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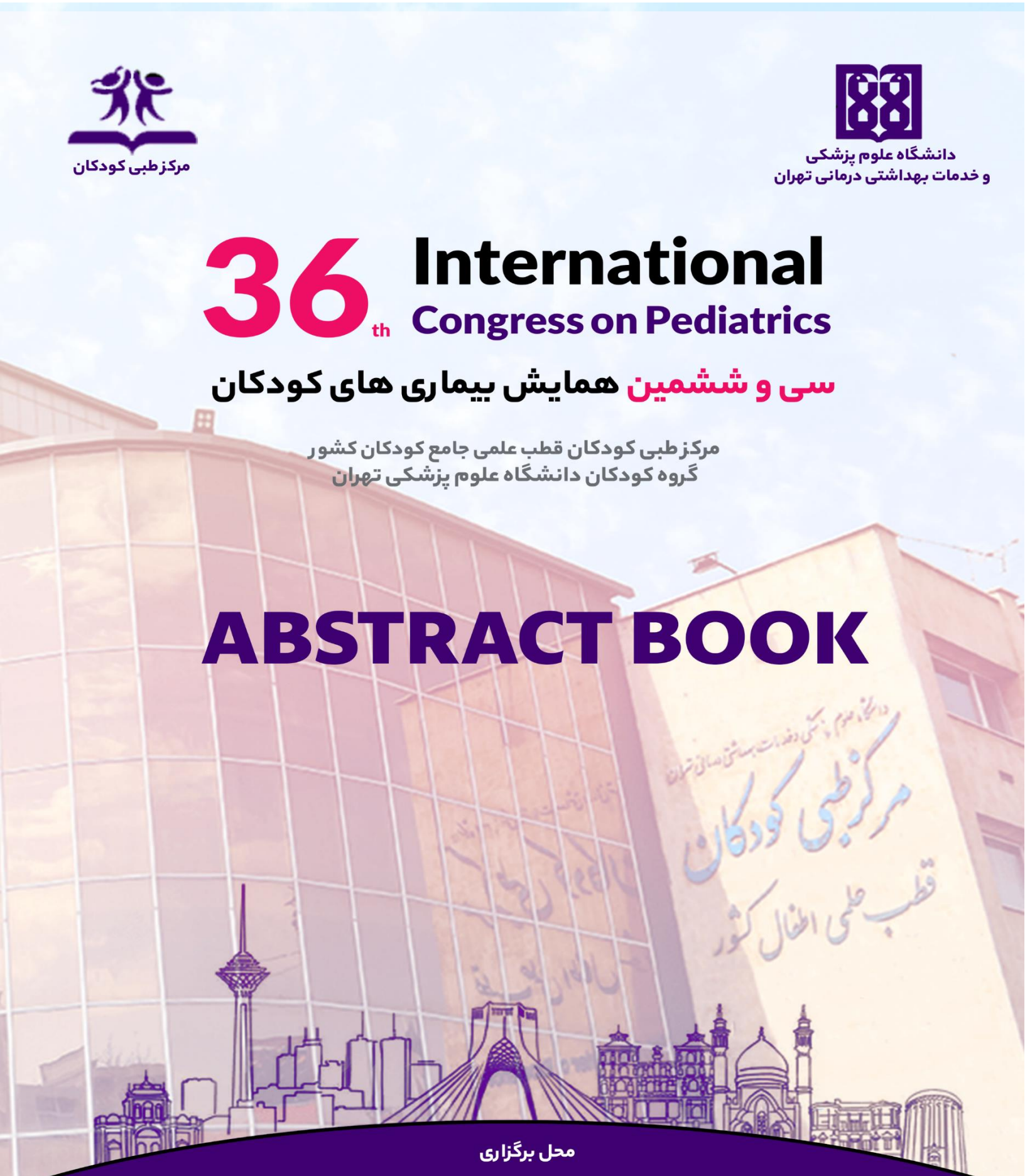
ABSTRACT BOOK



