treatment of acute diarrhea, most commonly due to rotavirus, and pouchitis. Probiotics are generally regarded as being safe, and side effects in ambulatory care have rarely been reported. Probiotics are sensitive to environmental conditions such as heat, moisture, oxygen, and light. Probiotics should not be administered to children with chronic or serious diseases, including children who are immunocompromised, chronically debilitated, or who have indwelling medical devices.

**Dosage and Treatment Duration of Probiotics**
The minimum dose for some strains is 109 CFU/day. Lactobacilli are administered in high numbers, usually 5–10 × 109CFU/day for children and 10–20 × 109CFU/day for adults for ≥5 days. Dosage of S. boulardii is most often 250–1000 mg. According to a National Health Interview Survey, probiotics are the third most commonly used dietary supplements, after vitamins and minerals, and the use of probiotic supplements continues to increase annually.

A study conducted by researchers at the University of Los Angeles found that probiotics actually altered the brain function of the participants. After the 4 weeks it was found that the women in the probiotic yogurt group had a more stable emotional response when exposed to a stressful situation. New research finds that yogurt, kefir, sauerkraut, and other fermented foods ease anxiety.

**Keywords:** Probiotics, Nutrition, Lactobacillus, Bifidobacteria

**Whey: casein ratio and complete breast feeding**

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**Introduction:** Composition of human milk protein especially whey:casein ratio is important in growth and development and immunity of infant and complete and correct breast feeding for this purpose is vital.

**Methods:** In this study, several papers and researches about nursing and variability of composition of breast milk were studied.

**Results:** In human milk whey: casein ratio is usually 60:40. In early lactation, this ratio is 90:10 and in late lactation 50:50. Whey proteins are soluble and digestable proteins that pass rapidly from the stomach, but caseins are less soluble and digestable and slow absorbable proteins. Serum aminoacids are detectable about 30 minutes after consumption of whey proteins but this time for caseins are 2 to 4 hours. The main whey protein in human milk is alpha-lactalbumin but lactoferrin, lysozyme and secretory IgA also are whey proteins that exclusively exist in human milk and promote immunity. Casein proteins which have high concentration in late lactation can provide necessary proteins for infant in interval between feedings that is longer in late lactation.

**Conclusion:** Breast feeding in enough time and with correct technique can provide the best composition of proteins with appropriate whey: casein ratio(60:40) for infants and so better health.

**Keywords:** Breast feeding, whey:casein ratio, whey proteins

**Frequency of “Nursing Strike” and Contributing Factors**

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Abstract background: An abrupt refusal by the infant to breastfeed is often called “nursing strike”. In fact a common reason for cessation of nursing is infant’s refusal to breast feed. This problem can often be overcome. This paper has aimed to identify the causes of “breast feeding refusal” or “nursing strike” in 6 month old infants visiting the East Tehran health center for their scheduled vaccination of 6 months old. Methods: Totally 175 six month old infants were enrolled in this study. A questionnaire was filled by mother for each child
and later the infants with “nursing strike” were compared with all others. Findings: In this study prevalence of breast feeding refusal in infants was 24%. There was significant relation between the “breastfeeding refusal” and maternal academic education or working status, meaning there was more “breastfeeding refusal” in the working mothers or those with higher education. There was no significance relation between the “breastfeeding refusal” and gestational age, type of delivery, having previous nursing education, and maternal underlying conditions. In this study mothers reported various reasons associated with “refusal breast feeding. According to the mother’s report playful infant and nasal obstructions were the probable causes for refusal. Conclusion: There is a diverse variety of factors influencing nursing strike. Most of these factors can be prevented by identifying the background reasons and proper training.
**Pulmonology**

An Investigation on adopting home mechanical ventilation for patients in need of prolonged mechanical ventilation: Children’s Medical Centre 2014-2015

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**Background:** The number of patients with chronic respiratory failure is on the rise. A cost effective alternative to hospital care for such patients is to facilitate home care by providing long-term mechanical ventilation. This is further supported by developmental and psychological benefits of home care, as well as avoiding hospital-acquired infections. Children in home care become a member of the family, and might be able to attend school, participate in social activities and thus experience a near-normal life. Due to numerous benefits of home mechanical ventilation, and the lack of research in this field of study, this dissertation has been designed to estimate the number of patients requiring prolonged ventilation and the cost of services, and to evaluate the underlying causes and the organization services.

**Methodology:** This cross-sectional study was conducted on a set of 36 children with chronic respiratory insufficiency under home mechanical ventilation at Children’s Medical Center during 2014. Patient’s vital signs were stable and they required respiratory support for two weeks. Patient family was provided required training for child care at home. To ensure optimal nutritional status of the patient and proper functioning of the home mechanical ventilation patients’ transfer to home was supervised by the medical team. A patient’s systematic follow-up was also considered with occasional home visits and regular follow up at Children’s Medical Center. Following the ethical procedures, the accumulated data was recorded in the questionnaire, and then analyzed by using SPSS version 19.

**Results:** The mean age of the studied patients was 5.8 ± 4.8 year. The gender distribution was 20 (55.6 %) male and 16 (44.4%) female. Patients were hospitalized 3.6 ± 4.9 times (range 1-30) with an average of 53.2 ± 44.9 days (range, 7 to 180 days) during the past year. The cause for home mechanical ventilation was airway obstruction in 16 patients (44.4%), alveolar hypoventilation in 14 patients (38.9%), and a combination of obstructive disease and hypoventilation in 6 patients (16.7%). No complications experienced by 8 patients (22.2%) under home care. The complications associated with the use of home mechanical ventilation in the rest of 28 patients were included: nasal dryness by 4 patient (11.1%), mask intolerance by 8 patient (22.2%), improper mask fixation by 9 patients (25%), redness of the face without ulcer by 6 patients (16.7%), nose wound bridge by 2 patients (5.6% ), abdominal distention by one patient (2.8%), and nasal bleeding by one (2.8%). The mean cost of hospitalization was 2.28 ± 2.57 million Tomans with the range of 0.12-1. 4 million Tomans. The average cost of purchase and maintenance of home ventilation was 6.04 ± 4.15 million Tomans with the range of 2.52-18.6 million Tomans. A significant statistical difference is observed between the mean cost of hospitalization and the cost of purchasing the equipment for home care, (t =4.177, P

**Keywords:** Chronic Respiratory Insufficiency, PICU, Home Mechanical Ventilation

The effect of adjuvant zinc therapy on recovery from pneumonia in hospitalized children; a double-blind randomized controlled trial

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120 children aged 3-60 mo with pneumonia were randomly assigned 1: 1 to receive zinc or placebo (5 ml every 12 hours)along with the common antibiotic treatment until discharge. Primary outcome was recovery from pneumonia which included the incidence and resolving clinical symptoms and duration of hospitalization.

**Keywords:** Zinc, Pneumonia

A case of subglottic hemangioma with dramatic response to low dose propranolol

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**Background:** Infantile Subglottic hemangioma causes stridor and respiratory distress starting from the first months of life. There are many case reports due to controlling this anomaly by 2 mg/kg /day propranolol. It is recommended to start propranolol at 0.16 mg / kg/8 h and increase it to 0.67 mg/ kg/ 8 h considering monitoring vital signs and blood glucose. Considering the side effects of this drug, like hypotension, bradycardia, bronchoconstriction and hypoglycemia we introduce a case of subglottic hemangioma that was controlled by lower dose propranolol.
Case presentation: A girl of 2 months was suffering of progressive respiratory distress and inspiratory and expiratory stridor started since she was one month. She needed nasal oxygen specially during feeding. By laryngoscopy and three-dimensional computed tomography scan, subglottic hemangioma was detected with nearly complete stenosis. Propranolol was started at 0.16 mg /kg/8h and increased at the second day to 0.2 mg /kg/8h while blood pressure and heart rate and blood glucose were monitored. Surprisingly stridor and respiratory distress was decreased and after one week the patient was discharged without any respiratory symptom. Propranolol was continued at 0.2 mg /kg/8h for 10 month and when she was one year it was discontinued. Patient was seen each month during second year of age without any respiratory complaint.

Conclusion: This presentation suggests, low dose propranolol at 0.6 mg /kg/day instead of 2 mg/ kg/day for subglottic hemangioma. For prevention of propranolol side effects this experience might be helpful. Larger study on efficacy of low dose propranolol is recommended.

Keywords: Subglottic, Hemangioma, Propranolol

Pleural effusion usually develops because of excessive filtration or defective absorption of fluid in the pleural space. There are numerous disorders which manifest themselves primarily of secondarily as complication with pleural effusion. Exudate as parapneumonic effusion is most common cause of fluid collection in pleural space. Similar to pneumonia and pulmonary abscess other conditions as tuberculosis, autoimmune diseases and malignant tumors can develop exudate because of increased capillary permeability (leakage). Parapneumonic exudate can progress to an infected fibrinopurulent fluid with adhesions and loculations, finally organized with formation of a pleural peel. Empyema is an infected thick, viscous purulent pleural fluid mass. The obstruction of lymphatic pathway in the thoracic cage is on the other side a frequent cause of pleural effusion especially by localization of malignant lymphatic masses in hilus and mediastinum.

Transudative pleural effusion commonly results from heart failure because of increased pulmonary venous pressure which in turn forces fluid across the visceral pleura into the pleural spaced hydrostatic pressure.

Congenital chylothorax in neonatal period is an incidental finding with accumulation of chyle in the pleural space, because of congenital lymphatic abnormalities or rupture of the thoracic duct. Acquired chylothorax and hematothorax are originated traumatic or iatrogenic.

The decreased oncotic pressure contributes in moving of fluid into the pleural space especially by hypoalbuminemia in nephrotic syndrome or other similar conditions. The aim of this presentation is to give an overview of etiological causes of pleural effusion and use of different modalities in identification of different types of pleural effusion. The valiability of different techniques and their indication will be discussed.

Keywords: Pleural Effusion, Children, Imaging
Rheumatology & Autoimmune Disorders

The prevalence of sensorineural hearing loss in patients with Kawasaki disease after treatment

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Background and Aim: Kawasaki disease (KD) is an acute childhood febrile illness with worldwide incidence and the highest incidence occurs in Asian children, with coronary arteritis being the main complication. Sensorineural hearing loss (SNHL) has also been described as a complication of KD in several articles. The aim of this study was to evaluate the prevalence of SNHL in patients with KD treated with intra vein immunoglobulin (IVIG).

Methods: In this cross sectional study, we evaluated 56 patients who received KD treatment between 2011 and 2015 by auditory brainstem evoked response (ABR), pure tone audiometry (PTA), and tympanometry. Also, we evaluated the prevalence of coronary arteritis, the time of beginning IVIG treatment from the onset of fever, the prevalence of thrombocytosis, and erythrocyte sedimentation rate (ESR) in acute or subacute phases of their disease.

Results: During audiological evaluation, we found SNHL in one (2.6%) of the 36 patients. Other findings in the acute and subacute phases of KD included: 8 patients (22%) had coronary aneurysm, 17 (47%) thrombocytosis, 25 (69%) had elevated ESR, and the treatment with IVIG within 10 days of fever was done in 19 patients (53%).

Conclusion: SNHL is a complication of KD which could extend beyond the treatment time. In this study, the patient with SNHL was treated with KD two years before the study and in the acute phase of KD, he had thrombocytosis > 500,000, coronary artery aneurysm, ESR>4.0. The treatment with IVIG was done within the first 10 days of fever onset.

Keywords: Kawasaki Disease; Sensorineural Hearing Loss; Auditory Brainstem Evoked Response; IVIG

Mesenteric vasculitis in a child with systemic lupus erythematosus: A case report

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Mesenteric vasculitis is uncommonly discovered in patients with systemic lupus erythematosus especially among young individuals. Herein, we report a 12-year-old girl with lupus mesenteric vasculitis with unusual manifestations. In her final diagnostic assessment by biopsy, large vessel with severe hypertrophy of media and stenosis of vascular lumen was revealed. It was also revealed vessel wall with infiltration of few neutrophils, nuclear debris and fibrinoid necrosis that confirmed the final diagnosis of vasculitis.

Keywords: Mesentric Vasculitis, Systemic Lupus Erythematosus

Corticosteroid consumption in children with Kawasaki disease

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Introduction: KD is a vasculitis with multiorgan involvement of unknown etiology; it is the most common cause of pediatric-heart diseases in developed countries. Treatment with IVIG prevents coronary artery lesions; although there are some IVIG-resistant cases, combination therapy with corticosteroids and IVIG is one of the recommendations for treatment of these cases.

Method: a prospective study of hospitalized cases of KD in Imam Reza’s pediatric department between OCT2013 to OCT2015. Based on demographic and clinical data of these patients, children with high risk of unresponsiveness to IVIG therapy (based on Harada score) were determined and treated with IVIG and corticosteroids combination initially.

Result: 25 patients of total 28 hospitalized patients in this period of time who fulfilled diagnostic criteria were considered as complete KD; the other 3 had incomplete KD. Coronary Artery Lesions (CALS) were shown in 4 patients during the follow-up period, with higher risk in patients with incomplete presentation (33.3% vs. 12% p)

Keywords: Kawasaki, Corticosteroid, Coronary artery lesions.

Pro-inflammatory cytokine single nucleotide polymorphisms (IL6, TNF, IL1 family) in Kawasaki disease

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Purpose: To evaluate the polymorphism of proinflammatory cytokines (IL6, TNF alpha, and IL1) in the children with Kawasaki disease.
Methods: The children with Kawasaki disease entered the study. Polymorphism in the region of cytokine gene promoters was identified with the method of PCR-SSP (polymerase chain reaction-sequence specific primer) and genotype and frequency of alleles were assessed. A control group from healthy children, matched in age and sex with our patients, was selected and the polymorphisms of IL6, TNF alpha, and IL1 were compared between case and control groups.

Results: 55 cases and 140 controls entered the study. Polymorphism of TNF alpha in locus 203 (GA, GG and A alleles), polymorphism of IL-1Ra (CT, TT, and C and T alleles, and polymorphism of IL-6 in locus 174 (CG and GG) showed significant differences between case and control groups. There were no significant differences in other polymorphisms of IL-R, IL-1Î±, IL-1Î² between 2 groups. There were also no significant differences in polymorphisms between Kawasaki cases with and without cardiac involvement and between typical and atypical Kawasaki cases. Polymorphisms of IL-1Ra (CT and CC) and IL alpha (CT and CC) showed significant differences between Kawasaki cases resistant and susceptible to intravenous immunoglobulin (IVIG).

Conclusion: Polymorphism of TNF alpha 203 (GA, GG and A and A allele), polymorphism of IL-1Ra (CT, TT, and C and T alleles, and polymorphism of IL-6-174 (CG and GG) might be different in Kawasaki disease from general population.

Keywords: Kawasaki Disease, SNP, Proinflammatory Cytokines, IL1, IL6, TNF

Clinical presentations in Patients with Fibrodysplasia Ossificans Progressiva

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Background: Fibrodysplasia Ossificans Progressiva is a rare genetic inflammatory disease that is often inherited sporadically in an autosomal dominant pattern and characterized by progressive heterotopic ossification presenting as recurrent soft tissue masses. The disease manifests in early life with malformed great toes and, its episodic and progressive bone formation in skeletal muscle after trauma is led to extra-articular ankylosis and swelling which may cause disabling, restricted joint mobility

Methods: We reviewed 18 patients with FOP referred to the pediatric rheumatology clinics of Tehran University of Medical Sciences between 1991 and 2016. We noted the sex, age, dates of birth and past medical history. Physical examination, and skeletal survey in order to characterize the clinical presentations. All 18 children (eight boys and ten girls; ages 1.5-17.5 years) had congenital malformations of the great toes
Congenital localized scleroderma

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Unlike adults scleroderma is most commonly seen as localized scleroderma (LS) in children. The mean age of LS in pediatric group is 7.3 years. The disease may begin at birth very rarely and may be misdiagnosed as skin infection, nevus or salmon patch. Here we present a 9-month-old infant born with a small left lower limb which showed hyper pigmented stiff plaques on the skin of right hemithorax and left scapula. He was managed as a hemi hypertrophic case during this period; Final diagnosis as deep morphea was done by skin biopsy. A study in 2006 reported 6 children with congenital localized scleroderma (CLS) four of them were girls and two boys; the mean age at diagnosis was 3 year old.

Keywords: localized scleroderma, Congenital, Morphea

Class I and class II HLA typing for familial Juvenile idiopathic arthritis

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Background: Juvenile idiopathic arthritis refers to a group of disorders that is characterized by chronic arthritis The overall prevalence of JIA to appear in North America and Europe than in Asia. The presence of HLA I and HLA II alleles associated with increased risk of developing JIA and there was no evidence of association between DRB1 and JIA. The results indicated that among different alleles of HLA-DRB1, alleles of HLA-DRB1 01, 08, 11, 13 most alleles associated with other diseases and HLA-DRB1 04, 07 as a protection against disease have became according to the researches, evidence of association between DPB 10201, DR5, DR8, HLA-A2 alleles

Methods: this study were done for eleven patients from six families who were at least two patients children. Routine hematological and immunological tests were done by standard method and HLA typing was done by the lymphocytotoxicity method. After sampling and DNA extraction PCR was performed for all samples. Polymerase chain reaction-based high resolution HLA typing for class I and class II loci was accomplished

Results: The most common HLA class I was CW*1203 then A*1101. And The most common HLA class II was DQB1*0501 then DQA1*0501, DQB5*0101 and DRB3*0101. The most common hypo type WERE DQA1*0101, DQB1*0501 AND DRB1*1601

Conclusion: Inherited HLA factors in JIA show similarities overall as well as differences between JIA subtypes.

Keywords: Juvenile idiopathic arthritis, HLA typing, Nicolau syndrome due to penicillin injection, 3 case reports.

Nicolau syndrome due to penicillin injection, 3 case reports.

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Nicolau syndrome (NS) is a rare condition caused by intramuscular or intra-articular injection of various medications. Several drugs such as penicillin, non-steroidal anti-inflammatory drugs, corticosteroids and local anesthetics have been reported to be the cause of NS. Intramuscular injection of Phenobarbital, Chlorpromazine, Gentamicin, Dexamethasone, DPT vaccine, Diphenhydramine and lidocaine have also led to NS. However the pathogenesis of NS is unknown but sympathetic nerve stimulation, prostaglandin synthesis block, embolic occlusion, inflammation and physical obstruction of the blood vessels have been suggested. The disease may have a dreadful appearance and makes parents very anxious. Because of its nonspecific signs and symptoms, it could be misdiagnosed as other illnesses such as vasculitis or infectious problems. It may also lead to gangrene of extremities, renal failure and even death of the patient. Here we present two female children (9 and 2 year old) and one 2-year-old boy, with NS caused by intramuscular injection of benzathine penicillin.

Keywords: Nicolau Syndrome, Intramuscular Injection, Penicillins, Drug-Related Side Effects, Adverse Reactions
A Comparative Study of the Abdominal Muscles Thickness in Healthy Adolescents and Patients with Low Back Pain using Sonography

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Introduction: Low back pain (LBP) is a common musculoskeletal disorder among different age groups including adolescents. The purpose of this study was to compare the abdominal muscles thickness between healthy children and those suffering from LBP.

Method: One hundred and sixty healthy high school children (80 boys and 80 girls) and 80 high school children with LBP (40 boys and 40 girls) participated in the present study. All subjects were asked to complete the demographic questionnaire and also Visual analogue scale and Oswestry disability questionnaire to evaluate pain intensity and functional disability. Then, abdominal muscles thickness was examined using sonography.

Results: The results showed a significant difference between healthy and LBP subjects in terms of abdominal muscles thickness. Patients had smaller abdominal muscles compared with healthy adolescents. No significant difference was found between healthy and LBP boys in terms of subcutaneous fat dimension but a significant difference was revealed for subcutaneous fat dimension between healthy and LBP girls.

Conclusion: According to the results, abdominal muscles atrophy was shown in children suffering from LBP. Future studies with a larger sample and a wide age range are recommended to support the results of the present study.

Keywords: children, abdominal muscles, sonography, low back pain

Normal values of abdominal muscles thickness in healthy children using ultrasonography

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To Study Early Complement Component of Classic Pathway in Pediatrics with Systemic Lupus Erythematosus

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Background: Pediatric-onset Systemic Lupus Erythematosus (pSLE) accounts for about 10-20% of all patients with SLE. Deficiencies in early complement components of classical pathway are the strong genetic risk factor for the development of SLE. In this study, clinical and laboratory manifestations of both complement deficient and normal complement pSLE patients were compared.