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پیـــام رئیس همایش

استادان ارجمند، همکاران گرامی، یاران گرانمایه

سی و ششمین همایش سالانه بین المللی بیماریهای کودکان طبق تجربه و وظیفه هر سال در دانشگاه علوم پزشکی تهران به عنوان قدیمی ترین مرکز آموزشی طب کودکان در میان دانشگاه‌های کشور افتخار دارد هر سال میزبان متخصصین و فوق تخصص های بیماریهای کودکان، گرایش های مختلف جراحی های کودکان پزشکان عمومی، رشته های تخصصی و فوق تخصصی مرتبط با کودکان، رادیولوژی کودکان، پزشکی اجتماعی و محققین رشته های مختلف علوم پایه (ژنتیک، بیوشیمی، سلول های بنیادی، ایمونولوژی و...) موضوع و زیرساخت جوانی جمعیت و سایر رشته های مرتبط با کودک سالم و بیمار باشد. این کنگره افتخار دارد تاکنون برگزاری سی و پنج دوره همایش را با موفقیت به عهده داشته و سهم بسزائی در ارتقاء علمی کشور در این رشته ایفا نماید. پس از موفقیت در ارتقاء سلامت کودکان در کشور، کاهش مرگ و میر کودکان و کنترل بیماریهای اسهالی و تنفســـی، در چند سال اخیر محور موضوعات مورد توجه برگزارکنندگان بوده است. با اعتقاد بر لزوم همکاری بخشهای مختلف پزشکی در همایشهای علمی این همایش طی تقریباً سه دهه گذشته در دو بخش پزشکی و پرستاری برگزار شده است تا همکاران گروه پرستاری نیز فرصت بازآموزی دانش در زمینه طب کودکان و فرصت تبادل تجربیات علمی با یکدیگر و با همکاران پزشک را داشته باشند. طی ١٦ سال گذشته نیز با باور نقش کلیدی محققین جوان و دانشجویان گروه های پزشکی در ارتقاء علمی کشور، بخشی با عنوان همایش محققین جوان طب کودکان با همکاری کانون استعدادهای درخشان و مرکز پژوهشهای دانشجوئی دانشگاه علوم پزشکی تهران به این همایش افزوده شده که مورد استقبال دانشجویان قرار گرفته است. این روند در همایش سی و ششمین نیز ادامه خواهد یافت هدف از این اقدام جلب مشارکت دانشجویان و دستیاران به حیطه تحقیقات طب کودکان و نوجوانان کشور است و همچون سال های گذشته در این بخش به مقالات برگزیده در بخش سخنرانی و پوستر جوایزی تعلق خواهد گرفت. همچنین در سال جاری به ارائه تجربیات و نظریات تخصصی صاحبان فرایند سلامت جنین، کودکان و نوجوانان و نقش عملی و کاربردی هوش مصنوعی و تکنولوژی سلول درمانی در پزشکی کودکان توجه خاص مبذول شده است.

دکتر علی اکبر زینالو (رئیس همایش)

پیـــام دبیران همایش

گذر زمان این افتخار را نصیب گروه کودکان دانشگاه علوم پزشکی تهران و مرکز طبی کودکان قطب علمی کودکان کشور کرد تا در سی و ششمین همایش بیماری‌های کودکان دانشگاه علوم پزشکی تهران که بمدت ٤روز از تاریخ ۱۲ مهر ۱٤۰۳ مرکز همایش های بین المللی نورالرضا (سروش) برگزار می گردد، در خدمت جامعه پزشکی طب کودکان کشور باشیم. ارتقاء کیفیت همایش با توجه به نظرات اساتید، متخصصین و فراگیران طب کودکان همواره مد نظر برگزار کنندگان همایش می باشد.

در همایش امسال ۲۱ Teaching Course دو ساعته جهت ارائه مسائل رایج طب کودکان در نظر گرفته شده است که امیدواریم با کمک اساتید برجسته آن موضوع کارگشای شرکت کنندگان باشد .

۱۹ پانل ٦۰ تا ۱۲۰ دقیقه ای جهت جنبه های نوین تشخیص و درمان، علوم جدید کاربردی، رشته های مرتبط با طب کودکان شامل جراحی، رادیولوژی و آزمایشگاه برنامه ریزی شده است.

رضایت محققین جوان و دانشجویان پزشکی در بهره مندی از تجربیات اساتید پیشکسوت در پانل محققین جوان در سال قبل بر استمرار و اغنای این برنامه در همایش امسال مهر تأیید زد و لذا دو پانل جهت محققین جوان در نظر گرفته شده است.

اعلام فراخوان جهت ارسال مقالات به صورت سخنرانی و یا پوستر از ویژگیهای سی و ششمین همایش بوده است که انتخاب ۳۰ مقاله جهت سخنرانی و بقیه مقالات تا مهلت اعلام شده جهت ارائه به صورت پوستر در نظر گرفته می شود.

همایش همزمان در سه سالن و جهت برگزاری کارگاه های پیش بینی شده از جمله کارگاه تکامل در بعضی از روزها در ٤ سالن برگزار خواهد شد .

هر روز از ساعت ۸:۳۰-۸:۰۰ در سالن اصلی سخنرانی های کلیدی جهت کاربرد هوش مصنوعی در آموزش، پژوهش و درمان برگزار می گردد.

بهره گیری از تجربیات بیش از ۳۰۰ نفر از اعضای هیئت علمی کودکان و فوق تخصص های مربوطه و رشته‌های مرتبط با کودکان و اساتید علوم پایه سراسر کشور از ویژگی های این همایش است .

مطالب و مقالات پذیرفته شده همایش به صورت کتابچه و در انتهای همایش به صورت الکترونیک منتشر و در اختیار شرکت کنندگان قرار خواهد گرفت .

امیدواریم تغییر زمان همایش امسال باتوجه به همزمانی برنامه سال قبل با بعضی از برنامه های آموزشی و پژوهشی کودکان موجب حضور بیشتر همکاران در همایش امسال باشد. حضور حداکثری اساتید، همکاران گرامی و فراگیران در بزرگترین همایش کودکان کشورمان می تواند ضمن ملاقات همکاران در محیطی دوستانه، بهره گیری از مسائل رایج و نوین طب کودکان و تبادلات علمی و عملی کمکی در جهت اعتلای سلامت و تربیت فرزندان سالم کشور باشد .

کمیته علمی و اجرایی همایش از کلیه همکاران برای شرکت در همایش دعوت می نماید و مقدم شما را گرامی می‌دارد.

دکتر رضا شروین بدو
رئیس مرکز طبی کودکان
قطب جامع علمی کودکان

دکتر محمودرضا اشرفی
دبیر علمی همایش

پیـــام دبیر اجرایی همایش

بسیار خوشحالیم که به شما در سی و ششمین همایش بیماری های کودکان و بیست، از مهمترین رویدادها در زمینه مراقبت های بهداشتی کودکان، خوش آمد می گوییم. این همایش ها که به میزبانی مرکز طبی کودکان، قطب آکادمیک پیشرو در زمینه اطفال در کشور برگزار می شود، سنگ بنای متخصصان داخلی و بین المللی برای جمع آوری و به اشتراک گذاری تجربیات و دانش ارزشمند خود است.

امسال مفتخریم که بیش از ۲۰۰۰ شرکت کننده در رشته های مختلف از جمله مغز و اعصاب، قلب و عروق، گوارش، ریه، بیماری های عفونی، آسم و آلرژی، روماتولوژی، اورولوژی، نفرولوژی، غدد، جراحی کودکان و نوجوانان و بسیاری دیگر داشته باشیم. کنفرانس ما همچنین موضوعات مهمه پرستاری کودکان و نوزادان، مراقبت های ویژه، اخلاق حرفه ای و مراقبت های تسکینی را پوشش می دهد و بستری جامع برای یادگیری و همکاری فراهم می کند.

سخنرانان برجسته ما شامل برخی از باتجربه ترین و مشهورترین متخصصان بیماری های اطفال و نوزادان و همچنین چهره های برجسته پرستاری کودکان از دانشگاه های سراسر کشور می باشند. ما همچنین خوشحالیم که به سخنرانان برجسته بین المللی، چه به صورت مجازی و چه حضوری، که بینش ها و پیشرفت های خود را در مراقبت های بهداشتی کودکان به اشتراک می گذارند، خوشامد می گوییم.

همایش امسال از ۱۲ الی ۱۵ مهرماه ۱۴۰۳ در مرکز همایش های بین المللی سروش تهران با ظرفیت پذیرش ۲۰۰۰ شرکت کننده برگزار می شود. این برنامه به طور همزمان در چهار سالن اجرا می شود و همچنین دسترسی آنلاین را برای شرکت کنندگانی که نمی توانند شخصاً به ما ملحق شوند تضمین کرده ایم.

ما مشتاقانه منتظر یک رویداد سازنده و روشنگر هستیم و مطمئن هستیم که بحث ها و دانش به اشتراک گذاشته شده در اینجا به طور قابل توجهی به پیشرفت مراقبت های بهداشتی کودکان کمک می کند.

دکتر مجنون دبیر اجرایی کنگره

ارائه مقالات به صورت سخنرانی

Oral Presentation

Cardiology

How to Manage Acute myocarditis and congestive heart failure in children

Ali Akbar Zeinaloo [1] © Ⓟ, Koorosh Vahidshahi [2]

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Abstract: Myocarditis is an inflammatory disease of the myocardium with multiple causes. Presentation can vary widely, from subclinical disease to cardiogenic shock, arrhythmias, and sudden cardiac death. Viruses are the most frequent cause of myocarditis in children. The two main classes of nonrheumatic myocarditis are infectious and generalized autoimmune variants. Parvovirus B19 and human herpesvirus are most frequently identified viruses. SARS-CoV- 2 infection has also been associated with myocarditis. Frequent manifesting symptoms include fatigue, shortness of breath, fever, nausea/vomiting and abdominal pain, rhinorrhea, chest pain, cough, palpitations, and diarrhea. Symptoms at presentation usually reflect a viral prodrome, manifestations of congestive heart failure, and/ or arrhythmias. As these symptoms may be non-specific, incorrect initial diagnosis is common. Cardiac biomarkers, including troponin and creatinine kinase, reflect myocardial injury and are elevated in most patients. Troponin levels can help distinguish chronic dilated cardiomyopathy from myocarditis, although there is overlap between both groups. BNP and N-terminal pro-BNP (NT-proBNP), though not specific for myocarditis, are often elevated in affected patients. Diagnosis of viral myocarditis is generally based on history of a recent viral infection, viral cultures and PCR testing. However, the diagno¬sis is often based on the exclusion of other possible etiologies rather than positive identification of an etiologic agent. Chest X Ray, ECG, echocardiography, Cardiac MRI, and Endomyocardial biopsy are essential tools in diagnosis of myocarditis and acute congestive heart failure. Management of myocarditis includes hemodynamic support, treatment of arrhythmias, and immunomodulatory therapy. All patients should be carefully monitored, as clinical status may quickly deteriorate. Patients with depressed ventricular function may require pharmacologic management of heart failure, which can include diuretics, afterload reducing agents, inotropic support, mechanical ventilation, and/or MCS. IVIG has anti-inflammatory, antiviral, and immuno-modulatory effects. IVIG is generally recommended due to the considerable risk of death and antiviral medications have not been rigorously tested for the treatment of myocarditis. Corticosteroids in some cases is recommended. The course of myocarditis is highly variable; outcomes range from complete recovery (up to70%), to progression to chronic dilated cardiomyopathy (up to 40%), to death or transplantation (6 to20%).