Method: After informed consent from parents, 36 consecutive pSLE patients (onset before 18 years) were enrolled. Complement C1q and C2 levels were measured by Radial Immunodiffusion assay and complement C3 and C4 levels were measured by nephelometry. Medical records were retrospectively evaluated from patient database of Children Medical Center Hospital. Data were assessed through
Results: twenty-one patients (58%) had at least one component of complement deficiency. Ten patients (27%) had low C1q level, 11 patients (30.5%) had low C2, nine patients (25%) had low C3, and four patients (11%) had low C4 level. Serum level of complement in pSL was significantly lower than control group, except C4. (P = 0.000) The median age of disease onset was 9 years in female and 7 years in male. The low C1q patients had an earlier age of onset of disease. (P = 0.000) The female: male ratio was 1:2.5 in pSL with low complement and 1:14 in pSL with normal complement. The cutaneous manifestations were more frequent and much more severe in pSL with low complement. (100% vs. 73%) The frequency of renal and musculoskeletal symptoms were equal but renal morbidity were more common in pSL with low complement. Cardiovascular involvement was associated with complement deficiency. Positivity for Anti ds-DNA was less common in pSL with low complement. (71% vs. 86%)

Conclusion: in pSL patients with early disease onset and more aggressive SLE manifestations and negative Anti ds-DNA test, complement deficiency should be considered

Keywords: pediatric systemic lupus erythematusus, complemen deficiency, C1q, C2

Application of Ultrasonography in the Assessment of Skeletal Muscles in Children with and without Neuromuscular Disorders: A Systematic Review

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Introduction: The purpose of this study was to systematically review published studies (2000-2014) carried out on the application of ultrasonography (US) to evaluate skeletal muscle size in children with and without neuromuscular disorders.

Method: Different databases including PubMed, Science Direct, OVID, MEDLINE, CINAHL, EMBASE, ProQuest and Google Scholar were searched.

Results: Eighteen articles were found to be relevant. Eight studies applied US in combination with additional methods of assessment. Four of the 18 studies did not have a control group. Ten studies applied only US in the assessment of skeletal muscles in children with and without neuromuscular diseases. In 9 studies, there were children ranging widely in age, and in 3 studies US was used to determine normal values for skeletal muscles.

Conclusions: According to the results of these 18 reviewed articles, US is an appropriate, reliable and highly predictive method for assessment of skeletal muscles in children.

Key Words: Children, Myelomeningocele, Neuromuscular disease, Reliability, Skeletal muscles, Spina bifida, Ultrasound, Systematic, Review

Effect of Splinting with occupational therapy, on satisfaction, participation and quality of life in children with arthrogryposis

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Objective: The goal was to evaluate the effectiveness of an occupational therapy and splinting, compared with occupational therapy, on satisfaction with child function, participation and quality of life in children with arthrogryposis in Iran.

Methods: 12 children with arthrogryposis were randomly and equally assigned to occupational therapy and splinting group and occupational therapy alone for 3 month. The outcome measure was Canadian Occupational Performance Measure and SF36.

Results: 3 month of occupational therapy and splinting produced statistically significant differences in satisfaction with function and participation and quality of life, compared with occupational therapy home programe in children with arthrogryposis. Results demonstrated statistically significant differences, compared with occupational therapy programe.

Conclusion: occupational therapy and splinting can improve function and participation and quality of life in children with cerebral palsy.

Keywords: Splinting, occupational therapy, Arthrogryposis
The Comparison of the Lumbar Multifidus Muscle Thickness between Healthy High School Children and the Same Age Group Experiencing Chronic Low Back Pain Using Ultrasonography

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Introduction: Low back pain (LBP) is a common and costly musculoskeletal condition in general population. Previous studies revealed that the prevalence of LBP in children, same as the adults, is relatively high.

Purpose: The purpose of this study was to investigate the lumbar multifidus muscle thickness in 15-18 Y/O healthy boys and to compare these data with the data from the same children with chronic LBP using ultrasonography.

Methods: The present research was a non-experimental, analytic and case-control study. Lumbar multifidus muscle thickness of 15-18 Y/O boys, who were randomly recruited from five geographical areas in Tehran, was assessed. In the same aged boys with chronic LBP, lumbar multifidus muscle thickness was evaluated using ultrasonography. All measurements were compared between the two groups (healthy and LBP patients groups).

Results: There was a significant difference in all measurements of lumbar multifidus muscle thickness between the healthy children and those with LBP (P=0.05). A significant correlation was found between pain and level of functional disability and lumbar multifidus muscle thickness in children with LBP (p

Keywords: Children, Ultrasonography, Lumbar multifidus muscle, Low back pain


Methadone Poisoning in Children: Clinical and Laboratory Findings
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Background: Methadone is the most widely used pharmacological treatment for opioid dependence because of its long half-life, good intestinal absorption and low costs. In recent trend toward the outpatient management of opioid addiction with methadone; it is easily available at homes. Studies show that drug poisoning, especially Methadone accounts for about 60-70% of all poisoning in children.

Methods: This cross-sectional study was carried out by review the medical records of all poisoned patients by methadone admitted to emergency department of Motahari Pediatric Medical Training Center, Urmia, Iran from 2007 to 2012. The total number of 74 medical records were assessed. The data included demographic information, clinical and laboratory findings about each case were entered into the checklist. Data analyzed by SPSS version 22.

Findings: in 5 years, 74 children with Methadone Poisoning, 50 male (67. 6%) and 24 female (32. 4%) were hospitalized in Pediatric Medical Training Center. The most of children were in school age (31.1%), 71. 64% of children were living in the city and 28. 4% in rural areas. 52. 7% of patients were first-born. 87. 8% of Methadone poisoning had happened with the syrup and 12. 2% with tablet respectively. 93. 2% of Methadone ingestions were accidental, 5. 4% for pain relief and 1. 4% unintentional. Admission in general ward and PICU were the same. The most common clinical findings were miotic pupil (70.3%), drowsiness (70.3%), vomiting (52.7%), ineffective breathing (33.8%), LOC (4 0.5%), weakness (27%) and apnea (8. 1%) respectively. Also; there were some uncommon findings in our cases such as dizziness, ataxia and Sezier. Leukocytosis was the most common laboratory finding (45.9%), hyperglycemia (59. 5%) and respiratory acidosis (21.6%).

Conclusion: inappropriate Keeping methadone in containers without warning labels can be dangerous in children because of its side effects. So delivering clear information about the fatal effects of this methadone consumption by health- care personnel seems be necessary.

Keywords: Methadone Poisoning, Children, Clinical Findings, Laboratory Findings

Hand Function in Children with Congenital Disorder
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Congenital Upper Limb Differences Congenital differences of the upper limb are relatively common. Their prevalence is estimated at 16 per 10, 000 live births but varies within different populations and ethnic groups. In frequency they are second to congenital heart malformations. The upper limb difference can either be isolated (confined to the upper limb, possibly bilateral) or part of a syndrome. A number of different classification systems have been proposed, but the currently used classification of congenital differences of the upper limb is based on the Swanson classification. Hand motor function is of extreme importance to the developing child. The child’s desire to understand and master his/her surrounding world results in exploration and manipulation of objects and different materials. When treatment of the functional problems is not as successful as expected, one should be aware that some of these children next to their congenital hand difference might suffer from developmental coordination disorder (DCD). A distinction can be made in two different stages of hand skills development: 1. Basic hand skills: reach, grasp, hold, transport, controlled release and support 2. Development of more complex hand skills: complementary two-hand use, in-hand manipulation and the use of utensils. Basic Hand Skills Reaching Basic Hand Skills Reaching Controlled Release or Voluntary Release Complementary Two-Hand Use in Children with a Transverse Arrest In-Hand Manipulation Function, Activity, Participation Reported Problems Keywords: Hand Function, Congenital Disorder, Basic Hand Skills

Bruxism in Children
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Bruxism in children is very common but there is little evidence-based clinical practice. The etiology of bruxism is multifactorial: oral habits, tempromandibular disorders, malocclusions, hypopnea, high anxiety levels, personality, and stress. There is no exact epidemiologic data about the prevalence of bruxism in children because of confusion in diagnostic procedures. The effect of bruxism is controversy. The attritional effects of bruxism on teeth depends on factors such as: type and severity of the parafunction, localization of...
the teeth etc. In this paper we would summarize the diagnostic methods, etiologies and management of dental bruxism in children.

Keywords: Bruxism, Parafuction, Children, Clenching

Can language acquisition be facilitated in cochlear implanted children? The comparison of cognitive and behavioral psychologists viewpoints: A systematic review

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Aim: To study how language acquisition can be facilitated for cochlear implanted children based on cognitive and behavioral psychology viewpoints?

Methods: To accomplish this objective, literature related to behaviorist and cognitive psychology prospects about language acquisition were studied and some relevant books as well as Medline, Cochrane Library, Google scholar, ISI web of knowledge and Scopus databases were searched. Among 25 articles that were selected, only 11 met the inclusion criteria and were included in the study. Based on the inclusion criteria, review articles, expert opinion studies, non-experimental and experimental studies that clearly focused on behavioral and cognitive factors affecting language acquisition in children were selected. Finally, the selected articles were appraised according to guidelines of appraisal of medical studies.

Results: Due to the importance of the cochlear implanted child’s language performance, the comparison of behaviorist and cognitive psychology points of view in child language acquisition was done. Since each theoretical basis, has its own positive effects on language, and since the two are not in opposition to one another, it can be said that a set of behavioral and cognitive factors might facilitate the process of language acquisition in children. Behavioral psychologists believe that repetition, as well as immediate reinforcement of child’s language behavior help him easily acquire the language during a language intervention program, while cognitive psychologists emphasize on the relationship between information processing, memory improvement through repetitively using words along with associated pictures and objects, motor development and language acquisition.

Conclusion: It is recommended to use a combined approach based on both theoretical frameworks while planning a language intervention program.

Keywords: Language, cochlear implantation, cognition, behavior, child

Linguistic syntax development in identical, fraternal twin and singleton children

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Background: Beginning production of a single word at the end of the first year of life, children gradually mastered the rules of their language. Although development of linguistic syntax skill is very important for every singleton child, but it seems that it is more necessary in the development of twins. The aim of this study was to evaluate the process of linguistic syntax development in identical and fraternal Persian-speaking twins.

Methods: The research subjects were 14 pairs of identical twins, 41 single children, and 20 pairs of fraternal twins, all aged between 3 and 6, who were selected randomly from the nursery schools of Tehran City. Participants of the study were including 54 females and 55 males. Test of Language Development (TOLD), whose validity and reliability have already been verified by Iranian scientists, was used. The three subtests including grammatical comprehension, sentence imitation and grammatical completion were the research tools. The data were analyzed using ANOVA, Tukey test and SPSS software (version 17).

Findings: The mean results for combinational subscales showed significant differences in the three groups of subjects. The scores of three groups were compared using Tukey test. It showed that the mean scores in singletons and identical twins were more than fraternal twins.

Conclusion: In consistent with some previous studies, it seems that fraternal twins compared to the other groups have syntactic delay and they are at risk of the grammatical development delay.

Keywords: Linguistic syntax development, identical twins, fraternal twins, singletons

The important role of pediatric ENT physicians in early hearing detection and intervention

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Hearing loss is the most common congenital condition. Children who are deaf or hard of hearing face a potential
developmental emergency and should be identified as quickly as possible so that appropriate intervention services can be started. Over the past decade, tremendous progress has been made in ensuring that families have access to hearing screening when a baby is born. Approximately 95% of babies now receive a hearing screen shortly after birth and most countries now have statutes in place related to universal newborn hearing screening. Much work remains to be done, however. The development of a comprehensive Early Hearing Detection and Intervention (EHDI) program requires the involvement of a variety of professionals. Each professional involved in the process needs up to date and accurate information in order to provide appropriate services, advice, and guidance to parents who have a young child with hearing loss. To ensure families access to pediatric otolaryngology services that are in agreement with the current Joint Committee on Infant Hearing (JCIH) recommendations. Unfortunately many families have been misguided because of their physician not being aware of hearing loss emergency needs. Many of Physicians may not be familiar with EHDI goals and timelines. Multiple rescreens also can delay diagnosis. So, Consideration should be given to technology used for rescreens. An audiology test battery is needed to define type and degree of hearing loss. Longitudinal monitoring to detect and manage coexisting otology pathology (such as otitis media with effusion) which may impact management of hearing loss. When detected, a child with hearing loss should immediately get hearing device and participate in early intervention/rehabilitation program as soon as possible. Cochlear implants may be a consideration for infants with bilateral profound hearing loss too. And Families should be referred to the parent support program Guide By Your Side. By working closely together, we can make a difference in the lives of many families. And this would not be gained without physician’s awareness programs about hearing loss.

Keywords: Hearing Loss, Neonates, Physicians, Early Detection

The effect of eight weeks of aerobic and rope training on salivary cortisol and stress levels in the seven to ten years girls

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Regular sports activities involved in how secretion of hormones assisting to reduce stress and its role in public health. Aerobics and rope exercises are kinds of training that people are acquainted with them as effective sports. The aim of this study is to evaluate the effect of eight weeks aerobic exercise training on salivary cortisol and stress levels in the roping girls with the age of seven to ten years. In this semi experimental and applied research, the girls 7 to 10 years without background in the field who exercising in the sport clubs were randomly selected, 42 subjects are divided into two groups: 15 persons in each aerobic and rope groups as well as a group of 12 volunteer control. The control group was with an average age of 8. 40, 132cm height, 38. 4kg weight and aerobic group with an average age of 9, 145. 6cm height and 45. 7 kg weight, and the average age of attended person in rope group were 9. 83, height 132cm and weight 34 kg weight, and who were in the training groups, aerobic heart rate were 50 to 75 percent. Saliva samples were taken before and after of the training s period. Statistical analysis of survey data in an application partition divided into two parts: descriptive and inferential. The software was performed Spss and significance 05, P, t-test and one-way analysis of variance. The results showed that after eight weeks of aerobic training and roping, in all three groups, were associated with increasing salivary cortisol level after the test, however, at the post-test stress levels it had been decreased. This decreasing in the control group was lower than the other two groups. The results showed that there is a significant difference between three groups. Although, two aerobic and rope training groups had not any differences on salivary cortisol and also, stress levels of girls with 7 to 10 years old. Therefore, according to the children’s interests, it can be used for customizing any of these exercises.

Keywords: Stress, Salivary Cortisol, Aerobic Training, Rope training

Cleft lip and palate management

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Cleft lip and/or palate is one the most common head and neck malformations. These defects can vary from mild to severe types. These malformations are not usually life threatening unless syndromic types. But effects on speech, appearance, cognition and psychosocial can have long lasting adverse outcomes on the child’s and his families live. The clinical features are obvious defects in lip and palate, hypernasality, swallowing problems with nasal regurgitation, congenital missing teeth in the cleft side, peg shaped teeth, delayed eruption of permanent teeth, hypoplasia in the incisors, enamel defects and maxillary deficency. The complexity of these problems needs a multidisciplinary approach for their management. One of the health care providers are orthodontists, pedodontists and prosthodontists. The pedodontist has the responsibility of dental maintenance of the cleft patient. The orthodontist has a major role in teeth
alignment. The maxillofacial prosthodontist replaces, restores structures that may have been missing or malformed. They fabricate prosthetic appliances to rehabilitate mastication, deglutition, speech and esthetic. In summary, dentists have a key role in rehabilitation of cleft lip and/or palate children.

**Keywords:** Cleft Lip, Cleft Palate, Dentist, Prosthodontist, Orthodontist, Pedodontist

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**Palliative Care in Pediatric Oncology: Spiritual and Psychosocial Interventions**

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**Introduction:** Children and adolescents with cancer and their families need access to psychosocial and spiritual support and intervention at the time of diagnosis, taking treatment (chemotherapy, surgery or other painful treatments) and end of life. Fundings research indicate that most of the youths with childhood cancer and their parents will experience significant psychological distress all over the course of their illness. According to literature, spiritual and psychosocial support is beneficial in decreasing symptoms of distress in these families, special in the end of life. Objectives: To provide a review assessing the efficacy of palliative care in spiritual and psychological dimensions for support of children with cancer and their families.

**Methods:** Searches of the following databases were conducted for relevant randomized controlled trials (RCTs); Pubmed; PsycINFO; and Web of Science. To study a systematic review of pediatric and adolescent palliative cancer care literature from 1996 to 2016 using four databases to inform the development of a palliative care psychosocial standard.

**Results:** Revealed topics of urgent consideration include the following: symptom assessment and intervention, direct patient report, effective communication, and shared decision-making. Standardization of palliative care assessments and interventions in pediatric oncology has the potential to foster improved quality of care children and adolescents with cancer and their family members.

**Conclusion:** Many of psychological intervention such as cognitive behavior therapy (CBT), externalization of emotions, decision making, setting goals, and pain management were popular as a psychological dimension of palliative care. Patients who were under these interventions reported a high level of quality of life in compared to controls. By the way, spirituality education (proportional to age) is important for these children with lots of questions in the mind.

**Keywords:** Children with Cancer; Palliative Care; Spirituality; Psychological Intervention; Quality Of Life

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**Explanation of Iranian parents’ concerns regarding their adolescents’ growth characteristics: A qualitative study**

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**Background:** One of the distinctive features of the transition into adolescence is an enormous pace in growth and changes in body composition. Nowadays, parents’ concerns regarding their adolescents’ growth in terms of height and weight may have an influence on adolescents’ sexual and reproductive health through social-psychological consequences. However, as no concept related to this phenomenon exists in the context of Iran cultural transition into modernity, the present qualitative research aimed to explain Iranian parents’ concerns regarding the growth characteristics of their adolescents to fill the gap in the literature.

**Methods:** This article is the part of a larger qualitative study using constructivist grounded theory that describes the concepts of parents’ concerns regarding their adolescents’ growth characteristics. Intensive qualitative interviews were conducted with 11 parents with adolescent children individually who had been recruited with purposeful and theoretical sampling. The samples had maximum variation and were chosen from a teaching hospital, community and one of the primary schools in Tehran. Transcripts were analyzed using Charmaz’s analysis approach (2014).

**Findings:** Focused code of “living with the constant sense of insecurity” emerged by an inferential leap from the subcategories including “feeling existing and potential concerned about the minimum and maximum growth characteristics”, “feeling concerned about the biological health consequences”, “feeling potential concerned about the emergence of early/late maturity signs”, “feeling potential concerned about adolescent’s emotional threat”, “feeling concerned about future employment, education, marriage, and fertility” and “feeling potential concerned about the view of community”.

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Conclusion: In this study, parents lived with the constant sense of insecurity about their adolescent’s growth characteristics during the transition into adulthood. Reproductive health and social science professionals can be involved in the management of parent’s concerns and the transition from childhood to adulthood successfully by understanding these concerns.
Nursing

Pediatric Nurse Practitioner as a necessity in Iranian transformational change in health system

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Pediatric nurse practitioner (PNPs) is a very important necessity in Iranian nursing in line of transformational change in Iranian health system. This group of nurses would be able to serve patients and communities across the country in an effective cost-benefit effort. According to the deputy minister in nursing’ strategic directions, Iranian nursing is going to enter to the new paradigm or delivery nursing care with development of advance practice nursing, meaning that there could be many opportunities available for nurses interested in advanced practice field in pediatric and neonatal critical care. Pediatric nurse practitioners can provide compassionate and high quality care to children of all ages, ranging from birth up to the age of adolescent.
They can work in a variety of settings, including health care clinics and physician offices, and help prevent disease, promote health, and educate family members on plans of care. Specific services they may provide include: Childhood immunizations, Developmental screenings, Medication prescriptions in some instances, depending upon law, School physicals, Treatment of common illnesses, Well-child exams. They work hand-in-hand with pediatricians and other healthcare providers. Patient advocacy is an area in which pediatric Nurse practitioners should work. In fact, the PNP essentially “fills” the role that falls between that of a nurse and the pediatrician and, in a pediatrician’s office, can see and treat children by themselves, without supervision, or, when warranted, turn to a pediatrician for further assistance. PNPs also might conduct home visits, and because of their graduate-level education, be involved in research or take on leadership roles to affect public policy.
All in all, it seems that idea of training PNPs should be taken into consideration in our country, and its curriculum with respect to the needs of country should be designed.
Keywords: Health System, Pediatric

Promoting spiritual health in adolescence

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Background: With the rapid physical, emotional, cognitive and social changes typical to it, adolescence is one of the most sensitive periods of human life and a major development stage considered critical and high-risk. The risks that threaten adolescents include health-related problems such as anxiety and depression. These risks show the need for the performance of early interventions and for taking preventive measures during this period. It is therefore highly important to identify and promote the factors affecting adolescents' health in order to ensure the efficacy of their target health-promoting interventions.
One of these factors is spiritual health. Spiritual health is composed of two terms “spiritual” and “health” and reflects the extent to which people live in harmony within relationships with oneself (personal), others (communal), nature (environment), and God (or transcendental other).
There are many ways to promote spiritual health. One of the best ways to promote this concept is the use of models. Reed's Self-Transcendence model, by using concepts such as “self-transcendence”, “hope” and “coping”, and make appropriate interventions in adolescents, can improve spiritual health and then adolescents' health.
Because spiritual health is one of the aspects of health and nurses are health care providers in the community, thus promoting spiritual health, is part of the nursing tasks.
Keywords: Spiritual, Health

Spiritual health consequences in adolescents

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Background: Adolescence is the most important and most valuable of person's life. Adolescent health of a nation is not only inherently important but also as an index for the health of any country. In order to improve the health of individuals and society, in addition to physical, mental and social health, it should also be attentive to the spiritual dimension.
Methods: In the present review, the initial search was performed in national and international databases, including Science Direct, PubMed, Google Scholar, Scopus, SID, Magiran, using the keyword "spirituality, spiritual well- being and adolescent", in the years 2000-2016. Articles relevant to the objectives of the study were included then fully reviewed.
Results: There is a significant correlation between spiritual health and different dimensions of health (physical and psychosocial). Studies have shown spirituality reduce tend to risky behaviors and increase the power to overcome emotional and psychological events and create a feeling of happiness, security, resilience, optimism in stressful situations, coping
and stress management, self-esteem, reduce anxiety and depression, and the higher satisfaction in life. Because of development of cognitive development during this period, spiritual health is helpful in obtaining the identity of the adolescent. Spiritual health improves self-efficacy and academic achievement. Another consequence of the spiritual health is Hope and improve quality of life. The final outcome spiritual health is Transcendence and the spiritual growth.

Conclusion: By creating a proper context for comprehensive health of adolescents, we can provide preparations community health in the future. According to the spiritual health of adolescents can be effective in developing health promotion programs, identification of adolescents and successful transition from adolescence.

Keywords: Adolescence, Spiritual health

Models of Palliative Care Delivery in Cancer

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Palliative care can be delivered in general to patients with terminal diseases like cancer. There are many models of palliative care delivery but all these models are placed into three main categories. In other words, the supportive and palliative care delivery program consists of three main structures, including “hospital based palliative care programs”, “non-hospital palliative care services” and “hospice model of palliative care”.

All of hospital based models developed to improve physical, psychosocial, and spiritual suffering of patients and families who are hospitalized with serious illnesses. Non-hospital models provided important continuity of care for patients who are discharged from the hospital after being seen by an inpatient palliative care consultation service and hospice models designed to provide comprehensive interdisciplinary team-based palliative care for patients with life-limiting illness with a prognosis of six months or less if the disease follows its natural course.

The models of palliative care should integrate specialist expertise with primary and community care services and enable transitions across multiple settings. However, the aims of all palliative care delivery models are improving the level of quality of life in patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

Keywords: Care, Cancer

The Principles of Nursing Care in Cancer Symptom Management

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Background: In addition to diagnosing and managing the cancer, the nurse’s duty is also to recognize and effectively manage the many associated symptoms. Nurses can do a better job of palliating symptoms and improving the quality of life of cancer patients if they understand the principles of symptom management. We review the general principles of symptom management in cancer patient.

CONTENT: Patients with advanced cancer typically suffer from multiple concurrent symptoms, which they rate as moderate or severe. Prevalence rates of various symptoms are approximately: Pain 89%, Fatigue 69%, Weakness 66%, Anorexia 66%, ... . The principles of symptom management include assessment, nursing guideline, intervention, reassess and follow up. Access to evidence-based resources is especially important for nurses. Evidence-based, standardized tools for nurses to use in the assessment and management of symptoms in patients with cancer have potential to improve patient outcomes. The use of clinical practice guidelines and protocols in nursing are interventions for facilitating use of best practices and optimal clinical interventions and It’s very important that every intervention is not appropriate for every patient. Thus, effective cancer symptom management by nurses has been shown to decrease symptom severity, improve quality of life, and lower health service use.

RESULT: Cancer symptom management is an essential component of nursing care that leads to improved outcomes for individuals with cancer and it depended on education and training course for nurses. Which nurses are used depends on the stage of the disease, the available disease modifying treatments, and the patient’s condition and preferences.

Keywords: Cancer Symptom Management, care

Effect of ostomy care to improve the quality of life of patients with colorectal surgery

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Background: Colorectal cancer is the third most common cancer in men after prostate and lung cancer and the third most common cancer in women after breast cancer and lung. About three million people worldwide live with colorectal cancer. This age-related disease by as much as seven hundred thousand cases per year in the fourth most common cancer in Iran. In these patients after diagnosis, the first line of
treatment is surgery to remove the tumor and embedded Ostomy. Ostomy actually diverting bowel movements through a Abdominal aperture to the outside. More than a million people in America and 102 thousand people in the UK have ostomy, enteral. In Iran, about 30 thousand patients have ostomy.

Methods: This article Review Article, which is the type of search in browsers Scholar Google ... Pub med prestigious world magazines is provided.

Results: The purpose of ostomy, alleviate the suffering of the patient’s disease is due to the fact that people who are undergoing ostomy surgery in all aspects of their quality of life are not considered and no research has been done in this field in Iran. The present study was carried out to explore the concept caring self-efficacy by pediatric nurses. Methods: This study was conducted through content analysis and from a qualitative approach in 2015 in Iran. 27 nurses in pediatric wards and pediatric clinical instructors participated in this research according to the purposive sampling employed in the study. Data was collected through semi-structured interviews. The collected data was analyzed using conventional content analysis method. Results: Management of care process, communicational ability, Altruism, Proficiency, Antecedent of caring self-efficacy and consequent of caring self-efficacy were extracted main themes as of caring self-efficacy in this study. Conclusions: Results indicated that management of care process, communicational ability, and altruism, proficiency Antecedent of caring self-efficacy and consequent of caring self-efficacy were more important dimension of caring self efficacy in pediatric nurses. These results can be used by nursing managers and instructors to help develop empowerment and efficacy of nurses, especially in pediatric care.

Keywords: Caring self-efficacy, Pediatric wards, Nurses

Mothers’ Strategies in Handling the Prematurely Born Infant: a Qualitative Study

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Background: Family, especially mother, is faced with numerous challenges by experiencing a premature birth. Since knowing about mother’s efforts regarding prematurely born infant helps us in our comprehensive understanding of the impact of this incident on the family system and its performance. The present study was carried out to explore the mothers’ strategies regarding prematurely born infant.

Methods: In a conventional qualitative content analysis, data was collected through purposive sampling by semi-structured deep interviews with 18 mothers who had prematurely born infant during 2012-2013 in the teaching hospitals of the north and northwest of Iran. All the interviews were recorded, typed, and finally analyzed.

Results: Data analysis resulted in the extraction of categories of “asking for help, elevating capacity and reducing personal responsibilities and commitments”. These categories were revealed in mothers respectively by the different sub-categories of “religious appeal and relying on beliefs, seeking

Exploring caring self-efficacy concept from Iranian nurses perspective in Pediatric wards: A qualitative study

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Caring is the core concept of nursing performance. Among the factors affecting nursing performance, self-efficacy has been expected to have the greatest influence on nursing performance. However, the concept caring self-efficacy was not considered and no research has been done in this field in Iran. This study was conducted to explore the concept caring

Keywords: Caring self-efficacy, Pediatric wards, Nurses
information from the treatment and caring team, participating in infant’s care, companionship and support of family and friends”, “focusing on positive thinking and imagination, patience and strength “ and “ignoring some routine affairs and reducing role-related activities and duties”. Conclusion: Considering the uniqueness of the mother’s role in responding to the needs of infants, healthcare system should consider mothers as real target in the intervention strategies in order to promote health and quality of life, so maybe this way, the burden of care and management of critical situations caused by a premature birth on the mother can be reduced

Keywords: Premature Infant, Mothers, Qualitative study

The pattern of Self-medication and non-prescription drugs use in children less than 17 years

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Background: One of The main users of health services in most countries are children, and their pattern of illness is reflected in medication use. This use, in turn, can be excessive due to self-medication. Use of nonprescription drugs is widespread all over the world as a first course of action for a range of childhood complaints. Inappropriate treatment of illness and symptoms can lead to unnecessary medication use and possible adverse effects in children. The aim was to investigate the pattern of Self-medication and nonprescription drugs use among children.

Methods: This cross-sectional descriptive- analytic study was carried out in pediatric outpatient clinics from October1 to March 29, 2015. Subjects of this study were 425 children ≤17 years who were selected by convenience sampling method. Inclusion criteria were age ≤17 years, the presence of a parent or legal guardian at the time of the study and history of medication during the last 6 months. Self-medication was defined as the use of medicines that had either been bought over the counter or obtained from other sources. Data were collected by questionnaires completed by parents. All statistical analyses were performed using SPSS statistical software. In order to data analysis descriptive & Analytic statistics such as frequency, mean and standard deviation and Chi-square was used. A probability level of P < 0.05 was considered statistically significant.

Findings: 88% of caregivers were mothers. 72% of the samples were living in urban areas and 86% were covered by health insurance. 62% of the samples had a history of self-medication and non-prescription drugs. Most Self-medication cases were in the age 3-5 group. Only 32% of parents reported that their Self-medication improve children's disease and have a good outcomes. Based on results fever and cold symptoms (Runny nose, nasal congestion and cough) were the most common health problems in children for Self-medication. Acetaminophen (89%) and cold compounds (53%) were the most commonly administered over-the-counter medications. According to parents too much medication prescribed by a physician, previous history of similar disease and being familiar with how to treat it were the most common causes of Self-medication in children.

Conclusion: The pattern of Self-medication and non-prescription drugs use, indicating the need for educational programs aiming at the awareness of parents regarding rational use

Keywords: Self-medication, non-prescription drugs, children, parents

Effects of family-centered care on the satisfaction of parents of children hospitalized in pediatric wards in a pediatric ward in Chaloos

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Background: Family-centered care (FCC) involves holistic care and requires cooperation with the family in planning, intervention, and the evolution of the care that is being provided. Many previous studies have provided results that indicate the importance of the family’s involvement in pediatric care, but there is still resistance in doing so within the organizational culture of the hospitals in Iran. The aim of this study was to determine the effects of FCC on the satisfaction of parents of children hospitalized in 2012 in the pediatric ward at Razi Hospital in Chaloos, Iran.

Methods: This Quasi-experimental study was conducted in 2013 in the pediatric ward at Razi Hospital in Chaloos, Iran. Seventy hospitalized children between the ages of 1 and 3 who suffered from diarrhea, vomiting, or pneumonia were selected through convenience sampling. They were divided randomly into two equal groups, a control group (routine care) and an
Comparison of Master's curriculum of pediatric nursing in Iran and United states

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Background: The purpose of most of the nursing programs is to graduate nurses who can make positive changes in the healthcare system. Comparing different educational systems may lead to the improvement in the content and quality of curriculum and considering successful curriculum around the world can establish an efficient system. This study aimed at comparing the MS curriculum in pediatric nursing in Iran and USA resulting in practical suggestions for improving the curriculum. Method: This descriptive, analytical study was carried out in 2015. After searching the network on the master curriculum of pediatric nursing in well-known international universities, we selected John Hopkins University due to relative similarities between two courses. Both curriculums were assessed in terms of their philosophy, goals, content, and their weak, and strong points. Results: Iran Master’s curriculum of pediatric nursing has distinctive philosophy, values, position, and career duties. The required qualification to enter the course is included having a Bachelor’s of Science degree in nursing and passing the test. In the United States interview and presenting the scores, CV, and working licensure were essential as well. Pediatric nursing course is delivered during 4 semesters in Iran. In the curriculum of the USA it is also possible to pass the course as part-time. The content of both curriculums were similar.

Conclusion: The new pediatric nursing master’s curriculum in Iran has many strong points regarding its clinical nature. Considering the volunteers’ carrier records, interviewing participants in terms of their psychological qualification before entering the course and also delivering the course as a part-time program could be worthwhile.

Keywords: Curriculum, pediatric nursing, master of science

The effect of breast milk odor on first breast feeding time and weight gain in premature infants

Batool Pouraboli, Atefeh Shamsi, Sedigheh Iranmanesh

This study examines the effect of breast milk odor on the first breast feeding time and weight gain in premature infants. This experimental study was conducted on 92 premature infants less than 33 weeks of age. There were 46 infants in the control group and 46 infants in the intervention group. The study was conducted at two neonatal intensive care and premature units of a university hospital in northern Iran from April 6 to September 2013. The study was conducted over a four and a half month period. Demographic profiles were extracted from the infant’s medical records. A checklist of recorded data from the same study was made available. Prior to initiating the research, we received the necessary approval from relevant organizations. Parental permission was obtained by signing a consent form. A pad impregnated with the mother’s milk and olfactory stimulation of premature infants with this pad reduced the first breast feeding duration. The mother’s breast sucking was more effective and initiated over a shorter time in the intervention group compared to the control group. Olfactory stimulation of breast milk odor influenced strengthening feeding competence of infants and reduced the duration of time for the first breast feeding.

Keywords: Breast Milk Smell, Premature Infants, First Breast Feeding Time, Weight Gain

Parents’ awareness and hospitalizations of children with nephrotic syndrome

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Background: The long trend of nephrotic syndrome recurrence with frequent hospitalizations of the children is causing discomfort of the children and their parents. This research has been done to determine the Parents’ awareness and hospitalizations of children with nephrotic syndrome.
Methods: This study is a review article, which the English websites including PubMed, Google Scholar, Wiley and Elsevier and Persian includes Mag Iran and ISD and Iran Medex was used. About 60 studies were extracted in the initial search. But considering to importance of the issue in this direction, Overall 40 relevant studies were used.

Results: International studies show that every year 2-7 new cases of primary nephrotic syndrome occurs every hundred thousand children under 16 years old and its collective prevalence are 15.7 percent in every hundred thousand children. The disease most seen in childhood in boys (boy to girl ratio is 2 to 1), but at puberty the ratio is equal in both sexes. About children with nephrotic syndrome recurrence rate is very high to the extent that after the first relapse, the rates are 30% to 40%. Some of children with nephrotic syndrome are involved recurrence 1 to 3 times per year. (p=0.01) In this regard, the results of study showed that after education to parents about this disease and its recurrence in all three levels of parental awareness is (favorable, relatively favorable and unfavorable) a significant difference ( p<0.001).

Conclusion: According to the results of this study most of the parents had not been good awareness about the symptoms of the nephrotic syndrome and Children Need for repeated hospitalization. Thus, with the necessary cares education to families in this context can to prevent from repeated hospitalization that leads to health costs increasing for families and as well for Medical institutions.

Keywords: Nephrotic Syndrome, Awareness, Hospitalizations, Children, Parents

Comparison the effect of limb massage and KMC on reduce of venipuncture pain in neonates

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Background: Procedural pain can cause short-and long-term effects in infants. It is imperative for nurses to prevent pain in neonates. Evidence exists supporting the benefits of neonatal massage And KMC to increase neonatal physical and mental development, reducing pain, and enhancing immune function.

Goal: The aim of this study is Comparison the effect of limb massage and KMC on reduce of venipuncture pain in neonates.

Methods: A total of 66 preterm infants (34-36 weeks) who met criteria participated and were randomly assigned to 3 groups. Massage, KMC and control group. Neonates in massage group received stroking technique of massage 15 min before venipuncture on the target limb. In KMC group, neonates was held in KMC during venepuncture. For measurement the score of pain, NIPS was used during venipuncture. Data analyzed with SPSS software using t-test.

Result: The findings of the present study indicated that in massage group the mean pain score was (1.2) & in KMC group was (1.6) & in control group was (6.7). Results showed there is no significant differences between massage & KMC group.

Conclusion: This methods is suggested in pain management and when we haven’t enough time, we can use KMC instead massage.

Keywords: Massage, KMC, Venipuncture Pain, Neonates

Evaluation of the effect of narrative writing on the stress sources of the parents of preterm neonates admitted to the NICU

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Background: identification of the nurses’ and families’ understanding of the stresses in the facilitates nursing interventions and increases parental satisfaction.

Methods: The quasi experimental study with pretest and posttest was administered to a sample size of 70 mothers with preterm neonates hospitalized in the NICUs of two teaching hospitals of Tehran University of Medical during 6 months. The Parental Stressor Scale (PSS) was used. The data were analyzed using descriptive and analytical statistical methods.

Findings: Evaluation of the differences in the domains of the questionnaire between the 3rd and 10th day of admission using a multivariate analysis showed that narrative writing had significant effects on all three domains (Roys’s largest root=2.141, F=47.11, p-value<0.001). The results showed that the highest stress reduction was observed in Infant Behavior and Appearance (-11.847) followed by Sights and Sounds of the Unit (-11.352) while the lowest stress reduction was observed in the Parental Role Alterations (-6.149) in the intervention group, while the control mothers experienced a stress increase in all domains.

Conclusion: According to the findings, narrative writing may be considered an efficient supportive intervention to reduce the maternal stress Infant behavior and appearance in the NICUs. However, more research is needed to justify its implementation.
Paternal skin-to-skin care and its effect on cortisol levels of the infants

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Background: Neonatal period is one of the most critical phases of human life and intensive care unit is a stressful environment for the infant and it will be under the pressure of factors such as noise, nursing intervention, and harsh light, the most important is separation from parents. This study aimed to achieve the results of the effect of skin-to-skin care by father on the salivary cortisol in infants.

Methods: This study is a randomized clinical trial on premature infants and their fathers in NICU of Tabriz Alzahra Teaching Hospital conducted in November 2015. The control group received standard care and the intervention group did 45 minutes of skin to skin care. Saliva samples were collected from infants before, during, and after this study to measure the cortisol level. The statistical software SPSS 21 was used to analyze the data with the significant level of \( p < 0.05 \) in this study.

Findings: 45 neonates along with their fathers took part in this study. The infants had a mean gestational age of control group 31 weeks (s.d = 2.31) and intervention group a mean 32 weeks (s.d = 2.73). Salivary cortisol in babies in the control groups (\( p=0.96 \)) and intervention group (\( p=0.56 \)) that both groups were not statistically significant.

Conclusion: both groups showed decreasing cortisol levels during the study, the reduction in the skin-to-skin care group was more than in the control group, with no significant difference between these two groups. Thus, making it possible for fathers to take care of their infants may be effective, helpful, and secure.

Keywords: skin to skin care, stress, cortisol, premature

Determine the failure to thrive prevalence in children with chronic kidney disease in Hazrat Ali Asghar Hospital

Parnian ahmadvand, Fahimeh Soheilipour, Nakisa Hooman

Background: Determining the failure to thrive prevalence in children with chronic kidney disease Doctor Parnian Ahmadvand Doctor Hooman. Doctor Soheilli pour

Aim: The current study aims to determine the failure to thrive prevalence in children with chronic kidney disease in Hazrat Ali Asghar Hospital Tools and Methods: The study was descriptive and cross-sectional, the population consist of 113 children between 2 to 16 years old with chronic kidney disease who came to Hazrat Ali Asghar hospital in late one year. The entrance criteria were those who during a month before coming there, didn’t get sick and had no other disease except CKD. The independent variables were age, sex, family history and the age of beginning of CKD. Dependent variables were body mass index, height, weight, mid upper arm circumference, the thickness of skin wrinkle - Gomez index and failure to thrive (FTT) and the intensity and types of FTT. Information has been gathered as a check list and statistics analysis has been done by SPSS version 18. Results: 113 children were examined. The mean and SD were 7.2 ± 4.4 (median 6.0) years old. 43.4% female and 56.6% were male. The average of age of started disease was 4.3±3.3 (median 3.0). The mean of serum creatinine was 3.7±3.1 (median 2.7), and the mean of GFR was 36.6±34.3 (median 24.0). 46.4% of them didn’t have FTT and 12.4% had mild FTT, 30.1% had moderate FTT and 11.5% had severe FTT. A meaningful relationship was observed between FTT and GFR (p=0.0001). And among a groups of children didn’t have FTT, GFR was higher. There was also a meaningful relationship between Creatinine and FTT (p=0.0001) and among a groups of children who didn’t have FTT, Creatinine was lower. The meaningful relationship between gender, age, and started of disease with FTT was not observed (p=0.05). Conclusion: The results of the current study showed that half of the children with CKD had different degrees of growth retardation that had relation with GFR and serum creatinine and it is observed more than in lower ages.