Key Words: acute myocarditis, viral. CHF, children. SCD

Cardicology

Coronary assessment in patients suspected of MISC vs KD

Mojtaba Gorji [1] © ℗

[1] **TUMS.Children's medical centers of excellence.pediatric cardiology ward**

Abstract: Examination of the coronary arteries in terms of normal size or the occurrence of ectasia and aneurysm has a very important role in determining the severity and prognosis of Kawasaki disease and Misc. Due to the high prevalence of this disease and the involvement of the coronary arteries following corona, a detailed examination of the coronary arteries is important. The existence of various vascular shadows and spaces and recesses around the vessels and vascular normal variations, along with the difficulty of depicting the coronary vessels, is one of the serious problems of coronary artery examination. Here, some challenges in the diagnosis of coronary artery ectasia are briefly mentioned to Be a pioneer for pediatric cardiologist s.

Cardicology

Episodes of dysrhythmia in an infant with familial glucocorticoid deficiency

Reza Shabaniyan[1] © ℗

[1] Associate professor of pediatric cardiology, Hakim children hospital, Tehran university of medical sciences, Tehran, Iran

Abstract: A five-month-old infant with the history of 7 days hospitalization due to neonatal hypoglycemia was referred for the assessment of syncopal event. There was episodes of cyanosis, hyperhidrosis and faint. Echocardiography revealed mild interventricular septal hypertrophy. 24 Hour ECG Holter monitoring revealed sinus pauses of more than 2 seconds and tachycardia in favor of sick sinus syndrome or sinus node dysfunction. Metabolic screening revealed elevated liver enzymes and high level of ACTH. Cortisol level was low and not increased after corticotropin test. Hydrocortisone was commenced with the diagnosis of familial glucocorticoid deficiency. After glucocorticoid therapy there was no further report of syncopal attack. Sinus node dysfunction is a rare manifestation of familial glucocorticoid deficiency.

Cardicology

Hypertension and cardiovascular risks

Parvin Akbariasbagh [1] © ℗

[1] Professor of ped. Cardiologist ; Imam Khomeini Complex Hospital; Tehran University of Medical Sciences

Abstract: hypertension, can quietly damage the body for years, before symptoms appear. without treatment , high blood pressure can lead to disability a poor quality of life, or even a deadly heart attack or stroke . hypertension is one of the strongest risk factors for almost all different cardiovascular disease acquired during life, including ; coronary disease , left ventricular hypertrophy and valvar heart disease, cardiac arrhythmias including atrial fibrillation. Blood pressure is measured in (mmHg) in general. Hypertension is a blood pressure reading of 130/80 mmHg or higher. Treatment and lifestyle changes can help control high blood pressure to lower the risk of life- threating health conditions.

Keyword: Hypertension, cardiovascular, risks.

Cardicology

Management of Pediatric Heart Failure

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Abstract: Pediatric heart failure is a growing concern in pediatric cardiology, requiring innovative treatment approaches to improve outcomes and quality of life for affected children. Recent advances in the management of pediatric heart failure include the development of targeted therapies, mechanical circulatory support, and personalized medicine. Pharmacological innovations, such as novel neurohormonal modulators and gene therapies, are showing promise in stabilizing heart function and reducing disease progression. Additionally, improvements in ventricular assist devices (VADs) have expanded the use of mechanical support in children awaiting heart transplantation. Emerging precision medicine techniques, including genetic profiling and biomarker-driven strategies, are enabling more individualized treatment plans tailored to each child's unique condition. Together, these advancements are revolutionizing the treatment landscape, offering new hope for pediatric patients with heart failure. However, further research is needed to validate long-term outcomes and optimize these therapies for broader clinical use.Pediatric heart failure is a growing concern in pediatric cardiology, requiring innovative treatment approaches to improve outcomes and quality of life for affected children. Recent advances in the management of pediatric heart failure include the development of targeted therapies, mechanical circulatory support, and personalized medicine. Pharmacological innovations, such as novel neurohormonal modulators and gene therapies, are showing promise in stabilizing heart function and reducing disease progression. Additionally, improvements in ventricular assist devices (VADs) have expanded the use of mechanical support in children awaiting heart transplantation. Emerging precision medicine techniques, including genetic profiling and biomarker-driven strategies, are enabling more individualized treatment plans tailored to each child's unique condition. Together, these advancements are revolutionizing the treatment landscape, offering new hope for pediatric patients with heart failure. However, further research is needed to validate long-term outcomes and optimize these therapies for broader clinical use.

Cardicology

modifiable risk factors for prevention in pediatric cardiology

Toktam Sheykhian [1] © ℗

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Abstract: Preventive Cardiology Cardiovascular disease (CVD) is the leading cause of death and disability. The major risk factors for CVD, including hypertension, elevated low-density lipoprotein (LDL) cholesterol, and low high-density lipoprotein (HDL) cholesterol, have their antecedents in childhood. Pediatric cardiologists may be asked to evaluate and manage these conditions in youth with diseases associated with an increased CVD risk (e.g., type 2 diabetes mellitus) and during the usual care of their patients with congenital heart disease, particularly those who are at an increased risk for hypertension. Elevated blood pressure (previously called "prehypertension") and hypertension refer to a high systolic blood pressure, a high diastolic blood pressure, or both. In adults, thresholds for hypertension is based on levels associated with the risk for CVD. In childhood, cut points for abnormal blood pressure is based on population distributions and have been determined by consensus because there is limited data about the relationship between blood pressure and CVD endpoints. Elevated blood pressure readings are rather common in childhood, but diagnosed hypertension affects fewer youth. Dyslipidemia refers to an abnormality in the cholesterol or triglyceride content of the lipoproteins including one or more of the following: (1) an elevated triglyceride level (i.e., hypertriglyceridemia); (2) a low HDL cholesterol level; (3) an elevated LDL cholesterol; or (4) a combination of these abnormalities. Obesity is an important driver of dyslipidemia; over 40% of children who are obese (i.e., BMI $ 95th percentile for sex, age, and height) have at least one lipid abnormality. However, an important proportion of children with dyslipidemia are of normal weight. Physical activity also modifies CVD risk. For instance, increased amounts of moderate-to- vigorous physical activity led to improvements in mean waist circumference, systolic and diastolic blood pressure, fasting insulin, fasting glucose, and fasting triglycerides. The Cardiovascular Risk in Young Finns found that low physical activity was associated with accelerated progression of carotid intima-media thickness (CIMT) over 27 years of follow-up. There is growing literature on the importance of early identification and treatment of this condition with a combination of Life style modification and medication.

Cardicology

Pediatric Cardiologist

Mohammad taghi Majnoon[1] © ℗

[1] **Tehran University, Medical Center**

Abstract: Myocarditis clinical presentation The survival rates for children with myocarditis vary based on several factors, including disease severity, timeliness of diagnosis, and the occurrence of complications. Recent studies show that about 74% of children survive without requiring a heart transplant within the first year, but this declines to 65% by five years. Long-term survival further decreases, with 62% surviving at ten years and 56% at twenty years. Notably, patients with fulminant myocarditis, a severe form, tend to have better long-term survival due to more aggressive initial treatment. Mortality during hospitalization remains significant, with 27.5% of children not surviving this phase. Factors that influence survival rates include the timing of diagnosis and treatment, clinical presentation, and the use of advanced medical interventions like mechanical circulatory support. Early recognition of symptoms and prompt management are crucial to improving survival. Severe symptoms at presentation, such as shock or multisystem organ failure, often correlate with poorer outcomes. Meanwhile, the use of therapies like extracorporeal membrane oxygenation (ECMO) in severe cases can improve short- and long-term survival rates. In the long term, children who survive myocarditis may still face complications such as chronic heart failure, arrhythmias, or dilated cardiomyopathy (DCM). Some may require heart transplantation later in life if heart function worsens. Long-term monitoring, including cardiac evaluations and lifestyle modifications, is essential to managing potential complications. Children should avoid strenuous physical activities until cleared by healthcare professionals, and a multidisciplinary care team is often necessary to ensure the best outcomes.

Cardicology

Updates in treatment of Infantile hemangiomas

Reza Azadi [1] © ℗

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Abstract: Infantile hemangioma is a common vascular tumor that primarily affects infants and young children. It is characterized by the abnormal proliferation of blood vessels in the skin and subcutaneous tissues. This condition typically presents as a red or bluish-red raised lesion that can vary in size and shape. The exact cause of infantile hemangioma is still unknown, but it is believed to involve a combination of genetic and environmental factors. The clinical course of infantile hemangioma can be divided into two phases: the proliferative phase and the involutional phase. During the proliferative phase, the tumor grows rapidly and reaches its maximum size. This phase is followed by the involutional phase, during which the tumor gradually regresses and eventually disappears. The duration of each phase can vary widely among individuals. Infantile hemangioma can occur anywhere on the body, but it is most commonly found on the head and neck. In some cases, it may be associated with other medical conditions, such as PHACE syndrome. The diagnosis of infantile hemangioma is primarily based on clinical examination. However, imaging techniques such as ultrasound can be used to confirm the diagnosis and assess the extent of the lesion. Treatment options for infantile hemangioma depend on various factors, including the size and location of the tumor, as well as the age and overall health of the patient. Observation is often recommended for small, asymptomatic lesions. However, if intervention is necessary, options may include topical medications, oral medications (such as propranolol), laser therapy, or surgical excision. The choice of treatment depends on the individual case and should be carefully considered in consultation with a dermatologist or pediatric specialist.