Keywords: Failure to Thrive, Chronic Kidney Disease, Children, Glomerular Filtration Rate

The Use Of HBM In Determining The Factors Affecting Growth Retardation Children Aged 3-6 Referred To Semnan Health Centers.

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Background: Introduction: Failure to thrive (FTT) is used to illustrate stopped growing or a delay in a child growth. It may lead to more serious complications such as mortality, reduced learning and mental, emotional or physical disabilities. This study aimed to determine the causes of growth disorders among 3-6 years old children covered by health centers of Semnan.
Methods: This is a descriptive-analytical study which was conducted in Semnan in 2014.200 children 3 to 6 years of age who referred to health centers were selected and studied through stratified and random sampling in two groups of healthy group and group with failure to thrive. Mothers completed two questionnaires containing demographic and comprehensive information on the child feeding methods (CFPQ). By using CFPQ, child feeding method was evaluated from 12 aspects. SPSS software (version 18) was used for statistical analysis of data.

Findings: 200 children were studied as participants. 51.2% were female and 48.8% were male. The majority of them aged between 4-5 years old. Considering birth rank, all of children were of first birth. Majority of mothers (78.2%) were housewives, and majority of fathers were self-employed. There was a significant difference between the groups considering mothers’ level of education and failure to thrive (p<0.05). There was also a significant difference between household’s income and failure to thrive between the groups (p<0.05). There was a significant difference between the groups considering model constructs such as perceived intensity (p=0.02%), perceived benefits (0.011%) and self-efficacy (0.01%).

Conclusion: The results of this study showed that there is a significant association between social factors and failure to thrive.

Keywords: Failure to thrive, Children, Health centers, Health Belief Model

The Effect of super brain yoga on children with autism disorder

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Background: Autism is generally known as cerebral neural development disorder among children accompany with behavioral disorders like learning problems, anxiety, depression, amnesia, nutritional issues and self-abuse. Complementary medicine therapy as a new attitude toward autism treatment is common. So this study with the aim of determining the effect of super brain yoga on children with autism disorder was accomplished.

Method: This quasi-experimental study was done on 80 children with autism, in the healing Clinics of the Arak University of Medical Sciences, in 2 groups: experimental group (even number of admissions) and control group (odd number of admissions), with applying convenience sampling method. In addition to the routine treatment in the experimental group, the intervention done for theoretical and practical training of the super brain yoga, for the children and their parents. And then do the exercises by children on a daily basis was a month for two minutes. The data gathering tools were demographic questionnaire and Gilliam Autism Rating Scale (GARS) which were filled before and after intervention. Data analysis was done by using SPSS version 20, descriptive statistics, paired t-test and independent t-test at the significant level of (p<0.05).

Results: Two groups were similar based on demographic data (p≥0.05). Before intervention there was no significant difference between the mean scores of severity of autism into two groups, but after intervention there was a significant difference between the mean scores of severity of autism into two groups (p<0.0001). There was no significant difference between the mean scores of severity of autism in test group before and after intervention, but there was a significant difference between the mean scores of severity of autism in intervention group before and after intervention (p<0.0001).

Conclusion: The exercises of super brain yoga by children caused to decrease autism signs among them.

Keywords: Autism, Children, super brain yoga

Effect of Orientation Program on Mother’s satisfaction in NICU

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Background: Mothers of neonates admitted to neonatal intensive care units (NICUs) have certain physical, emotional, and information needs, which can affect the mother’s physical and mental health and disrupt the balance between mothers and neonates if remained unsatisfied. On the other hand, the satisfaction of mothers with NICU infants reflects the high quality of nursing services. The aim of this study was to evaluate the effectiveness of orientation program on maternal state satisfaction that have newborns hospitalized in NICU.

Methods: This research was a randomized clinical trial, which was carried out on 60 mothers with term and preterm (over 36 weeks) neonates hospitalized in the NICU of Babol Amirkola Children’s Hospital in 2015. Samples divided by consecutive sampling method and randomized to two intervention and control groups (n=30 in each group. The program for orienting mothers with the NICU environment was a behavioral training program, which was running 20 minutes a day for 5 consecutive days to orientate mothers with neonatal intensive
care units, neonatal equipment, medical care and treatment processes, and personnel duties. At the end of the orientation program, levels of satisfaction were measured using the NICU care parent satisfaction questionnaire (Likert scale). Data analysis was performed using the sample t-test and t-test statistical test methods. Findings: The findings showed that the mean score of satisfaction in the mothers’ intervention group were 130.53 ±14.14 and in the mothers’ control group were 60 ± 11.83 after five days (p<0.00). Conclusion: The program for orienting mothers with the NICU environment improves the satisfaction of mothers with hospitalized newborn.

**Keywords:** orientation, satisfaction, neonate, neonatal intensive care unit

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**Background:** To evaluate the results of urodynamic studies of children with history of neuropathic bladder, vesicoureteral reflux and dysfunctional voiding.

**Methods & Findings:** 6420 children were included which consisted of 1440 children who had neuropathic bladders (myelomeningocele, anorectal malformations and sacral agenesis), 360 children who had posterior urethral valve, 1361 with primary vesicoureteral reflux, and 3259 children with history of dysfunctional voiding.

Mean age of patients was 18 months (range: 10 days-13 years). 1214 were female and others were male.

**Conclusion:** Urodynamic study is a useful tool to evaluate the function, capacity, and activity of bladder indifferent groups of children. Patience of the urodynamic nurses and experience of working with small children are often rewarding.

**Keyword:** drug, urodynamic study

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**The pattern of Self-medication and non-prescription drugs use in children less than 17 years**

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Nasrin Navabi

**Background:** One of the main users of health services in most countries are children, and their pattern of illness is reflected in medication use. This use, in turn, can be excessive due to self-medication. Use of nonprescription drugs is widespread all over the world as a first course of action for a range of childhood complaints. Inappropriate treatment of illness and symptoms can lead to unnecessary medication use and possible adverse effects in children. The aim was to investigate the pattern of Self-medication and nonprescription drugs use among children.

**Methods:** This cross-sectional descriptive-analytic study was carried out in pediatric outpatient clinics from October 1 to March 29, 2015. Subjects of this study were 425 children ≤17 years who were selected by convenience sampling method. Inclusion criteria were age ≤17 years, the presence of a parent or legal guardian at the time of the study and history of medication during the last 6 months. Self-medication was defined as the use of medicines that had either been bought over the counter or obtained from other sources. Data were collected by questionnaires completed by parents. All statistical analyses were performed using SPSS statistical software. In order to data analysis descriptive & Analytic statistics such as frequency, mean and standard deviation and Chi-square was used. A probability level of \( P < 0.05 \) was considered statistically significant.

**Findings:** 88% of caregivers were mothers. 72% of the samples were living in urban areas and 86% were covered by health insurance. 62% of the samples had a history of self-medication and non-prescription drugs. Most Self-medication cases were in the age 3-5 group. Only 32% of parents reported that their Self-medication improve children’s disease and have a good outcomes. Based on results fever and cold symptoms (Runny nose, nasal congestion and cough) were the most common health problems in children for Self-medications. Acetaminophen (89%) and cold compounds (53%) were the most commonly administered over-the-counter medications.

According to parents too much medication prescribed by a physician, previous history of similar disease and being familiar with how to treat it were the most common causes of Self-medication in children.

**Conclusion:** The pattern of Self-medication and non-prescription drugs use, indicating the need for educational programs aiming at the awareness of parents regarding rational use.

**Keywords:** Parents, Drug, Children, Self-medication, non-prescription drugs

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**Study of obstacles of performance the family _ directed care from doctor’s and nurse’s point of view in Bojnourd NICU, 2016**

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**Background:** Family is the most important part of a society and the main core of care. In fact, family _ directed care is recognition of the family influence in life. In family _ directed care nurses and hygienic _ therapeutic team members make the
family powerful and puissant by predispose and make opportunities for every family member. Family directed cares turn the parents from inactive status to active status. Therefor the present study was performed by the aim of obstacles determination from implementation of the family directed care from the doctors and nurse’s point of view in the Bojnourd Bentahoda hospital NICU.

Methods: In this study 20 nurses and 5 doctors whom work in Bentahoda hospital NICU have been asked about obstacles implementation of the family directed care in order to performance from doctor’s and nurse’s point of view. After data compilation, priorities listed.

Findings: From the doctor’s point of view the most important obstacle is lack of space and facilities for physical examination. From the nurse’s point of view lack of space and facilities in NICU, intrefer of family directed care with nurses task, parents fear, family disinclination, family combersomeness and nurses disagreement for caring based on family directed care.

Conclusion: according to the results of this study family directed care needs the attention of the policy maker in neonatal caring and attention to the obstacles implementations caring according to the culture of that era in each hospital and planning for eliminate these obstacles is necessary.

Keywords: Family Directed Care, Family , Parents ,NICU

An interactive supplementary course to traditional education; An Experience in International Education in Virtual Environment as a Case Report in Iran

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Today the advent of information and communication technology and its applications have created a rapid change in the world and especially in educational systems. This trend has also created a bed for intelligent interactive learning, self-motivation, self-orientation and innovation of learners in parallel to their traditional learning. This paper aims to introduce an international learning experience in virtual environment, especially in the field of neonatal intensive care, with a professional approach to the application of this experience to facilitate education among learners and teachers to fit e-learning around their traditional learning. In order to promote the standards of learning, a total of 100 neonatal intensive care nurses and master graduated students of medical universities along with other groups in eight Asian countries were offered a program held under the supervision of the World Health Organization, in 2 courses in the period from May 2011 to May 2012, and each course lasted for 5 weeks. Two discussions were held every week in the field of clinical skills training in the different form by conducting training tutors including Pediatrics Excellent doctors. To complete the course local authorities decided to add traditional teaching to the course to get the best result. The participants were evaluated by online pre-tests, midterm-tests, post-test and observed structured clinical examinations (OSCE) in every country. Finally, the effectiveness of the method was presented in the following results. The effective use of Information Technology (IT) in education and work process in virtual environment in addition to face-to-face teaching system requires learners to play new roles in new fields. Hence, the virtual education with the help of traditional


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Background: Science the screening of all children is difficult. It’s logical to evaluate the children with high risk. One of the risk factors is history of prematurity. This essay’s goal is studying the Association Maternal Factors with Developmental State of One- year-old children with the History of prematurity at the first year of birth.

Methods: 120 children with the history of under 37 weeks birth are studied in age of one by mothers in five domains (communication, fine and sturdy movements, sociopersonal, problemsolving) and maternal factors of development state by filling researcher made questionnaire in 1 domains (Maternal factors) from the child file and asking mother to fill it. The data was analyzed by SPSS17 soft ware and mean index standard deviation, frequency – percent, independed T-test, Pearson correlation, liner regression and one way ANOVA.

Findings: The results of this study showed a significant association between some grades of developmental state of ASQ Questionnaire with variables of (Maternal Factors) in cause of sac tear and Mother’s level education(P<0.05).

Conclusions: The results of this study shows that the preterm infants are expose to the risk of development problems. So it’s needed to regular follow up their development state after hospital discharge to on time diagnose and intervention to prevent the development problems.

Keywords: Developmentalal, One – year – old children, Prematurity
The effect of Education before ambulatory surgery on the ability of parents to care of children at home

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Background: Hospitalization time after ambulatory surgery is short and after discharge parents are responsible for care of children at home, so training is essential to their empowerment in this regard. Therefore, this study was performed with the aim of determination the effectiveness of Education before ambulatory surgery on the ability of parents to care of children at home.

Methods: In this clinical trial study, 68 children 6 to 12 years admitted for tonsillectomy with one parent were selected and randomly were divided to control and case groups. For case group, intervention was performed by education about control of pain and Complications after tonsillectomy, educational booklet in day before surgery and telephone follow-up in first three days after discharge. Data collecting tools were home dairy that was completed by parents. Data were analyzed with SPSS16 by repeated measures, post-hoc, independent t and Chi-square tests.

Findings: The mean (standard deviation) scores of pain intensity and sleep quality of children in case group respectively were 2.50(1.33) and 4.33(0.94), and in control group respectively were 3.31(1.43) and 4.19(0.87) in the first three days after discharge. There were significant differences between children of case and control groups in scores means of pain intensity (p<0.01), number of fluid intake and appetite (p<0.05), number of analgesic used, used of non-pharmacological pain reduction methods (p<0.001) after discharge. No significant differences were showed between two groups in the other behavioral changes, analgesic side-effects, temperature and quality of sleep.

Conclusion: Education before ambulatory surgery and telephone follow-up in the first three days after discharge, reduced the severity of pain, to increase the frequency of analgesic prescription without side effects, to use more non-pharmacological pain reduction methods, to increase the number of fluid intake and to improve appetite and could empowered the parents to care of children at home.

The knowledge and attitudes of nursing students about prevention of medication errors in pediatric units

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Nurses in pediatrics settings should work hard to develop trusting relationships with the children in their care. There are, however, barriers to these trusting relationships, because nurses are often involved in painful procedures for children, and sometimes parents may hamper the development of trust between nurse and child. The child health nurse is considered to be able to support family in the hospital for the best development of the child’s health. Lack of effective communication often prevent mutual negotiation between families and health professionals, especially nurses. Poor communication and lack of information sharing exacerbate the situation. Where parents do not comply with nurses’ expectations conflict can arise, resulting in more anxiety for already stressed parents. Findings: Current health policy requires that health workers listen to children and their families, to actively involve them in the decision making process and to plan care around their needs and wishes. Nurses need to be aware of the way they interact with parents and the control they may unwittingly exert.

This study is a review and a search in databases Pub Med and Google Scholar and Iranian sources SID and Iran Medex search was conducted from January 2007 to December 2016. All qualitative and mixed-method studies in English and Persian that focus on the importance of the nurse’s role in relation to children and family were included.

The relationship strategies of children’s nurses need exploring further and further research is needed to identify factors that may affect nurse’s relationship role. Several strategies to support nurses’ clinical relationship have been proposed but need testing to ascertain their effectiveness. Healthcare organizations must create time to pay attention that communication to take place between staff and pediatric patients so that children and families feel safe when being treated.

Key words: children nurses- family- relationship
Background : Introduction & aims: Medication errors are a potentially dangerous event for patient safety and Medication errors related to children due to the high incidence of injury needs special attention from care providers. This study was conducted to determine knowledge and attitude of nursing student in about prevention of medication errors in children unit of Training Center - Therapy shahid Motahari in Urmia. Materials and Methods: A descriptive study of 102 nursing students internship in the Pediatrics unit were selected by convenience sampling. Data were collected using two questionnaires made knowledge and attitudes about the prevention of medication errors with the validity and reliability through Cronbach’s alpha coefficient 0.96 and 0.88 respectively. Data analyzed with using of statistical software (SPSS) version 16, using descriptive statistics and parametric. p less than 0.05 was considered significant. Results: According to the findings, 30.4 percent of the samples had good knowledge and 90 percent of students surveyed had a negative attitude to the prevention of medication errors. Their mean were the 17/11 ± 2/55 and 52/42 ± 6/21 respectively. The ratio of the maximum score (27 and 100) were not at an acceptable level. A significant relationship was observed between the average level of knowledge and attitude of participants (p =0/012, r =0/249). Conclusion: Because the moderate level of knowledge and attitude of nursing students, the prevention of medication errors in children needed education planning to promote students’ knowledge. Keywords: Medication Errors, Knowledge, Attitude, Nursing, Children

Challenges of the preceptors working with new nurses: A phenomenological research study

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Background: Preceptors play an important role in the transition of new nurses to the practice setting, however, preceptorship experience has been perceived as stressful by preceptors. This study aimed to explore the lived experiences of nurse preceptors working with new nurses. Methods: This qualitative study used the hermeneutic phenomenological design to explore the experiences of six nurse preceptors working with new nurses in a tertiary pediatric teaching hospital in Northwest of Iran, who were recruited by purposive sampling. Data were collected using in-depth face-to-face individual interviews between July 2014 and March 2015, and analyzed using the Diekelmann's seven-stage method. Methods: Data analysis revealed three themes: 1) preceptorship as a challenging and stressful role; 2) lack of support; and 3) lack of appreciation. Preceptorship as ‘a challenging and stressful role’ was the constitutive pattern that unified the themes. Conclusion: The preceptorship of new nurses is challenging and stressful. Preceptors endure several roles concurrently, thus, their workload should be balanced appropriately in order not to compromise with one another and evade burnout. The preceptors need to be well supported and their contribution be appropriately recognized. Setting clear objectives and realistic expectations, and having clear policies and guidelines in place should help develop a preceptorship program that is more likely to bring about positive outcomes for both preceptors, new nurses, and organizations. Keywords: Preceptorship, Preceptor, New nurses, Phenomenological hermeneutics

Pain reduction in newborn

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Abstract Background: Researches show that newborns can perceive, experience and recall pain. Newborn pain can have short and long-term complications. Regarding the importance of newborn pain relief, this study is done to review researches performed in Iran regarding pain reduction interventions in order to identify the effective interventions and research gap in this area. Methods: This is a literature review in which full text; interventional articles regarding pain relief in newborns were investigated, without time limitation. These articles were accessed using keywords such as Newborn, Pain, relief; through SID, IranMedex, IranDoc and Magiran databases. 53 articles were found and among them 25 articles met the inclusion criteria. Results: Samples were between 20 to 220 term or preterm newborns and studies were done in 2 to 4 groups. Painful procedures were venous, arterial and heal prick blood sampling, vaccination, NGT insertion, and ET suctioning. Pain intensity was measured using NIPS, DAN, PIPP, MBPS, CRIES, COVERS scales. Pain relief interventions included sugar solutions, kangaroo care and skin contact with mother, newborn’s position, breast milk, EMLA, Acetaminophen, Lidocaine, Vanilla odor, and Music. The most effective interventions were sugar solutions, kangaroo care and skin contact with mother, and tucking position. Conclusion: Despite the importance of newborn pain relief and existence of simple effective ways, these interventions are not always used as routine care. More studies need to be done regarding these interventions and their obstacles in order to reach the goal of reducing pain in newborn. Keywords: Newborn, Pain, relief
The effect of virtual based supportive education program on maternal satisfaction of the neonates admitted in NICUs

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Background: This study was conducted to evaluate the effect of the virtual based supportive education program on the satisfaction of the mothers of the preterm neonates in the NICUs'. Methods: This quasi-experimental study was conducted on 80 mothers of preterm neonates hospitalized in the NICUs of two educational hospitals of TUMS during 9 months. The mothers were assigned in two groups as cases and controls. The satisfaction level of the mothers was evaluated by using WBPL-Revised in both groups on the first and tenth day of the study. Mothers in the case group received the educational program available at www.iranlms.ir/myinfant for 10 days. After 10 days, the satisfaction level of the mothers in both groups was measured by questionnaire again. Result: the satisfaction of the mothers increased in both groups after this intervention. However, comparison of the mean scores revealed that the satisfaction of the mothers in the case group increased significantly following the intervention (P<0.001). Conclusion: Considering the benefits of virtual based supportive education, its utilization in parental education programs in NICUs is recommended.

Keywords: virtual education, NICU, Preterm newborn, Parental satisfaction

Clinical Audit of Nursing Care Related To Haemovigilance In Neonatal Ward And Neonatal Intensive Care Unit In Selected Hospitals Affiliated To Shahid Beheshti University of Medical Sciences

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Background: Haemovigilance is a national common system for healthy blood and blood products in all stages (transfusion chain) to keep track of the time blood donors and recipients of blood products, collecting and analyzing data related to adverse effects transfusion to correct and to prevent their recurrence adverse. Blood transfusions and blood products used in infants be used for treatment and needs to the standard nursing cares before, during and after the procedure. Therefore, investigating how nurses and other health care providers can implement Haemovigilance the various aspects of faults and errors Haemovigilance to determine the standards is available.

Methods: A descriptive study of 144 cases in which nursing care in relation to infant Haemovigilance observed and evaluated. Data collection methods was check list at neonatal ward and neonatal intensive care units of hospitals Mahdiyeh, Mofid and Imam Hussain affiliated to Shahid Beheshti University of Medical Sciences. The above check list contains information about how to perform the check list's standard of care in relation Haemovigilance, that in accordance with the standards contained in the three-part "request", "transfusion" and "documentation" was designed. To analyze the data, descriptive statistics using SPSS version 21 was used.

Results: Compliance with Haemovigilance in all areas of research in infant and neonatal intensive care units in connection with "the request check list" was 47 percent in relation to" the transfusion check list" was 63 percent, and in conjunction with the "the documentation check list" was 68 percent. The total score in all areas of health care research was 59/6 percent. Observed the highest rate of care consistent check list of documentation check list (68 percent) and then the check list of transfusions (63 percent). The lowest rates were observed in accordance with the standards of care was check list of request (47 percent) were assessed.

Conclusion: Nursing care associated with neonatal Haemovigilance. Haemovigilance moderate were assessed 59/6 percent and indicates the documenteds of care standards within which this can be due to a lack of care in this regard and failure in training.

Keywords: Haemovigilance, Nursing care, Standards, Neonate, Audit

The effects of tactile-kinesthetic massage on transcutaneous bilirubin in term neonates with jaundice. A randomized clinical study

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Background: Neonatal jaundice causing increased levels of bilirubin. One of methods of bilirubin reduction is massage.
Massage could decrease the reabsorption of bilirubin in the blood, so decreases the jaundice. This study conducted to examines the effect of Tactile- Kinesthetic massage on bilirubin in neonates with hyperbilirubinemia. Methods: In this quasi-experimental study, 80 neonates with physiological neonatal jaundice in 2014, were selected with available and sequential sampling and divided randomly in two groups, intervention group (40) and control group (40). Neonates were term and birth weight were between 2000- 4000gr and weren’t evidences of congenital anomalies. Data were collected using demographic questionnaire and Transcutaneous-Bilirubinometry. In the intervention group, Tactile-Kinesthetic massage were implemented for 2 days and 3 times every days and every session lasted 15 minutes. The mean of bilirubin and the numbers of meconium defecation were determined in pre intervention, 24 hours and 48 hours after intervention. For analyze of data used SPSS v.16, ANOVA and T independent. Findings: The mean of bilirubin in intervention group, in pre intervention (9.7±2.45), 24 hours (7.4±2.7) and 48 hours (7.3±2.5) after intervention were significant difference statically (P<0.05). But the mean of bilirubin weren’t significant difference statically in these times between two groups (P>0.05). Also, the numbers of meconium defecation were not significant difference in these times between two groups (P>0.05). Conclusion: Massage can causes bilirubin reduction in neonates. So propose to nurses to use this method as non-pharmaceutical for reduction of jaundice.

Keywords: tactile- kinesthetic massage, jaundice, term neonates

Knowledge of hand hygiene practices among neonatal intensive care unit (NICU) nurses

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Background: Hand hygiene prevents cross-transmission of microorganisms and reduces the incidence of health care associated infections. Although the hand hygiene is a relatively simple procedure, the compliance with hand hygiene among health care workers is as low as 40%. Neonatal intensive care unit (NICU) is sensitive to health care associated infections which are often difficult to control. The current research investigated hand hygiene knowledge among NICU nurses so that appropriate measures can be taken to promote hand hygiene compliance. Methods: Cross sectional study was carried out with Participation of NICU nurses working in a teaching hospital in an urban area in the northwest of Iran. All the nurses (35) present on the day of data collection during ward conferences, were included in the study. Data was collected by using the WHO hand hygiene questionnaire for health care workers that was translated to Farsi. Data were analyzed using descriptive statistics. Results: Thirty–five nurses were invited and completed the study, with a response rate of 100%. Study showed moderate to high knowledge about some aspects of the hand hygiene practice among the NICU nurses. Conclusions: The results of this small study should be replicated with more sample size studies and could be the bases for conducting future NICU nurses hand hygiene training interventions.

Keywords: Hand hygiene, Rubbing, Washing, Infection, Neonatal Intensive Care Unit (NICU), Nurses

Working Adolescents’ Resilience in the Context of Child Neglect

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Background: It is estimated that 168 million children are working world-wide depriving them of healthy growths and development. Many investigations have been declared the evidences of maltreatment in the context of child labour. Despite of experiencing maltreatment, some research findings have been indicated that working adolescents show resilience in the face of adversities and have the capabilities to bouncing back and well adaptation. As the resilience is a contextual construct, these findings are not generalizable to Iranian context. The purpose of the current study is assessing maltreatment and resilience among Iranian working adolescents.

Method: In this cross sectional study, 120 working adolescents aged between 12 and 18 years old randomly selected to participate in the study. “The multidimensional neglectful behavior scale” (Straus et al, 2008) and “Adolescent Resilience Questionnaire” (Gartland et al, 2011) were used to assess adolescents experiences of being neglected and resilience respectively. Data were analyzed using SPSS (18).

Results: 62(51.6%) of participants were female. Experience of being neglected was assessed in four domains for females/males: Cognitive (70%, 54%), Supervising (13%, 48%), Emotional (89%, 56%), and Physical (6%, 7%). The majority of adolescents (54.38%) had lower and equal scores to the total mean score of resilience questionnaire (185.54±26.34). Pearson Chi-Square test determined significant positive association
between “resilience” and “living with both parents”. Pearson’s correlation coefficient determined the negative correlation between “emotional and cognitive neglect” and “resilience”. **Conclusion:** The study findings determined all of working adolescents have experienced at least one type of neglectful behaviours whereas females were neglected cognitively and emotionally more than male. Considering the negative correlation between these two types of neglect and resilience, the female working adolescents are more susceptible to be vulnerable. Living with parents had known as a protective factor in this study. The participants of this study need to be supported from neglectful behavior and to be trained in order to become more resilient. **Keywords:** Neglect, Adolescent, Resilience

**Psychosocial problems assessment in adolescents and its relationship with demographic characteristics**

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**Background:** Society mental health is a phenomenon that has been regarded as one of the axes of different communities health assessment for psychologies, practitioner and religious scholars long ago (for a long time) and it is affected by a collection of economic, social and cognitive factors and according to the increase of mental illnesses prevalence among adolescents in recent decade, therefore current study has been done aimed to psychosocial disorders assessment in adolescents and its relationship with demographic characteristics.

**Methods:** This study was correlational. In order to do this research, 300 adolescents aged 12-19 years old in Rasht were chosen targeted and their parents were asked to complete a questionnaire named psychosocial disorders in adolescents (NICHQ) and demographic information. Data analysis was done, using descriptive and inferential statistics and with the help of software SPSS/ver22.

**Findings:** In psychosocial disorders symptoms assessment, the average score of people inattention was 3/52±1/44, hyperactivity 4/03±1/44, behavioral disorder 2/98±3/96, adhd 1/28±1/16, anxiety 1/60±2/26 and function 6/60±5/80. The correlation between symptoms of inattention, hyperactivity, behavioral disorder, adhd, anxiety, and function with other aspect of disorder symptoms was statistically significant (P=0/000). There was found any significant relationship between psychosocial disorders and demographic variables.

**Conclusion:** Early detection and treatment of mental disorders in adolescents have a great importance, because delay and negligence in recognizing these disorders could be substantial and irreparable damage to various aspects of their lives and finally brought to society.

**Keywords:** Psychosocial Disorders, Adolescents, Demographic Characteristics

**Medication Errors Reporting of Intensive Care Units Nurses in Educational Hospitals of Isfahan (2016)**

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**Background:** Reporting as one of the most important ways to prevent medication errors in health care settings is a useful tool to improve patient safety. This study aimed to identify the consequences of error and status reporting medication errors of nurses in the Neonatal intensive care unit was done. **Methods:** This Descriptive study was conducted in 1395. The sampling was census consisted of 150 nurses working in Neonatal intensive care unit of teaching hospitals affiliated to Isfahan University of Medical Sciences. Data collection was performed using a two- part questionnaire (Demographic Features, Medication Errors Consequence and Reporting Errors). Findings: Data analysis using descriptive statistics were performed with SPSS version 14. 80% of participants said that medication errors have been experiencing over the past month. (44/9%) stated that the error without effect, in 47/1%, the error has a minimal adverse effect and in 5/3% error led to prolonging hospitalization of patient. 28% of participants no reporting the error and 58/5% reason for concealment of error fear of being troublemaker, and 27/1%, fear of blame and criticism from the head nurse. Conclusion: Due to the risk of patient safety in healthcare centers, measures must be used for prevent errors and encourage nurses to error reporting. Anonymous and non-punitive reporting system, including solutions that are beneficial to increase reporting of medication errors.

**Keywords:** Medication Error, Nurses, Reporting, Neonatal Intensive Care Unit
Survival of Premature and LBW Infants: a Multicenter Prospective Cohort Study in Iran

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Background: The survival rate of preterm and low birth weight infants depends on various factors such as birth weight, gestational age and quality of care. Present study aimed at evaluating the survival rate of preterm and low birth weight infants and predictive factors and the risk of death in three training hospitals of Mashhad and Tabriz cities.

Methods: This prospective cohort study was conducted at 6 months in 2013 to 2014. Infants who were ≤32 weeks gestational age or their birth weight was ≤1500g were enrolled consecutively. Infants’ information was collected using data collection forms and Clinical Risk Index for Babies II (CRIB II) score was calculated for each of them. Infants were followed up until discharge from the hospital and their outcomes were determined. For survival analysis, Kaplan Meier and Log rank tests were used; also, to determine factors associated with survival of infants, Cox regression was used.

Results: Of 338 followed infants, 97(28.7%) died and 241(71.3%) remained alive. The median of preterm and Low Birth Weight infants’ overall survival rate was 76 days (CI=60.4-91.5). Multivariate analysis with Cox regression indicated that three factors of birth weight, base excess deficiency and fifth minute Apgar score had statistically significant relationship with infants’ survival rate (P<0.05).

Conclusion: In our study the survival rate of preterm and low weight infants was acceptable (71%). Birth weight, fifth minute Apgar score and base excess deficiency were important items that affect infants’ survival and could be considered in predicting infants’ survival in NICUs.

Keywords: Low birth weight, NICU, Premature infant, Survival

The Effect of Educational Intervention on Nurses’ Attitudes toward the Importance of Family-Centered Care in Pediatric Wards in Iran

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Background: Family-centered care sustains the unity of the child’s and the family’s health. The aim of this study was to determine nurses’ attitudes toward parents’ participation in the care of their hospitalized children in Iran in 2015.

Methods: In this experimental study, 200 pediatric nurses from hospitals affiliated with the Shaheed Beheshti University of Medical Sciences in Tehran were selected using the multi-stage, random-sampling method. Data were gathered using a questionnaire that covered demographic information and nurses’ attitudes. The questionnaire consisted of 31 items and was completed by the nurses in three stages: 1) before intervention (pretest), 2) immediately after intervention (post-test), and 3) three months after intervention (follow-up). The data were analyzed via SPSS software and using descriptive and analytical methods. Descriptive statistics, the Spearman Correlation Coefficient, and Repeated Measure Analysis (the Bonferroni method) were used to assess the data.

Results: The results indicated that there was a significant increase in the mean score of attitude after intervention [M (pre) = 3.35%, M (post) = 3.97%, p < 0.001)]. Most of subjects had neutral attitudes toward family participation in their children’s care. There were no significant relationship between the nurses’ sociodemographic characteristics and their attitudes.

Conclusion: The nurses’ attitudes toward the family’s participation in the care of their hospitalized children were moderate. The nurses’ attitudes should be improved by taking part in continuous training programs.

Keywords: family-centered care, attitude, nurses

Painting the effectiveness of therapy on depression in children with cancer hospital 10-6-year-old martyr Sadoughi

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Background: Cancer is a disease of exhausting. Patients with this condition require hospitalization repeated and prolonged treatment. In children due to physical and psychological conditions this issue becomes important. The aim: of this study

Keywords
was to determine the effectiveness of therapy on depression in children with cancer paintings 10-6-year-old was admitted to the hospital.

Method: The sample consisted of 40 available randomized 20 patients in the experimental group and control group was 20 Patient. The instrument used to measure depression, Maryakvans CDI scale and method of quasi-experimental pretest-posttest control group. After random selection at the outset for both pre-trial and trial intervention (painting therapy) in 10 sessions, each session lasted 2 hours. Tests were conducted on groups and after training both groups took posttest, then after a month, follow-up examinations. The data from the analysis of covariance (ANCOVA) was used.

Results: Based on the results of the depression between the two groups before intervention was 35% but much lower in the intervention group after the intervention (15%) of the control group.

Keywords: depression, cancer, painting

Smart NIS: A New Approach in Smart Health

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Background: Nowadays, IT organizations have encountered growing challenges in the management and maintenance of large scale heterogeneous distributed computing systems because these systems attempt to be active and available at all hours. The term of E-nursing and Nursing Information Nursing (NIS) have been used to refer to the incorporation of ICT into Smart Health, especially nursing. Nursing process is often considered as core of the nursing care delivery and guides the care documentation. Currently, with rapid advance in Information and Communication Technology (ICT) this process can be supported electronically in smart cities. Applying information systems improves health care processes. Nursing informatics (NI) is a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom in Health Structure of a smart city. It supports consumers, patients, nurses, and other providers in their decision-making in smart health by using software engineering methodology. This paper introduces the concepts of agent software engineering, its characteristics, and Nursing Information Systems (NISs). It then proposes Autonomous Nursing Informatics including characteristics and building blocks of the proposed model using Tropos methodology and Jadex environment in kids wards. Finally, it discusses on challenges such as learning, competencies and the building blocks life cycle.

Keywords: Nursing Care, Nursing Information Systems (NIS), software engineering, Tropos methodology, Jadex

Association of maternal education with nutritional status in the first 6 months of a baby life

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Background: Breastfeeding plays an important role in the growth and development of premature infants. Moreover, mother’s milk, having abundance of immunologic factors prevents the premature infants against the risk of many diseases. Mothers should receive the necessary trainings about the benefits of breast feeding. This study investigates the effect of maternal education on infant’s nutritional status (breast milk or formula milk) during the first 6 months of the life. Method: In a cross-sectional study 159 neonates, admitted in neonatal ward of the Al-Zahra Hospital of Tabriz, were investigated. Their mothers received the required training about the benefits of the breast milk and breast feeding techniques by books, pamphlets, educational videos, group training and practical sessions. The nutritional status of the babies was monitored up to 6 months after they discharged from the hospital and the results were analyzed using the Chi-square test. Results: About 54% of the mothers were illiterate or with primary education (the first group), 36% had high school or college educations (the second group) and the remaining 10% were mothers with advanced degrees (the third group). The success rate in breastfeeding showed an inverse trend with the level of maternal education, being 52%, 41% and 28% among the first, second the third groups respectively. This difference was statistically significant with P-value less than 0.05. Conclusion: According to the findings, mothers with advanced educations should be further made aware of the breast milk features and its benefits. Noting that working mothers would be in maternity leave during the course of this study, the failure in the neonatal breastfeeding could not be attributed to the mothers’ employment. It seems that the mother’s opinion of the formula milk, her experience in this case and the socioeconomic condition of the family could be among the effective parameters, as such understating the root cause of the problem is recommended for the future investigations.
Keywords: Nutrition, Infant, Maternal Education

Evaluation of the inter-hospital Transfer Factors Related to the premature neonate Physiological changes

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Background: Inter-hospital transfer is one of the major challenges of neonatal care and newborns require intensive care during transfer process. So, evaluation of the neonate physiological indices in order to avoid transfer possible complications is very useful. The object of this work was to determine whether inter-hospital Factors serve as a predictor of the preterm neonate Physiological changes.

Methods: In this analytical cross-sectional study, neonate inter-hospital transfer care was observed in the selected hospitals of Dezful university of Medical sciences. 240 care before and after neonate transfer was observed and checked and Physiological changes were measured. The check list was about giving care and facilities before and after neonate transfer. Content validity and inter rater coefficient reliability were calculated for checklist. Data were analyzed using descriptive and analytic statistics with the SPSS software, version 16.0 for windows.

Findings: 97.1 percent of infants were incubated Mobile. The result demonstrates that plus, temperature. Rate and blood pressure mean of incubator transported neonate differ significantly from the neonate who was transported in arms. Most of the transfer personnel (60.8 percent) had attended training courses related to neonatal intensive care. The findings indicate that 12.9 percent of infants had received cardiopulmonary resuscitation and 7.9 percent of infants were intubated. Rate, body temperature and blood pressure was considerably higher in intubated neonates.

Conclusion: According to the result human factors, equipment and infant’s condition known as effective factors of preterm neonate physiological parameters and the importance of using well-trained neonate nursing staff during transport was revealed. In addition improving current preterm infants transferring status needs to improve neonate transmission equipments.

Keywords: Inter-hospital transfer, Preterm neonate, physiological parameters.

Philosophy for Children: Potential Health Benefits

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Background: Philosophy for children (P4C) was initiated by Matthew Lipman in the 1970s and has been focused initially on promoting children’s higher order thinking skills such as critical, creative, and caring thinking through questioning and dialogue in a community of inquiry. The community of inquiry as a collaborative learning approach is a model of education that uses to teach reasoning and argumentative skills to children. Thought-provoking stimulus such as a text, image, picture book, or video clip presents by P4C trainer in the community of inquiry and then participants frame their own philosophical questions or ideas in response to the stimulus and vote for the one they wish to explore.

P4C program has been applied in numerous educational settings around the world and is assessed for its potential benefits for children. Previous investigations have been concentrated on assessing the role of P4C program on promoting children’s personal and social competences such as moral perception, logical thinking, and self-reflection. Empirical researches have provided the evidences that, children who participate in P4C program are more likely to develop their self-perception as a learner and problem solver, and have better self-esteem and empathy for others. Other findings have indicated that P4C help children to build resilience to extremism through promoting critical thinking and communication skills as well as learning how to handle conflicts through dialogue.

The role of cognitive skills on promoting children’s health and establishing health habits is examined by numerous investigations. The findings also acknowledge the importance of social and self-management skills as well as building a resilient sense of efficacy to promote health in children and youth. Other research findings support the positive role of empathy and self-reflection in health promotion. Considering the effects of conducting P4C program, it could be argued that P4C is an educational program with positive health related effects and we can use it in our educational system to promote our children’s health in order to have healthy and thoughtful community in the future.

Key words: Philosophy for Children, Health, Social Skills

Paternal skin-to-skin care and its effect on cortisol levels of the infants

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Paternal skin-to-skin care and its effect on cortisol levels of the infants
Background: Neonatal period is one of the most critical phases of human life and intensive care unit is a stressful environment for the infant and it will be under the pressure of factors such as noise, nursing intervention, and harsh light, the most important is separation from parents. Objectives: This study aimed to achieve results of the effect of skin-to-skin care by father on the salivary cortisol in infant.

Methods: This study is a randomized clinical trial on 45 premature infants paired by their fathers in NICU of Tabriz Alzahra Teaching Hospital conducted in November 2015. The control group received standard care and the intervention group did 45 minutes of skin to skin care. Saliva samples were collected from infants before, during, and after this study to measure the cortisol level. The statistical software SPSS 13 was used to analyze the data with the significant level of \( p < 0.05 \) in this study.

Results: Salivary cortisol in babies in the control group had a mean 66.36 (S.D = 71.22) and intervention group a mean 59.56 (S.D =59.20) with \( p=0.56 \).

Conclusions: both groups showed decreasing cortisol levels during the study, the reduction in the skin-to-skin care group was more than in the control group, with no significant difference between these two groups. Thus, making it possible for fathers to take care of their infants may be effective, helpful, and secure.

Keywords: skin to skin care, stress, cortisol, premature, father

Nurses and Physicians perspectives regarding Pain Management Barriers in Neonatal Intensive Care Unit: A qualitative study

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Background: Despite the scientific advances on pain measurement and intervention, pain management for the infant has remained a challenge for the health teams. This is because the infant is not able to talk and defend themselves when they are in pain. The aim of this study was to explore nurses and physicians perspectives regarding pain management barriers in NICU.

Methods: A qualitative content analysis study was carried out. The participants were the nurses and physicians working in NICU of Ardabil Alavi Educational Medical Center in Iran. Twenty-five nurses took part in focus group discussion and five physicians attended private interviews. Four focus group discussion and the interviews were carried out until data saturation was ensured. Data analysis with conventional content analysis was done.