Cardicology

Viral Myocarditis ,diagnosis and treatments

Mojtaba Gorji [1] © ℗

[1] **Tums.children's medical center of excellence.pediatric cardiology department.pediatric cardiologist**

Abstract: In recent years, due to the pandemia of Corona and the changes in viruses following the Covid pandemic, we have seen more and more severe cases of viral myocarditis. Myocarditis with involvement of the heart muscle and heart failure causes a serious disturbance in the perfusion of organs and their dysfunction. On the other hand, myocarditis has deceptive clinical symptoms, mainly gastrointestinal with lethargy and fatigue, which are easily missed. Timely diagnosis and treatment of myocarditis can save the patient's life and reduce his serious morbidities. Here, some useful diagnostic and treatment cases of myocarditis are briefly mentioned for the guidance and use of pediatric specialists, pediatric cardiologists and pediatric ICU specialists

Dentistry

Acquired and Developmental Disturbances of the Teeth and Associated Oral Structures

Arefe Abedinzade [1] © Ⓟ

[1] **Assistant Professor of Pediatric Dentistry, Tehran University of Medical Sciences, Iran**

Abstract: A dentoalveolar abscess may be categorized as acute or chronic and is associated with pulpal necrosis due to infection. In the permanent dentition, this condition usually appears as a well-localized periapical lesion surrounded by a fibrous capsule that is produced by differentiated fibroblasts from the periodontal membrane. The primary tooth abscess is usually evident as a more diffuse infection, and the surrounding tissue is less able to isolate or "wall off" the process. The virulence of the microorganisms and the ability of the host to react to the infection likely determine whether the infection will be acute or chronic. Cellulitis is a diffuse infection of the soft tissues that occurs more frequently in younger children. It is caused by primary or permanent pulpal necrosis and is characterized by considerable swelling of the face or neck due to collateral edema and a spreading fascial space infection, causing the tissue to appear dark and brawny. Cellulitis can be serious and even life threatening. It is usually a result of severe untreated caries in patients who receive irregular, symptomatic dental care or in individuals who may have had dental care only for the treatment of dental emergencies. Such children commonly come to the hospital emergency department, where they appear acutely ill and may have a high fever (greater than 40°C/104°F) with malaise and lethargy. If a maxillary tooth is involved, the swelling and redness may involve the eye and, if untreated, may spread posteriorly to involve the brain with an abscess or cavernous sinus thrombosis. Cellulitis resulting from an infected mandibular tooth will spread to the floor of the mouth along the fascial planes. A rapidly progressive form of cellulitis involving submandibular, sublingual, and submental spaces is termed Ludwig's angina. Amelogenesis occurs in three stages. In the first stage, the enamel matrix is secreted by ameloblasts and in the second stage, it undergoes calcification; a final stage of enamel maturation, with crystal growth and removal of water and protein, continues until eruption. Local or systemic factors that interfere with normal matrix formation cause disorders of tooth quantity with enamel surface defects and irregularities

Dentistry

Correlation of the Apgar Score with Dental Caries in 3- to 5-year-old Iranian Children

Mehrsa Paryab [1] © Ⓟ, Amin Keykhaie afusi [2], Marzieh Salehi Shahrabi [2], Mohammad Javad Kharrazi Fard [3]

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Abstract: Background: Dental caries is a serious health condition in children. Poor diet, poor oral hygiene, and unique anatomy of the primary teeth can all contribute to the development of caries in primary teeth. Developmental structural defects in teeth during the fetal period and the first year after birth are believed to increase caries susceptibility. This study aimed to assess the correlation of the Apgar score with dental caries in 3- to 5-year-old Iranian children. Methods: This retrospective, descriptive, cross-sectional study was conducted at the Pediatric Dental Clinic of Tehran Dental School in 2022. A total of 123 eligible children between 3-5 years were enrolled. The parents were requested to fill out a checklist regarding the information of demographics, birth and infancy condition and Apgar score of children. The children underwent clinical dental examination, and their dmft was recorded. Data were analyzed by the Pearson and regression tests. P values 0.1 were considered statistically significant. Results: The Pearson test showed that the 1-minute (P = 0.000) and 5-minute (P = 0.000) Apgar scores had a significant correlation with dmft. The regression analysis of demographic and birth factors revealed significant correlations between duration of breastfeeding (P = 0.066) and age of initiation of toothbrushing (P = 0.019) with dmft. Also, birth weight (P = 0.026) and mother's educational level (P = 0.090) had significant correlations with the Apgar score. Conclusion: The results indicated a significant correlation between the Apgar score and dental caries. Thus, newborns with lower Apgar scores are recommended to receive more regular oral and dental care services.