Results: At first, 530 codes were extracts and classified in 16 categories and 50 subcategories. After removing and combining the codes, 2 themes, 6 categories, and 28 subcategories were obtained. The themes included “Empowerment of human resource” and “Performance and policies of the organization.” The categories included “Information requirements of personnel”, “Belief and attitude of personnel”, “Protocol/Guideline”, “Recording and Monitoring”, “Equipment and Facilities”, and “Administrative issues”.

Conclusion: Our findings indicated that lack of educational courses, absence of an infant’s pain management protocol, and administrative issues were the main obstacles in the way of nurses and physicians in NICU. Therefore the need for strategies to reduce or remove these barriers to be felt.

Keywords: Pain Management; Neonatal; NICU; perspective; Qualitative study

The effect of narrative writing of mothers on their satisfaction with care in the neonatal intensive care unit

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Background: This study was conducted to evaluate the effect of narrative writing of mothers on their satisfaction with care in the neonatal intensive care unit (NICU) during their neonates’hospitalization.

Methods: This quasi-experimental study with pretest and posttest were administered to a sample size of 70 mothers with preterm neonates. The Neonatal Index of Parental Satisfaction questionnaire was used. Descriptive and analytical statistics were used for data analysis.

Finding: The satisfaction level of the mothers was 113.1 ± 17.5 on the 3rd day and 102.3 ± 25.6 on the 10th day of the study in the control group. Paire t-test (p values<0.011) in the control group showed a significant difference in the satisfaction level of the mothers. In the intervention group, the satisfaction level of the mothers was 107.5 ± 21.5 on the 3rd day and 137 ± 15.2 on the 10th day of the study. Paired t-test (p values<0.001) showed a significant difference in the satisfaction level of the
mothers between the 3rd and 10th day of the study. The results of independent t-test showed a significant difference in satisfaction between the intervention and control groups on the 10th day of the study (p values˂0.001). Conclusion: We suggest that narrative writing may be considered as an efficient supportive intervention to increase the mothers’ satisfaction in the NICUs.

Keywords: Neonatal Intensive Care Unit, Neonate, Mothers, Satisfaction

**Characteristics of Pediatric Nurse Preceptors as Identified by the Pediatric newly nurses**

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Background: Nursing programs tend to focus on graduating generalists, whereas today’s hospitals are becoming increasingly specialized and complex. In addition, many undergraduate programs have limited acute care pediatric rotations in their curriculum, and this change places the responsibility for extensive clinical training on the hiring hospital and its preceptors. It is believed that preceptors have an important role for supporting newly nurses during the transitional period to professional roles through preceptorship program. A preceptorship program is a structured one to one teaching/learning strategy designed to orient and ease the transition for nurses who are entering the professional role for the first time or who are in a new position. This program is increasingly being recognized and implemented in Iran.

Methods: This quantitative descriptive study was conducted in a teaching hospital in an urban area in the northwest of Iran. Participant were pediatric newly nurses who participated in a structured preceptorship experience and completed their orientation within the past 12 months. The study explored eighteen characteristics of pediatric nursing preceptors that the pediatric newly nurses think are important to their orientation.

Findings: Data was collected during Jul 2016 using a questionnaire. A total of 31 pediatric newly nurses completed the survey, for a response rate of 56.4%. Descriptive statistics were used to reveal the importance rating of characteristics for the pediatric nursing preceptor to possess. The characteristics “Demonstrates ability to do nursing skills (such as nursing procedures)”, “Shows a contagious enthusiasm for giving quality patient care”, and “Demonstrates knowledge of scientific principles relative to patient care”, were identified by the pediatric newly nurses as having the highest level of importance for the pediatric nursing preceptor to possess.

Conclusion: The finding of this study provided the researchers the opportunity to identify the characteristics of pediatric nursing preceptors that the pediatric newly nurse thought are important to an effective preceptor program. Sharing the characteristics with the highest level of importance rating from the pediatric newly nurses with the pediatric nursing preceptors would allow the preceptors to better understand the perspective of the newly nurse. This could be done during a preceptor development program in which the preceptors discuss the results and how they can model those characteristics as identified as very important when interacting with future newly nurses.

Keywords: Characteristics, Pediatric newly nurses, preceptorship, preceptor, Hospital
**Young Researchers Abstracts**

**Mutation analysis of ALDH3A2 gene in Iranian patients affected by Sjogren-Larsson syndrome**

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**Background:** Sjogren-Larsson syndrome (SLS) is a rare autosomal recessive disorder characterized by ichthyosis, mental retardation, seizures as well as spastic diplegia or tetraplegia. This disease caused by mutations in the fatty aldehyde dehydrogenase (FALDH) gene (ALDH3A2). Until now, more than 90 mutations of ALDH3A2 were known in SLS patients, including small or large deletions/insertions, missense or nonsense mutations, splicing and complex mutations.

**Methods:** In the present study, mutations in ALDH3A2 gene were analyzed in a total of 7 SLS Iranian patients referred to Human genetic research center. All exons and intron boundaries of the ALDH3A2 gene were screened using Sanger sequencing. SIFT and PolyPhen programs were used to predict possible pathogenicity of identified variants.

**Findings:** A total of three different mutations were identified in this study which one of them was detected for the first time. Results of in silico studies and genotyping of all members of these families showed that these identified mutations can be causative for SLS in these families.

**Discussion and Conclusion:** The obtained results increased our understanding from etiology of SLS in Iranian population and could be helpful in genetic counseling and genetic diagnosis of this disease in Iran.

**Keywords:** Sjogren-Larsson syndrome; ALDH3A2 gene; Iranian patients

**Molecular genetic study of Factor v deficiency in two Iranian families**

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**Background:** Factor v deficiency is a rare autosomal recessive disorder. This coagulation disorder is caused by mutations in F5 gene. Level of Fv antigen and coagulant activity determine the clinical manifestation which ranges from mild to severe. The most common symptoms of Factor v deficiency include bleeding from mucosal surfaces and postoperative hemorrhages.

**Methods:** Two Iranian families with affected individuals to Factor v deficiency referred to Kawsar Human Genetics Research Center were investigated in this study. Sanger sequencing of the F5 gene was performed to identify pathogenic mutation in affected individuals. Pathogenicity prediction was done using Polyphen and Sift programs.

**Findings:** Two different mutations were identified in exon 5 and 10 of the F5 gene in these families. The affected children were homozygote for these mutations but none of the normal members of these families showed this genotype.

**Discussion and Conclusion:** Although Factor v deficiency is more prevalence in Iran, It is the first report of genetic study of Factor v deficiency in Iran. Patients and their families face lots of difficulties because of the symptoms of Factor v deficiency and factor replacement which uses as the treatment. So more studies in this field especially in Iran is needed.

**Keywords:** Factor v deficiency, F5 gene, coagulation disorder, mutation

**Mutation detection and haplotype analysis of Phenylalanine Hydroxylase (PAH) gene in exons 6 and 8-13 in 50 families with an affected child to Penylketonuria (PKU)**

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Background: Penylyketonuria is the most common amino acid metabolic disorders with an autosomal recessive inheritance. Its prevalence is approximately 1/10000 among the European population. In most cases it is caused by mutations in PAH gene. So far, more than 600 different mutations in the PAH gene have been detected. Due to the approval of a national screening program for PKU in Iran and after the identification of patients and carriers, detection of the most common disease-causing mutations in Iranian population is necessary to set a genetic strategy to prevent PKU. The aim of this study is to detect PKU-causing mutations in Iranian population and to assess the relationship between the identified mutations and minihaplotypes of the PAH gene.

Methods: 50 unrelated families that met the necessary criteria were included in the study. All families were investigated for possible DNA variations in exons 6 & 8-13 of the PAH gene and intronic flanking regions. Polymerase chain reaction (PCR) follow by Sanger sequencing was used for this analysis. Haplotype analysis of PAH region was performed using fragment analysis by capillary electrophoresis. Finally, investigation of the relationship between mutations and minihaplotypes was conducted using Chi-Square statistical method.

Findings: Analysis of exons 6 & 8-13 of the PAH gene showed 11 different mutations. Mutation detection rate was 43%. Most mutations found in exon 11 and its adjacent intron regions (26%). IVS10-11G>A, K363Nfs*37 & IVS9+5G>A mutations were the most frequent mutations in this study with the frequencies of 19%, 7% and 4%, respectively. In this study, IVS10-11G>A & K363Nfs*37 mutations were associated with STR: 17/VNTR:7 & STR:15/VNTR:8 minihaplotypes (p-value<0.00001), respectively. In addition, two novel mutations and three novel polymorphisms were identified.

Discussion and Conclusion: Our results are in line with the previously reported data in several studies among Iranian populations. IVS10-11G>A is the most prevalent mutation in our samples especially in Turkish patients. It has previously been described as the major PKU-causing mutation in Mediterranean region. In our study, mutation IVS10-11G>A was strongly associated with the VNTR7/STR250 minihaplotype that suggests a Mediterranean origin of IVS10-11G>A mutation in Iran and it could be concluded that the Iranian and Mediterranean populations have genetic proximity. In our study, the majority of mutations (26%) were distributed across the exon 11 and the flanking intronic region that suggest achieving an efficient detection strategy, exon 11 of PAH gene should be chosen first in DNA testing for PKU.

Keywords: Penylyketonuria, Phenylalanine Hydroxylase, Mutation, Haplotype

Expanding the spectrum of PAH mutations in Iranian population

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Background: Phenylketonuria is the most common amino acid metabolic disorder. In most cases it is caused by mutations in PAH gene. Due to the approval of a national screening program for PKU in Iran and after the identification of patients and carriers, detection of the most common disease-causing mutations in Iranian population is necessary to set a genetic strategy to prevent PKU.

Methods: we examined 34 Iranian families with PKU using PCR- Sequencing of 13 exons of the PAH gene and their flanking intron regions. All families were investigated for DNA variations in exons 1-13 of the PAH gene. Polymerase chain reaction (PCR) followed by Sanger sequencing was used for this analysis. Findings: Mutation analysis revealed 22 different mutations were found, which account for 88.23% of the total mutant alleles. The majority of these mutations (69.11%) were distributed across the exons 11, 2, 7 and the flanking intronic regions. IVS10-11G>A was the most common mutation with a frequency of 20.58 %. Besides, p.Leu48Ser (11.76%), R261Q (10.29%), IVS9+5G>A (8.82 %), IVS2+5G>C (7.35%), p.Lys363Asnsfs (4.41%), and p.Arg261* (2.94%) comprised 66.15% of all mutations. In addition, eight new mutations were identified for the first time in Iranian population. Thirteen novel polymorphisms were also identified for the first time in the world in our study.

Discussion and Conclusion: The present study is consistent with other finding in Iran that indicates a broad- PAH mutation
Two novel variants in the PAH gene: case of Phenylketonuria in two Iranian pedigrees

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Background: Phenylketonuria (PKU) is an inborn error of amino acid metabolism with an autosomal recessive inheritance pattern that in most cases it is caused by mutations in the PAH gene. PKU has wide allelic heterogeneity and over 600 different disease causing mutations in the PAH gene have been detected to date. Through this study, we introduced two novel mutations in the PAH gene among Iranian patients with phenylketonuria.

Methods: We wanted to investigate the molecular etiology of affected members in two consanguineous Iranian families. PCR- Sequencing was used to identify sequence variations in the PAH gene.

Findings: Here we reported two novel mutations, p.Asp112Glufs*2, in exon 3 and p.Arg408Leu, in exon 12, among the Iranian PKU patients for the first time. Asp112Glufs*2 in homozygous form has been found in a 10-year old girl who has cognition developmental delay, consequently the late diagnosis of PKU. Compound heterozygosity for Arg408Leu and p.Arg243X led to classical PKU in a 19 year-old girl. These lesions haven't been reported previously in the PAH mutation Analysis Consortium database.

Our bioinformatic investigation indicated that these novel variations are a disease causing gene lesions and these can have deleterious and damaging impact on the function of PAH protein.
Discussion and Conclusion: In this study, we reported two novel mutations in the PAH gene that can be responsible for the classical PKU phenotype in the Iranian population. Detection of novel mutations indicates notable allelic heterogeneity of the PAH locus among this population.

Keywords: Phenylalanine hydroxylase, novel mutation, sequencing, Iranian population

A novel and a reported mutation in the LMAN1 gene in Iranian families with combined Deficiency of factor V and VIII

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Background: Combined deficiency of factor V and VIII (F5F8D) is the most common type of six double coagulation factors deficiency. It is an autosomal recessive bleeding disorder characterized by mild-to-moderate bleeding symptoms. Mutations in LMAN1 or MCFD2 genes can cause F5F8D. The products of these two genes make a complex (LMAN1-MCFD2) which functions in the transport of F5/F8 from the endoplasmic reticulum to the Golgi.

Methods: A total of 10 patients affected by F5F8D from 5 Iranian families referred to Kawsar Human Genetics Research Center were included in this study. F5F8D was diagnosed on the basis of FV and FVIII levels. Genomic DNA was extracted from blood using salting out method. Mutation screening of the LMAN1 gene was performed using direct sequencing of all coding region and intron–exon boundaries of this gene.

Findings: Two different mutations were identified in 5 investigated families. A previously reported mutation was identified in exon 7 of the LMAN1 gene in four families. A novel small deletion mutation was also found in exon 10 of this gene in another family. A family segregation study in these families revealed that all affected individuals are homozygous for one of these mutations but normal members of these families did not show this genotype.

Discussion and Conclusion: Understanding more about the functional mechanisms of LMAN1 protein can be obtained by studies on genetic causes of F5F8D in different populations. Until now only few studies have performed on LMAN1 mutations in Iran. The results of this study and other similar studies can help to identify more prevalent mutations in the LMAN1 gene in Iran.

Key words: Combined deficiency of factor V and VIII, LMAN1, mutation

Etiology of fever and demographic in febrile convulsion in children aged 3 months to 6 years of in Taleghani hospital during 1392

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Background: Febrile convulsion is defined as a seizure associated with a febrile illness in the absence of central nervous system or severe electrolyte disorders in children older than one month and no prior history of any febrile seizures occur. Fever is usually greater than 38.4 °C. most cases occur in aged 6 months to 6 years. Febrile convulsion is classified into two types: simple and complex febrile convulsion. Several factors have been implicated in causing fever can lead to seizures. Reports on the increasing number of cases of viral infection as a cause of fever is a febrile convulsion in recent exist. The aim of this study was to investigate the causes of fever and demographic data in febrile convulsion in children between the ages from 3 months to 6 years of age admitted to the Taleghani hospital during 1392.

Methods: In one cross sectional study, children aged 3 months to 6 months referred to Taleghani hospital due to febrile convulsion are selected and enrolled. The demographic information including age, gender, fever, seizure type, family history recorded. The information above was obtained from hospital documents. Data entered into SPSS 18 software and analyzed with statistical tests.

Findings: The study examined 312 children with febrile convulsion in 1392 referred to Taleghani Medical Center. The mean age of the participants in this study, was 22/76 months with 14/3 months SD. the frequency of simple febrile convulsion 73/4 percent and 83/3 percent of children had no family history of febrile convulsion. Viral infections are the most common cause of febrile seizures with 54/8 percent
Evaluation of bone mineral density and related factors in patients with B-thalassemia major regularly transfused in the Children Medical Center Hospital From Mehr 93 to Mehr 94

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Background: treatment of patients with B-thalassemia by regular blood transfusion and iron chelation therapy is accompanied by a series of serious complications including osteopenia and osteoporosis. The etiology of bone disease in thalassemia is multifactorial. Bone Mineral Density (BMD) is a good index of bone status. This study was performed to evaluate BMD and its association with anthropometric and biochemical parameters in patients with B-thalassemia major regularly transfused.

Methods: 79 thalassemic regularly transfused patients (F, M, aged 7-40) were studied by assessment of lumbar spine and femoral neck BMD by Dual Energy X-ray Absorptiometry (DEXA). they were divided into 2 groups [Normal Bone Mass(NBM) and Low Bone Mass(LBM)] in the base of Z scores(>2.5, < 2.5). Anthropometric factors including age, gender, weight, height, BMI, puberty status, skin fold, fat mass, date of diagnosis and onset of regular transfusion and chelation therapy, biochemical parameters (Hb, FBS, Ferritin, Ca, TSH, T4, FT4, Vit D) were assessed. Then the association of BMD with these factors was analyzed by SPSS statistical software.

Findings: 38 percent were LBM (F: 42%, M: 31%) and 75 percent were Vit D deficient.

Discussion and Conclusion: There was a statistically significant correlation between LBM patients with normal Vit D comparing Vit D deficient LBM ones (63% versus 30%, P value: ). LBM patients with Ferritin >2000 were more than the Ferritin.

Keywords: Febrile convulsion, viral infections, simple febrile seizures, febrile convulsions complex

Evaluation of effect of instructing smoking parents of asthmatic children 9-12 years in reducing the effects of passive smoking cigarettes by children

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Background: About 10 to 15 percent of children suffering from a chronic disease and are undergoing continuous treatment. Asthma is the most common chronic disease in children and one of the most important in the emergency room and hospital admission. And the first cause of a child’s absence from school. Asthma is an allergic disease (allergic) the airways (bronchi) affects. When allergic reactions occur, bronchi constrict and narrow are blocked by mucus. This phenomenon is having trouble breathing. The most important factors in this disease include indoor and outdoor pollution, passive smoking cigars they smoke (passive smoking) and Contact Materials and chemical gasses in the environment. The use of passive smoking (passive smoking) on the respiratory system of newborns and children very much and well-known adverse effects. Studies show that children with asthma whose parents smoke have more severe disease experience. For this reason, identify ways of preventing asthma and the necessary training to parents of children with asthma can be a great success in reducing the incidence of this disease. Because the prevention is better than cure, the aim of this study was to evaluate the effect of education in reducing the incidence of smoking parents of children 9-12 years old with asthma use of passive smoking by children.

Methods: The study was a quasi-experimental study with pretest and posttest with the control and experimental groups. The study population included 200 children 9-12 years old with asthma and those with smoking parents under the Children’s Medical Center Division of Immunology and Allergy. Pre-test and post-test information through interviews and questionnaires designed to gather Validity and reliability that has been approved by the faculty. All the data were analyzed by software spss21.

Keywords: Thalassemia, Bone density, Blood transfusion, Children’s Medical center
Findings: The results showed that educational program to reduce the use of passive smoking by children for parents to significantly reduce the symptoms and severity of asthma.

Keywords: Children, asthma, parents, education, prevention

Evaluating laboratory, Clinical and epidemiological with pneumonia Ayatollah Golpaygani admitted to children’s hospital in Qom province during the years 1393 to 1395

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Background: Pneumonia is an inflammation of lung tissue that is associated with the density of alveolar spaces. The most common cause of pneumonia in the first years of life, are respiratory viruses such as influenza. Pneumonia is an important cause of child mortality. The aim of this study, was reviewing the laboratory, clinical and epidemiological factors with pneumonia in children.

Methods: IN this retrospective descriptive analytical study, 101 patients (0 to 5 years old) with pneumonia diagnosis that were admitted in Ayatollah Golpayegani hospital in Qom: from 2014 to end of August 2016 were assessed. Pneumonia diagnostic criteria were performed based on clinical, laboratory and X-ray findings. Data were analyzed by SPSS software and descriptive statistics and chi-square test was used.

Findings: Findings showed the 55 patients (%54/5) were male and 46 (%45/5) were female. Pneumonia were seen more than once in the past three months, in 29/7 cases. The mean duration of hospitalization was 2/197 ± 3/95 days. The highest prevalence of clinical symptoms include: cough (%87/1), fever (%70/3), wheezing (%38/6), vomiting (%32/7). According to laboratory studies, bacterial growth was seen (P-value <0.05).

Discussion and Conclusion: According to the results of this study, seems Pneumonia is an important cause of hospitalization in children under 5 years and the incidence of pneumonia was more among children under one year. Therefore recommended vaccination against Haemophilus influenza and antibiotic therapy as soon as possible in Pneumonia.

Keywords: Pneumonia, Children, Laboratory factors, Clinical factors, Epidemiological factors

Incidence of Acute Neurologic Complications after Heart Surgery in Children with Congenital Heart Disease

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Background: According to the nature of heart diseases and the use of cardiopulmonary bypass, transient or permanent neurologic complications may arise during or after pediatric cardiac surgery. The aim of this study was to evaluate the incidence of acute neurologic complications in postoperative cardiac surgery period in children with congenital heart diseases (CHD) undergoing cardiac surgery.