Keywords: Apgar Score, Dental Caries, Children, Pediatric Patients

Dentistry

Effect of diet on the teeth and oral structures health in children

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Abstract: Due to the high prevalence of dental caries, as well as childhood obesity, more attention is now being devoted to the children daily diet and sugar consume. with regards to dental caries, simple sugars readily facilitate growth and metabolism of streptococcus mutans and other acidogenic and acid tolerating bacteria species.with with frequent sugar consumption the bacteria that are attached to the teeth produce acid that will reduce the pH of the environment and produce tooth demineralization.the recommended consumption of sugar is less than 10% of daily calories intake or approximately #2.5 gr sugar. On the other hand pediatric undernutrition is a concern among children and infants. These children are much smaller and shorter than their counterparts and may lack mental and social skills as well as physical abilities. these undernutrition situations also affect dental and oral structures and may cause pathologic signs and symptoms in oral cavity.

Dentistry

Oral habits and their impact on dentofacial development in children

Sara Ghadimi [1] © Ⓟ

[1] **Professor, Department of Pediatric Dentistry, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran**

Abstract: Oral habits in children are an important finding during dental examinations and are common. In this lecture, common oral habits, including digit and pacifier sucking, lip habits, nail biting, bruxism, and others, will be addressed. Some oral habits are normal during primary dentition, and during this time, there is no need for intervention. However, after the eruption of permanent teeth in a child's mouth, some oral habits can affect the teeth and surrounding structures. If the habit is stopped at the proper time, dental changes will begin to reverse naturally. In some cases, however, appliance therapy may be required. The purpose of this paper is to review and discuss the various oral habits that may be associated with malocclusion and their management. It's important to inform parents about non-nutritional oral habits and their side effects because these habits should be stopped at the proper time. Continuing these habits after the eruption of permanent teeth can have negative effects. Parents often want to know the reasons for these habits and their prevalence. Therefore, it's crucial for dentists and physicians to properly inform parents. When parents are aware of oral habits and their side effects, they are more likely to participate in recall sessions. Additionally, dentists and physicians will be able to recognize and, if needed, eliminate etiologic factors.

Emergency and PICU

Asthma management from clinic to intensive care unit

Maryam ghodsi khorsand [1] © ℗

[1] **Assistant professor of pediatric intensive care**

Abstract: management of asthma exacerbation includes early recognition, assessment of attack severity , timely intervention and reassessment treatment. office /out patient management for mild to moderate exacerbation is similar to the approach used in the emergency department. treatment should be initiated in patient with sever exacerbation while arranging for transfer to the E . D. All patient require rapid- onset beta agonist. Ipratropium bromide can be administered to patient with moderate to sever symptoms .foe patient with sever symptoms initiating systematic glucocorticosteroids is recommended

Emergency and PICU

Basic Pediatric CPR

Behdad Gharib [1] © ℗

[1] **Children's Medical Center, Tehran University of Medical Sciences**

Abstract: The mortality rate of pediatric In Hospital Cardiac Arrest (IHCA) is high and the survival rates were reported as 41.1% compared to 11.4% for Out-Hospital Cardiac Arrest (OHCA). Also, the survival rates of IHCA differs among departments and cardiac arrest in the emergency department has higher mortality than Inpatient Cardiac Arrest (IPCA) (1). Mckenzie et al found that a high proportion of pediatric OHCA had ROSC (Return of spontaneous circulation), but the rate of survival to discharge was low (2). Bimerew et al conducted a meta-analysis which showed that 54 percent of pediatric patients with the event of in hospital cardiac arrest and CPR, did not survive to discharge (3). Several factors have been implicated in determining the outcome of CPR, prominent among them the clinical setting in which the procedure is performed, including the emergency department, general departments and Intensive Care Unit (ICU).

Emergency and PICU

Drowning and submersion injuries

Mahsa Soti Khiabani [1] © ℗

[1] **Assistant Professor of Pediatrics, Department of Pediatrics, School of Medicine ,Childrens Medical Center Tehran University of Medical Sciences**

Abstract: Drowning and submersion injuries are highly prevalent, yet preventable, causes of pediatric mortality and morbidity. The World Congress of Drowning definition of drowning is “the process of experiencing respiratory impairment from submersion/immersion in liquid.” The highest drowning death rates were seen in children age 1-4 yr and 15-19 yr. Drowning risk also relates to other host factors, including male gender, alcohol use, a history of seizures, and swimming lessons. Environmental risk factors include exposure to water and varying supervision. Drowning victims drown silently and do not signal distress or call for help. Vocalization is precluded by efforts to achieve maximal lung volume to keep the head above the water or by aspiration leading to laryngospasm . Duration of submersion, speed of the rescue, effectiveness of resuscitative efforts, and clinical course determine the outcome in submersion victims. Initial management of drowning victims requires coordinated and experienced prehospital care following the ABCs (airway, breathing, circulation) of emergency resuscitation. Initial resuscitation must focus on rapidly restoring oxygenation, ventilation, and adequate circulation. The airway should be clear of vomitus and foreign material, which may cause obstruction or aspiration. Abdominal thrusts should not be used for fluid removal, because many victims have a distended abdomen from swallowed water; abdominal thrusts may increase the risk of regurgitation and aspiration. In cases of suspected airway foreign body, chest compressions or back blows are preferable maneuvers. If the victim has ineffective respiration or apnea, ventilatory support must be initiated immediately. Concurrent with securing of airway control, oxygenation, and ventilation, the child's cardiovascular status must be evaluated and treated according to the usual resuscitation guidelines and protocols. Heart rate and rhythm, blood pressure, temperature, and end-organ perfusion require urgent assessment. CPR should be instituted immediately in pulseless, bradycardic, or severely hypotensive victims. Continuous monitoring of the electrocardiogram (ECG) allows appropriate diagnosis and treatment of arrhythmias. Vascular access should be established as quickly as possible .Most pediatric drowning victims should be observed for at least 6-8 hr, even if they are asymptomatic on presentation to the ED. At a minimum, serial monitoring of vital signs should be performed.