Methods: In this study, all patients with cardiovascular disease (including CHD and other cardiovascular diseases) had been operated (open or closed) in the Children’s Medical Center, Tehran, Iran, was evaluated for a year between July 2014 and July 2015. Those who had died during hospital stay or surgery, patients with incomplete information in their medical records, and children who had not been operated because of CHD were excluded. Of the 435 patients surveyed, 364 patients were
enrolled in this study. Acute neurologic complications and related findings in brain CT scan were investigated.

Findings: The age range for patients was between 5 days to 15 years old, of whom 64 (17.6%) patients were under 2 months, 131 (36%) patients were between 2 months to 1 year, and 169 (46.6%) patients were over one year. Thirty-three patients (9.06%) were identified with acute neurological complications after heart surgery, including seizures, movement disorders, and loss of consciousness, visual disturbances, headache, and hydrocephalus.

Discussion and Conclusion: Improving the implementation of the cardiopulmonary bypass protocols and using neural monitoring for ischemia and bleeding as well as arterial filter during surgery can reduce the incidence of neurological complications after pediatric cardiac surgery.

Keywords: acute neurologic complications, congenital heart disease, heart surgery

Determining prevalence of Glucose-6-phosphate dehydrogenase deficiency among newborn infants in Khorasan Razavi province

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Background: Glucose-6-phosphate dehydrogenase deficiency is the most prevalent enzyme defect that affects 5% of world population or about 400 million people. The majority of patients are asymptomatic throughout their lives. However, some patients represent clinical symptoms after exposure to drugs, infections or eating Fava beans. Neonatal jaundice that may lead to kernicterus is one of the side’s effects of Glucose-6-phosphate dehydrogenase defect. According to high prevalence of this defect among Iranian population as a public health threat and a challenge in the health system, we planned to determine the prevalence of G6PD deficiency in Khorasan Razavi province which consists of different nationalities.

Methods: This is a cross sectional study in maternity part of Khorasan Razavi hospitals on 700 newborns in 1394-1395. For sampling of newborns, 4 centers selected among all maternity parts. After informed consent, considering inclusion and exclusion criteria, a questionnaire was completed for each baby where the date of birth, sex, neonatal blood group, maternal blood group, neonatal condition (term, preterm), enzyme activity, ethnicity, and hospital admission was due.

Findings: The prevalence of G6PD deficiency was determined 2 %( 1.7% of them were male and0.3% were female). Among 700 neonates, 53.9% were male and 46.1% were female that there was a significant relationship between gender and enzyme defect. The average enzyme levels in the babies was 14.56 ± 3.21 and this rate was 2.56 ± 2.14 among G6PD deficient patients. There was a statistically significant association between enzyme levels and hemoglobin but this correlation was not clinically significant. There was no significant relationship between G6PD deficiency with ethnicity, type of delivery and mother and baby blood group.

Discussion and Conclusion: A significant relationship was investigated between gender and average levels of the enzyme with G6PD deficiency, but for conclusions in the context of all the variables studied, further studies are required.

Keywords: glucose-6-phosphate dehydrogenase deficiency, incidence, newborn screening, Favism

The relationship between cytomegalovirus infection and Guillen barre syndrome in Iranian child population

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Background: It seems that cytomegalovirus (CMV) is the most common virus infection associated with GBS (Guillen barre syndrome) being identified in 10 to 15 % of patients by presenting specific CMV-IgM 20 antibodies. But still little is known about epidemiology and prognostic factors in Guillen barre syndrome. In this study we aimed to investigate the association between CMV and Guillen barre syndrome by serologic assay including CMV-IgM and CMV-IgG in cases and
controls matched with age and sex. Also we identify CMV-specific genome by conducting polymerase chain reaction (PCR) in serum and cerebrospinal fluid.

**Methods:** In this study 30 samples of patients with Guillen barre syndrome and 30 samples of controls matched in sex and age, admitting to hospital during 2013 through 2015, were collected. All samples were examined for CMV-IgM and CMV-IgG antibodies and CMV-specific PCR.

**Findings:** 70% of cases had history of upper respiratory infection in recent last month and 6.7 % had history of gastroenteritis. Positive titer of virus specific IgM was found in 10 patients and 10 controls that did not have significant difference. (P value=0.57) Positive titer of virus specific IgG was found in 29 patients and 28 controls that did not have significant difference.

**Discussion and Conclusion:** PCR in serum and CSF in both groups were negative. Detection of IgM-antibodies may indicate primary infection, but also reactivation or reinfection. PCR or IgG avidity test can indicate primary infection. In our study CMV PCR in both groups, controls and cases were negative in despite of other studies that showed positive PCR in one third of seropositive cases. These results can show that none of our cases were in active phase of disease.

**Keywords:** cytomegalovirus, virus specific antibody, Guillen barre syndrome

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**Do Tehran adolescents consume adequate dairy products? : A cross-sectional study**


**Background:** Milk and dairy products are necessary for bone metabolism but the majority of adolescent do not consume adequate proportion of them. The present study was done to assess dairy products consumption and daily calcium and vitamin D intake in Tehran adolescents.

**Methods:** In this cross sectional study, 444 students were recruited. The dairy consumption, calcium intake, vitamin D intake and serum 25 (OH) vitamin D were measured in these participants.

**Findings:** About 92.1% of students consumed at least one glass of milk per week with higher consumption among boys rather than girls. Calcium intake from milk and yogurt was more than calcium intake from other dairy products. The mean calcium intake from milk and yogurt was 2735.20 and 2899.45 mg/week, respectively. Overall, the mean calcium intake from dairy products was 1176.5 ± 48.12 mg/day with lower intake in girls. Approximately 40 percent of adolescents consumed calcium lowers than 700 mg/day. The mean vitamin D intake from dairy products in boys was 56.8 IU/day (±3.2) and in girls was 51.6 IU/day (±3.2) and no one meeting Dietary Reference Intakes for vitamin D. There was a significant positive correlation between weekly calcium intake and serum vitamin D level (p-value=0.001). Vitamin D deficiency was prevalent in adolescents with higher rate in girls rather than boys (71.2% vs. 17.5%).

**Discussion and Conclusion:** The results indicate Tehran adolescents did not consume adequate dairy products, so it is necessary to persuade them to have more interest to consume milk and dairy products especially in girls. Since all different type of dairy products are important sources of calcium, promotion adolescents to consume any dairy products and alter in dietary patterns that improve calcium intake, should been increasing.

**Keywords:** dairy products, vitamin D deficiency, Adolescents

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**Surveying Alliteration Awareness and Rhyme Awareness in Students with Down syndrome**

*Seyyedeh Maryam Fazaeli*

**Background:** Down syndrome is the most common type of chromosome disorder with disorders in such as physical, cognitive and language abilities. One of these impairments in metalinguistic domain is phonological awareness. According to the researches, rhyme awareness development precedes alliteration awareness. Little is known about alliteration and rhyme skills among Persian children with Down syndrome. This paper has focused on rhyme awareness and alliteration awareness in Persian students with Down syndrome.
Methods: Students with Down syndrome studying in second, third, and fourth grades were recruited for this cross sectional study (N=22). Subjects were 13 girls and 9 boys which aged between 10 to 17.6 (year ; month). They had no combined physical, auditory, visual, speech, oral anatomical, neurological and obvious motor deficits. To assess students, the subtests of alliteration and rhyme in Dastgerdi and Soleymani’s Phonological Awareness Test (2005) was used.

Findings: There was no significant difference between rhyme and alliteration skills among students with Down syndrome (p=0.868; p>0.05). Furthermore, there was no significant difference between girls and boys in rhyme (p=0.601; p>0.05) and alliteration (p=0.744; p>0.05) skills. However, girls’ scores mean was better than boys' ones in alliteration and rhyme skills.

Discussion and Conclusion: There were no significant differences between rhyme and alliteration skills among students with Down syndrome which may possibly be due to the training they had received at school. However, there is a need for researchers to shed some lights on rhyme and alliteration skills among normal children at preschool level.

Keywords: phonological awareness, alliteration, rhyme, down syndrome.

An Investigation Of The Relationship Motor Developmental Stimulatory Consultation’s to Mothers on Fine and Gross Motor Developmental With Gender of 6 Month Old Infants

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Background: The first year of life, especially 6-8 months old is one of the most important evolutionary periods. The developmental capabilities of infants could be improved by mothers’ knowledge of suitable environmental stimulation. Because of the gender differences were inevitable in the evolution of developmental skills in infants. The aim of this study was to determine the relationship motor developmental stimulatory consultation’s to mothers on fine and gross motor developmental in 6 months old infants according to the gender conditions.

Methods: This quasi-experimental study with pretest-posttest was performed in Gorgan Health centers. Seventy two mothers with their 6 month infants who referred to health centers were selected using multi stage sampling method and placed randomly in two groups. Mothers in the intervention group consulted in 5 sessions weekly, each session was 90 minutes, in groups of 7-10 people. Data were collected using Denver-II before the intervention and after the 5 to 7 weeks of the intervention and analyzed using SPSS 16 by Mann-Whitney U and chi-square test.

Findings: The total number of sample was 49/9 girls and 55% boys (P=0/813). The mean age of motor development before the intervention in boys was (fine = 6/1 ± 0/43) and (gross = 5/6 ± 0/44) and in girls was (fine = 6/2±0/43) and (gross = 5/7 ± 0/5) (Pfine =0/535) (Pgross =0/263). Five weeks after consultation these variables in boys were (fine = 8/3 ± 1/6) and (gross = 7/25 ± 0/8) and in girls (fine = 8/6 ± 1/2) and (gross = 7/4 ± 0/8). A significant relationship wasn’t found between two gender (Pfine=0/261) (Pgross =0/48). In the seventh intervention, these variables in boys was (fine = 10/5 ± 1/5) and (gross = 8/5±0/1) and in girls was (fine = 10/01 ± 1/5) and (gross = 8/2±1/1). A significant relationship wasn’t found between two gender (Pfine=0/338) (Pgross =0/963).

Discussion and Conclusion: The findings of our study indicated that the motor developmental stimulatory consultation’s Based on “infant’s motor developmental stimulating packet” was effective on fine and gross motor developmental age increase significantly and gender did not influence the results. However, the role of other environmental and demographical factors in this field should be evaluated. Health care providers could provide group counseling of motor development stimulation to mothers for improving fine and gross motor developmental age in infants.

Keywords: Motor Developmental Stimulatory Consultation’s, Fine and Gross Motor Development, Gender Infant

Causes of Hospitalization of children in hospital Ziaee city of Ardakan (1390)

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Background: Children’s health and development in every country is one of the growth factors, To identify the cause of
hospitalization can be used to understand the causes of disease in children. Health and education programs that can be done to parents and preventive measures, the mortality avoided. Although in recent years due to increased health, child mortality has fallen sharply.

**Methods:** This descriptive study aimed to determine the cause of children admitted to hospital on 700 Ziaee city of Ardakan that medical records related to children up to age 12 who were admitted in 1390. The samples were selected using random sampling classification.

**Findings:** The greatest cause of hospitalization related to infectious and parasitic diseases (26.5%), Respiratory diseases (21.4%), diseases related to pregnancy (15.1%) are next in rank. The most common type of patients with gastroenteritis (22.7%) and pneumonia (13.3%) is.

**Discussion and Conclusion:** One of the causes of the high proportion of respiratory diseases due to air pollution is industrial city in the past few years. And due to the use of ground water, especially in summer, too, in the area of gastrointestinal disease related to high. Therefore, providing health and education programs to prevent and reduce gastrointestinal and respiratory diseases and diseases related to prenatal seems necessary.

**Key words:** Children, hospitalization, infectious diseases

**Importance of Differential Diagnosis of Gingival Enlargements & Diseases in Childhood**

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**Background:** Children and adults are susceptible to a wide variety of gingival diseases. Gingival enlargement is one of the frequent features of gingival diseases. The prevalence of gingivitis in developed countries was about 73% among the children between 6 and 11 years of old. Due to their different presentations, the differential diagnosis of gingival diseases becomes challenging for the clinician & dentists, hence some clinicians and dentists makes mistake about them. The short life span of the deciduous dentition can be the reason why generally, little attention is given to gingival diseases in children.

**Methods:** The purpose of this article is to highlight significant findings of different types of gingival disease and enlargements which could help clinicians and dentists to differentiate between them. For the purpose of clinical diagnosis, gingival enlargements mentioned in this review are mainly divided into isolated lesions (epulis) and regional or generalized gingival enlargements. Anatomical features and physiological gingival changes are considered for gingival diseases. Among these, diagnostic points are discussed for all types of entities.

**Findings:** Our research suggested that gingival diseases can occur from children to older ages. The general belief is that gingival diseases are only occur in adults but this review article shows a fact that the inception of gingival diseases could be from childhood as well. Early diagnosis is important for successful treatment and will prevent the development of gingival diseases.

**Discussion and Conclusion:** Though gingival health knowledge and therapy are increasing daily compared to earlier days, Oral cavity examination in children is becoming more important. Differential diagnosis of gingival diseases requires complete dental and medical history, careful examination and considering all etiologic or predisposing factors. The clinicians and dentists must have enough knowledge and consider all possibilities before reaching the final diagnosis.

**Keywords:** Differential Diagnosis, Gingival Diseases, Children

**Molecular detection of cytomegalovirus by PCR based on glycoprotein B gene**

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**Background:** Cytomegalovirus (CMV) is the most prevalence infections which transfer from mother to embryo. CMV is the cause of congenital infection and is known as spontaneous abortion in mothers. This virus can cross the placenta and cause clinical signs in embryo and infant. The aim of our study was to develop a PCR for diagnosis of this study detected glycoprotein B gene for the diagnosis of concomitant CMV.

**Methods:** PCR reactions performed with primers which targeted of the GB genes. PCR reactions were optimized using the specific primers. For the preparation of a positive control, the PCR products were cloned in a pTG19 plasmid. The same PCR reactions were done but in presence of genomes of various negative control bacteria for evaluation of test
specificity evaluation limit of detection for this test. Results: As expected, electrophoresis of PCR products of the GB was showed221bp band respectively. The result of colony PCR tests confirmed cloning of the target genes in the vectors. The result of amplification using negative control genomes as template was negative. Limit of detection of the GB gene calculated per each reaction 66 copy number.

Discussion and Conclusion: Molecular assay may be appropriate for clinical use, the rapidity; specificity and sensitivity of this procedure suggest that it can serve as a useful alternative method for inoculation of the laboratory of CMV GB diagnosis.

Keywords: Cytomegalovirus, PCR, glycoprotein B gene

Anti-TPO evaluation in patients with chronic idiopathic urticaria in Kurdistan province

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Background: Chronic urticaria is a skin disorder characterized by appearance of erythematous itchy wheals that last for more than 6 weeks. The prevalence of diagnosed chronic urticaria (CU) in 5EU countries (France, Germany, Italy, Spain, and the UK) is 0.51%. Very few studies have determined the prevalence of chronic idiopathic urticaria (CIU), thus the prevalence of CIU across the world is yet to be estimated. However CIU has a prevalence of 0.11% (0.15% in women and 0.07% in men) in the United States. Despite extensive searches only a minority of chronic urticaria cases has found to be attributed to a clear external cause such as physical stimuli; however the etiology of this disease is unknown in 80 to 90% of the patients therefore the term chronic idiopathic urticaria (CIU) is used for them. Recent studies propose that a range of 35% to 60% of these patients have IgG anti-FceRI autoantibodies and 5% to 10% have IgG anti-IgE autoantibodies in their serum which cause the release of histamine from mast cells and basophiles leading to small edema of the skin which is appeared by erythematous wheals. These auto-antibodies include thyroid autoantibodies (Anti-TPO), SLE related antibodies (ANA and anti-dsDNA) and Rheumatoid arthritis antibodies (Anti-CCP). The first indication of the existence of such antibodies was the autologous serum skin test (ASST), which is the intradermally injection of the patients on serum and was initially described in 1986. ASST has a sensitivity of about 70% and specificity of about 80%. Despite the known association of CIU and autoimmunity, the prevalence and significance of basophil-activating autoantibodies has not been clearly stablished in CIU. This study aims to determine the prevalence of basophil-activating and mast-cell IgG anti-FceRIα and IgG anti-IgE antibodies in patients with CIU.

Methods: In this randomized, cross-sectional study, adult patients with CIU referring to Kurdistan asthma and allergy clinic from April to August 2016 were enrolled based on the inclusion and exclusion criteria. All the patients were allowed to withdraw from the study at any phase. The primary inclusion criteria were the presence of erythematous itchy wheals occurring for 6 weeks or more. Patients with any known cause of chronic urticaria such as Physical Urticaria or food allergy were excluded from the study. Autologous serum skin test (ASST), was performed on all the patients in which 5cc blood was drawn from the patients’ antecubital vein, centrifuged and 0.1cc of the serum was injected into the patients forearm intradermally. 0.1mg/ml histamine as control positive and 0.1cc normal saline as control negative was injected intradermally into the patients forearm. After 30 minutes the injection sites were evaluated. Patients having wheal at the serum injection site with the diameter of 1.5mm more than the saline group were considered as autologous serum skin test positive(ASST+). For all the patients serology lab tests were requested and the results of Anti-TPO were evaluated. Comparison of each test results was also done based on the result of the skin test. Statistical analysis was done using SPSS19. All the general principles of Good Clinical Practice and the Declaration of Helsinki were considered in the study.

Finding: 150 CIU patients (97 females and 53 males) aged 19 to 64 entered the study and 6 of them left the study. 64% of the patients were ASST+ and 36% were negative. Anti-TPO was positive in 25% of CIU patients. Based on the result of the autologous serum skin test 36% of ASST+ patients were Anti-TPO positive which was significantly higher than the 10% positive in ASST- patients (p=0.040).

Discussion and Conclusion: This study shows that 25% percent of CIU patients have Anti-TPO autoantibodies. Anti-TPO was significantly higher in CIU patients. Their presence in patients with CU is thought to demonstrate the propensity of these patients to develop functional autoantibodies. They are not yet considered as the cause the disease independent of thyrotropin abnormalities, although there have been case reports of urticaria resolution with thyroid hormone supplementation. A significant elevation of Anti-TPO was

found in ASST+ patients compared to ASST- patients, which shows the elevation of autoantibodies in patients who are positive for the autologous skin test. Elevation of autoantibodies in serology of CIU patients shows the role of autoimmunity in CIU, likewise the presence of various autoimmune diseases in patients with chronic idiopathic urticaria has been well described. However studies show that inflammation in CU patients does not result solely from the consequences of mast cells or basophils histamine release, therefore more studies to determine the pathology of CIU is suggested.

Keywords: Anti-top, ASST, CIU

Assessment the knowledge and attitudes of physicians of north of Tehran health centers about guidelines for management of overweight and obesity among children in primary health care (PHC) in 2014

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Background: Obesity is a metabolic disorder characterized by increased body fat. Prevalence of it and physical and psychological problems associated in children worldwide are rapidly increasing. Preventing obesity problem such as reducing medical barriers, create protocols for providers and etc. are very dependent on health care systems. The present study aimed to assess the knowledge and attitudes of physicians in health centers on the guidelines for management of overweight and obesity among children

Methods: This is a cross-sectional study. The population of this study included physicians in north of Tehran health centers. This study is conducted for census and data are collected by using questionnaire and software SPSS was used for data analysis.

Findings: Of 37 physicians participating in this study, 35 persons were general practitioner, 1 person was pediatrician and 1 person was nutrition expert. 30 persons and 7 persons of participants were respectively female and male. 21 persons (56.8%) of them had accurate diagnose of overweight and obesity based on BMI z-score charts for age and sex.

Discussion and Conclusion: Physicians use textbooks, government manuals of ministry of health and etc. to assessment and treatment of overweight and obesity in children. Most of them believe that overweight in a child will effect on quality of life and catching chronic diseases. According to this study, knowledge and attitude of physicians does not have an appropriate level in management of obesity; thus training them in this field is necessary.

Keywords: knowledge, attitude, physicians, overweight and obesity, children

A Case Report of an Unsuccessful Liver Transplant & Death in a Child with Crigler-Najjar Syndrome Type I

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Background: Crigler-Najjar syndrome is a very rare autosomal recessive disease with an incidence of one case per million births. It has two distinct syndromes of congenital unconjugated hyperbilirubinemia; absent enzyme activity (type I) and impaired activity (type II). The main problem is the deficient activity of the enzyme uridine diphosphate glucuronosyltransferase (UGT). This syndrome often causes permanent nerve tissues and brain damage (kernicterus). The aim of this study is to present a child with Crigler-Najjar syndrome type I.

Case report: The patient is an 18-month-old male child with Crigler-Najjar Syndrome Type I with a history of hospitalization due to jaundice in the first week of life. Due to the high non-conjugated bilirubin, the disease was confirmed. The child is the result of the second pregnancy of a consanguineous marriage. The first child was born dead. Ultrasound of the kidneys and urinary tract did not show abnormalities. The child had liver transplant surgery at his six month age. After that, he had frequent hospitalization because of rectorrhagia and
fever. The child died at 19 month due to lymphoproliferative disorder.

Discussion and Conclusion: Crigler-Najjar syndrome was diagnosed at birth and treatments such as liver transplant were performed in the first months of life. There was no evidence for the common and dangerous complication of the disease, kernicterus. Since the prognoses for the patients are different, the child presented died due to a side effect of live transplant. Genetic counseling is highly recommended.

Keywords: Crigler-Najjar Syndrome, Hyperbilirubinemia, Liver transplant, Child

Effects of AN-PEP on gluten in celiac disease
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Background: Celiac disease is a chronic enteropathy caused by an immune response to gluten resulting in small intestinal mucosal injury and malabsorption. Gluten proteins are highly abundant in proline; digestion-resistant proline-rich peptides can reach the intestinal epithelium intact and can trigger an immune response. The aim of this review study is to investigate effects of a novel type of prolyl end protease from aspergillus Niger (AN-PEP) on gluten.

Methods: Using of PubMed and studying several article on the subject of AN-PEP Result: in the study of Greece tact and friends in the year of 2013; 16 patients consumed toast (approximately 7g/d gluten) with AN-PEP; after 2 week measured quality of life; serum antibodies; duodenal mucosa immune histology; the CD quality of life scores remained relatively high during 2wk; 14 patients were considered histologically stable on gluten with AN-PEP and serum antibodies of 16 patients didn’t increase. In the study of Mitea C and friends used a slice of bread was processed in the Tim system (in a dynamic system that closely mimics the human gastrointestinal) with and without co-administration of AN-PEP at time zero until 4hours after start of experiment samples of digesting meals were taken from the stomach; duodenum; jejunum and ileum compartments are shown AN-PEP accelerated the degradation of gluten in the stomach; also in the study of George Janssen(2015) was shown post-proline cutting enzymes like AN-PEP can degrade the immunogenic gluten peptides.

Discussion and Conclusion: AN-PEP enhanced gluten digestion in the stomach and no severe adverse events were reported but shouldn’t be used to replace a gluten-free diet although offering patients the possibility of abandoning occasionally their strict gluten free diet.

Keywords: Celiac disease, AN-PEP, Gluten

The Voice of Patient: Living With Friedreich’s Ataxia
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Background: Friedreich’s ataxia is an autosomal recessive hereditary neurological condition with symptoms of imbalance when walking, difficulty speaking, nystagmus, curvature of the spine, loss of sense of limb position. The disease usually appears between the ages of 5 and 25 years old. The aim of this study was to explore the lived experiences of a child with the disease Friedreich’s ataxia.

Methods: This study used a qualitative approach in 2015 a report that examines the experiences of living with the disease Friedrich’s ataxia, a 12-year-old son. To collect data the observations and semi-structured interviews were used. Interviews were recorded and transcribed, coded and analyzed thematically.

Findings: Data analysis showed that, despite much physical limitation for the patient, but the diseases was not able to prevent wishes and hopes and back to life. Three major themes of the thematic analysis "God loves me", "life is different, I am different", “hope and happiness” was extracted.

Discussion and Conclusion: Although Friedrich Ataxia is a very big challenge in the life of this child, but the child’s confidence and innate abilities enabled him to overcome his physical disability and chronic disease.

Keywords: Neurogenesis disease, ataxia Friedrich, qualitative case report

Brain abscess: an unusual complication of early onset meningitis
Mitra Ardakani Moghaddam

Background: Group B Streptococcus (GBS) is a leading cause of neonatal sepsis and meningitis, as early or late onset disease. GBS meningitis is the most serious manifestation of late onset disease but unusually it can happen earlier, just few hours
after birth. GBS meningitis is associated with 30% mortality and 25% serious adverse neurological outcomes. Intrapartum antibiotic prophylaxis could reduce the incidence of early onset but not late onset GBS infections. Herein we report a case of early onset GBS meningitis in a female infant with brain abscess.

**Case presentation:** A 3-day female was presented to the Emergency department with history of proofreading, irritability; jitteriness and probable seizure from first day of the life. A sepsis work up and lumbar puncture were performed. Treatment with Ampicillin and Cefotaxime and Phenobarbital was started and she was transferred to NICU. GBS was isolated from both blood and CSF cultures. Her hospital course was complicated by recurrent and intractable seizures, necessitating the use of Topiramate and Levetiracetam despite maximal anticonvulsive therapy. Cranial Sonography revealed intraparanchymal hemorrhage and brain MRI performed on 9th day of hospitalization showed micro abscesses. After 31 days of medical therapy, our patient appeared well and was discharged on Phenobarbital and Levetiracetam. **Conclusion:** Although GBS is a normal flora of 15-30% of women’s genitourinary tracts, routine screening and treatment of GBS positive women could decrease such serious complications. Maternal immunization against GBS is a promising preventative strategy not only for neonate but also for maternal diseases.**

**Keywords:** Group B Streptococcus, early onset sepsis, meningitis, brain abscess

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**Universalis Calcinosis as a Cause of Death in Polymyositis, a Case Report**

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**Background:** Juvenile dermatomyositis (JDM) is the most common cause of chronic idiopathic inflammatory myopathies during childhood. Juvenile polymyositis (JPM) is a chronic myositis without cutaneous changes. Calcinosis is common complication of JDM and JPM in late stage of the disease. **Case presentation:** We are reporting a 9 years old boy had referred to our hospital with muscle weakness and increase of CPK and aldolase without any skin signs. He was treated with the diagnosis of post viral myositis and discharged. But he returned some weeks later with intensification of muscle weakness. Corticosteroids were started for him with the diagnosis of polymyositis.

Two years later, when his disease was in remission, he returned us with acute abdominal pain and was operated with the diagnosis of perforated appendicitis. Again two years later he came with gastrointestinal (GI) manifestations such as vomiting and GI bleeding. He had fever, malaise and abdominal pain that were admitted with primary diagnosis of partial obstruction. In physical examination, he was ill and febrile and had tachycardia and hypotension. Heliotrope rash, macular hyper pigmented lesions and skin calcinosis was observed on his upper limbs and trunk. His abdomen was distant, tender and had not defecation for any days. Thus with the diagnosis of paralytic ileus due to electrolyte disturbance and septic shock was treated by antibiotics and electrolyte imbalance was corrected. But because of not response to conservative treatment necrotic bowel was resected and fixed ileostomy. Total bowel was edematous and dilated and calcified.

Ten days after operation the patient was again febrile and had pusy discharge from the cite of incision. Antibiotics were changed based on antibiogram. But 5 days later he affected by respiratory distress and the saturation of O2 was decreased that resulted to intubation. Chest X-Ray had consolidation, pneumatoceel and universalis calcinosis. Unfortunately 3 days later he died due cardiopulmonary arrest following universalis calcinosis in the chest and abdomen.

**Conclusion:** Although calcinosis is a common complication of JDM and JPM, mortality due to this complication is very rare. Calcinosis in pulmonary and GI system should be considered in patients with GI or pulmonary symptoms in in the late stage of JDM and JPM. **Keywords:** Dermatomyositis, Polymyositis, Calcinosis, Gastrointestinal involvement, Mortality

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**Assessment of physical health status of students in Qom city**

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**Background:** The most of physical and mental changes happen in childhood, so attention to prevention from illnesses among children are from the first priorities. Also children who are students have significant sanitary problems and attention to hygiene and treatment condition of these people have an special importance, therefore this study performed with the goal of determination of physical health status of students in Qom city.

**Methods:** this cross-sectional design was conducted among 400 students in 5-7 years selected by convenience sampling. This study was performed in 2015 using “student’s health primary and medical evaluation form” that included demographic data, weight, height, BMI, hearing and vision disorders and mouth and tooth problems. Data were analyzed with distribution, percentage, mean, standard deviation and T-test and chi-square test

**Findings:** The median of height and weight of girls and boys less than the median of standard growth. In the hearing and vision examination, %1.6 of students had vision disorder in one or both of eyes, %0.8 had hearing disorder in one or both of ears, %86.3 had tooth decay, %6.3 had pediculosis and %12 of students had unstable nutrition condition.

**Discussion and Conclusion:** According to results of present study, the physical health of students was undesirable. It is been recommended so doing self-care programs, attentiveness to the mouth and tooth hygiene, correct nutrition and exercise.

**Keyword:** physical health, disorders, students

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**A case of leukemic child complicated with cytomegalovirus**

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**Background:** Although cytomegalovirus (CMV) disease has been recognized in immune compromised settings; it is extremely rare among hematologic cancer patients without stem cell transplantation. Only few case reports have been published regarding CMV disease among acute lymphoblastic leukemia (ALL) patients which are confined to retinitis and pneumonia. **Case presentation:** 17 months old boy who was the known case of T cell ALL since his 8 months old was admitted to our department presenting with frequent blood streaked diarrhea associated with neutropenia. Symptoms were resistant to different antibiotics against known opportunistic pathogens and during the admission abdominal distention, generalized edema, recurrent high grade fever (>39 °C), hematuria, dysentery and huge hepatosplenomegaly added to his prior symptoms. Laboratory testing was as following: PT=21, INR=2.66, PTT=44, WBC=2900, Hb=12.4, PLT=8000, AST=77, ALT=119, ALP=156, Alb=2.1, ESR=45, CRP=107, Stool exam (WBC=many, RBC=30), tests were negative for Clostridium difficile toxins. Increment in thickness of large bowels, mild free fluid in abdominal and pelvic spaces was revealed in abdominal sonogram. With the suspicion to CMV colitis PCR analysis of stool was performed which was positive (2000 IU/ml) and patient showed dramatic response to intravenous Ganciclovir treatment (50mg BD). Eventually he was discharged and further chemotherapy session continued afterward. **Conclusion:** To the best of what we have reviewed in the literature this is the first case of CMV colitis in the setting of pediatric ALL. Although it is not a common presentation in leukemic patients, it still causes great deal of morbidity. This case proposes CMV as a possible cause of opportunistic infection among leukemic patients.

**Keywords:** Acute T cell lymphoblastic leukemia, cytomegalovirus, colitis, pediatric

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**Audiological and cognitive problems in children with benign epilepsy with Centro-temporal spikes**

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**Background:** Benign focal epilepsy in childhood with Centro-temporal spikes (BECTS) is one of the most common types of idiopathic epilepsy, with onset from age 3 to 14 years. Auditory event-related potentials (AERPs) are objective method to measure auditory processing at the level of the brain stem and cortex as, ERPs following target stimuli showed significantly higher amplitude in the epilepsy group over frontal and central region thus, detect and reliably reveal cortical excitability in children with typical BECTS that might be at risk for language deficits and school difficulties. These children have different problems such as speech recognition impairments that reflecting dysfunction of nonprime auditory cortex, with the presence of N100 and MMN to tones but the absence of MMN to speech stimuli that have abnormal processing of auditory information at a sensory level ipsilateral to the hemisphere evoking spikes during sleep. Amplitudes of the ERPs during the
target condition of the visual working memory task were
significantly higher in the epilepsy group, especially in the
frontal and central regions. It is assumed that the amplitude of
an ERP wave reflects the intensity of information processing,
while the latency indicates the timing in which certain
subroutines in the brain are activated. Therefore it seems that
children suffering from epilepsy put greater effort to properly
discriminate a target stimulus from a no target stimulus and
are at higher risk of memory deficits, especially affecting short-
and long-term memory, with verbal and non-verbal material.
Understanding the pathophysiology of neuropsychological
BECTS, may also have important rehabilitative implications.
Indeed, an early evidence of dysfunctional networks and
associated neuropsychological deficits can lead to prompt
intervention, elaborating learning plans to compensate the
internal functional interference in memory acquisition and to
reduce the risk of persisting difficulties.

Keywords: Epilepsy, AERPs, Memory

Discriminate Between Iron Deficiency Anemia and
Beta Thalasemia Trait by Assessment of Hematological
Indices in Hypochrome Microcytic Anemia Patients

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Background: hypochrome microcytic anemia is one of the
most common types of anemia which is mostly due to iron
deficiency and minor thalassemia. Differentiation of these two
diseases, from therapeutic and preventive points of view, is
very important. There are different way of differentiate these
disease that some of them are expensive and inapplicable in
most of laboratories. Our aim is to study hematological indices
in these two groups to determine the sensitivity and specificity
of them and recommend the easiest and most reliable
diagnostic method.

Methods: This diagnostic case series study was done on 125
hypochrome microcytic anemia patients referring to shahid
sadoughi hematologic clinic from 2015 until 2016. 17 cases
were excluded as they were under treatment. Serum iron,
TIBC, serum ferritin and electrophoresis of all 108 recruited
patients were checked. According to the laboratory finding,
patients were divided into 3 minor thalassemia (40 cases), iron
deficiency (50 cases) and mixed (18 cases) groups. The last
group was excluded from our study. Finally 90 patients were
included and all hematological indices were check through a
CBC test evaluated in a single laboratory by a single device. His
results were analyzed by SPSS version 15 software using ROC
curve to determine the sensitivity and specificity of indices.

Findings: according to our finding, there was no significant
differences between WBC and platelets of two groups, but the
differences of Hb, MCV, RBC count, RDW, MCV/RBC
and (RDW) MCV/RBC index between two group were statically
significant.

Discussion and Conclusion: It should be noted that RDW, MCV
and MCV/RBC were the most sensitive and specific indices to
differentiate minor thalassemia from iron deficiency anemia.

Keywords: Key words: iron deficiency anemia, minor
thalassemia, hematological indices

The Impact of Allergic Rhinitis on Quality of Life: a
Study in Kurdistan

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Background: Chronic diseases due to their prolonged and
debilitating nature, affect patients quality of life dramatically.
Allergic rhinitis (AR) is one of the most common chronic
diseases. The present study aimed to determine quality of life
in the patients with allergic rhinitis.

Methods: In a cross-sectional study, 146 patients with AR were
enrolled in this study. The required data were collected using
the Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ).
The questionnaire was distributed among the patients by a
physician and analysis of data was carried out by SPSS version
16.

Findings: Of the total of 146 AR patients admitted to the clinic,
61% were female and 39% were male and had a mean age of
29±10.17. Rhinorrhea (82.2%) was the most common
symptom and moderate to severe intermittent rhinitis (38.4%)
was the most common type of the disease. A dramatic
reduction in quality of life was observed in 62% of the patients,
and severity of the disease reduced significantly the quality of
life (P=0.000).

Discussion and Conclusion: Allergic rhinitis can
adversely affect every aspect of a patient’s life, including sleep
quality, mood and daily activities.

Prevalence of malnutrition among children under 5 years in
Fasa city in the year 2015

Keywords: Allergic rhinitis, quality of life, western Iran
Prevalence of malnutrition among children under 5 years in Fasa city in the year 2015

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Background: Evaluation of growth curves in children is a good way to understand the child’s health and nutritional status. Measuring height and weight help us to identify malnutrition before the onset of clinical symptoms at an early stage. Therefore, this study aimed to determine the prevalence of malnutrition in children less than 5 years with anthropometric measurements in Fasa in 2015.

Methods: This research was a descriptive study. Data collected from urban and rural health centers. This data included information about measurements of height and weight in children less than 5 years who were looked after in urban and rural health centers. The rate of malnutrition on the basis of weight for age and height for age were measured and compared with NCHS-WHO table.

Findings: The findings of this study showed that the prevalence of stunting (height for age), underweight (weight for age) and also overweight and obesity (weight for age) among children under five years were %1.1, %1.4 and %1.8 respectively.

Discussion and Conclusion: The results of this study show that protein-energy malnutrition in the city of Fasa is less than previous years and also represents the improving performance of health centers and families, but it must be programmed to reduce malnutrition through education.

Keywords: malnutrition, underweight, overweight and obesity, stunting

Severe anemia and hydrops in a neonate with parvovirus B19 infection: A case report

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Background: Anemia at the time of birth may cause some problem like asphyxia, heart failure shock or even death in a neonate. Different etiologies can be considered for this problem. Parvovirus B19, as a viral organism, can cause hydrops fetalis and neonatal anemia and consequent complications. We present here a case of newborn infant with severe anemia who had human parvovirus B19 infection.

Case Presentation: A male newborn with gestational age of 36 week was born from a mother with poor prenatal care and history of contact with domestic animal. The neonate was very pale with Apgar score 2 at 1 min and received resuscitation, mechanical ventilation and repeated blood transfusion the hemoglobin level was significantly low. Analysis was made based on the clinical presentations. According to the case history, physical and laboratory findings, neonatal severe anemia induced by parvovirus B19 infection was suggested and Laboratory work up documented his infection with parvovirus B19. Conclusion: Parvovirus B19 (B19 virus) is the smallest single strand linear DNA virus in animal viruses, which is the only strain of parvovirus that is pathogenic in humans. Human parvovirus B19 may cross the placenta and result in fetal infection, morbidity and death. Parvovirus is an uncommon cause of neonatal anemia and hydrops fetalis so this etiology must be considered in differential diagnosis of anemia at birth.

Keywords: hydrops fetalis, anemia, parvovirus infection

Surveysing prevalence of malnutrition and the effective factors in children under 6 years old, Qom, 2015

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Background: malnutrition is a health problem and one of the main causes of mortality in the developing countries in particular. The problem leads to negative physical and mental side effects. It is one of the most common and prevalent factors in decrease of life expectancy and health among children. The present study is aimed at determining prevalence of malnutrition and the effective factors in children below six-years old based on the standards of WHO.

Methods: A cross-sectional study was carried out on 286 children under six years old in four urban districts of Qom City. The subjects were selected through multi-stage cluster sampling. Along with height and weight of the children, demographics of the children and their parents were recorded via interviewing the mothers. Prevalence of malnutrition was determined based on three indices of weight to age (low weight), weight to height (thinness), and height to age (shortness). The collected data was analyzed in SPSS (v 21).
Findings: Boys and girls constituted 48.6% and 51.39% of the participants. According to the standards, 6.28% of the children had severe and moderate low weight. Prevalence of low weight in the girls and boys were 4.31% and 8.16% respectively. As to height to age index, 8.04% of the children had severe and moderate shortness. Prevalence of shortness in the girls and boys were 7.2% and 8.86% respectively. With regard to weight to height index, 6.66% of the participants suffered from severe and moderate thinness. Prevalence of thinness in the girls and boys were 5.75% and 7.48% respectively.

Discussion and Conclusion: The survey showed that malnutrition is a problem among children in Qom city. Although, a decrease in prevalence of malnutrition was observed comparing with previous studies, there are still needs for more efficient measures to achieve an ideal society.

Keywords: children under 6 year’s old, malnutrition

A Rare Case of Neuroblastoma with Presentation of Diarrhea and Resistant Hypokalemia

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Background: Neuroblastoma is the most common extracranial solid tumor in children and the most commonly diagnosed malignancy in infant. Some tumors release vasoactive intestinal peptide (VIP), causing a profound secretory diarrhea.

Case Presentation: We are reporting a 33 month old girl with the complaint of intermittent diarrhea from 9 month ago. Her diarrhea was watery and voluminous, 3–4 times a day. Also she had sometimes vomiting and abdominal pain and blowing. She had 4 kilogram decrease in weight duration of 9 month. In laboratory tests she had hypokalemia and hyponatremia resistant to treatment. Her diarrhea was improved with NPO and Octreotide. Her sonography revealed distended loops with much fluid. In her 24hour urine had increased VMA. In her endoscopy esophagus and stomach and D1 were normal but D2 had decrease in the size of villus and scalloping in some points. In her colonoscopy had nodularity in descending colon and decrease of vascular pattern. A chest CT was performed for her. The findings were a large posterior mediastinal right paravertebral soft tissue mass about 49×41×65mm with fine calcified foci, minimal reactive pleural effusion without evidence of lung involvement that was most likely suspected mediastinal neuroblastoma. In MRI the mass was hypo signal in T1 and hyper signal in T2 with spreading to spinal cord from neural foramen that had changed the site of thecal sac but had not pressure effect on the neural cord. At the end the mass was excited totally from right thoracotomy and her diarrhea and hypokalemia was improved

Keywords: Neuroblastoma, Diarrhea, Hypokalemia