Emergency and PICU

General principles of mechanical ventilation and common modes

Zeynab Porhadi[1] © ℗

[1] **The Faculty of Children's Special Care Department**

Abstract: The decision to institute mechanical ventilation is based mainly on the need to assist native pulmonary function in patients with acute respiratory failure; supporting performance of the left ventricle (LV), decreasing metabolic demand, and modulating of cerebral blood flow in intracranial hypertension are additional indications. Respiratory distress leading to fatigue and impending exhaustion are also indications for respiratory support, even in the presence of adequate gas exchange. When precisely employed, mechanical ventilation is a lifesaving intervention, yet care must be taken to avoid ventilator-induced lung injury (VILI). Several factors have been identified as contributors to VILI. These include lung strain from the delivery of excessive tidal volume (volutrauma), injury from the repetitive opening and closing of alveoli (atelectrauma), injury from excessive pressure delivery (barotrauma), local and systemic cytokine release (biotrauma), and damage caused by oxygen toxicity. Mechanical ventilation involves considering the four phases of the respiratory cycle: (1) initiation of respiration and a variable that is controlled, often referred to as mode; (2) inspiratory phase characteristics, which determine the duration of inspiration and how the pressure or volume is delivered; (3) termination of inspiration, often referred to as cycle; and (4) expiratory phase characteristics. The initiation of inspiration may be set to occur at a predetermined rate and interval regardless of patient effort, or it could be timed in response to patient effort. Once inspiration is initiated, the ventilator breath either is controlled entirely by the ventilator (control mode) or supports the patient's inspiratory effort to a predetermined inspiratory volume or pressure target (support mode). Advances in technology allow for greater patient-ventilator synchrony to occur. The ventilator may be set to be triggered by the signal it receives as a result of patient effort. This feature may be in the form of lowering of either pressure (pressure trigger) or airflow (flow trigger) in the ventilator circuit generated by the patient's inspiratory effort. If no such signal is received because of lack of patient effort, the ventilator delivers a breath at an interval selected by the operator.

Emergency and PICU

Imaging in Pediatric Acute Abdomen

Fatemeh Zamani [1] © ℗

[1] **Associated professor of radiology, Children's Medical Center, TUMS, Tehran, Iran**

Abstract: The acute pediatric abdomen presents a common clinical issue in children admitted to the emergency ward. The causes of acute abdomen in children vary depending on the patient's age. They can result from both surgical and non-surgical conditions. The radiologist needs to be familiar with the sonographic findings and age-related symptoms that enable the diagnosis of various causes of acute abdomen, as well as the findings that help to rule out these diseases. In recent years, ultrasound has become the primary method for assessing the acute pediatric abdomen. Ultrasound is a quick, bedside, and safe examination that does not involve radiation. Pediatric computed tomography (CT) is a fast and painless exam that uses special X-ray equipment to create detailed images of a child's internal organs, bones, soft tissues, and blood vessels. It may be used to diagnose abdominal pain or evaluate injuries after trauma. Only a small number of children presenting with abdominal pain will require surgical management, and the most frequent cause is acute appendicitis. While medical history and physical examination can help physicians differentiate among various possible causes, sonography has proven to be a reliable technique for establishing the diagnosis of conditions such as intussusception, hypertrophic pyloric stenosis, midgut volvulus, necrotizing enterocolitis, meconium peritonitis, complicated inguinal hernia, and appendicitis in neonates and children. For experienced radiologists, the accuracy in detecting appendicitis and intussusception is close to 95% and 100%. Other causes of pediatric acute abdomen include primary peritonitis, colic, and gastroenteritis.

Emergency and PICU

Noninvasive ventilation in children

Farzaneh Beirami[1] © ℗

[1] **Faculty of Children's Department**

Abstract: Noninvasive ventilation (NIV) describes the delivery of mechanical respiratory support without the need for endotracheal intubation through an interface (eg, nasal prongs or mask, face mask, or helmet that delivers continuous positive airway pressure (CPAP) or bilevel positive airway support (BPAP). The approach to initiation of NIV in children, including selection and securing of the interface , selecting the mode of ventilation, and initial settings, are provided. Proper interface sizing, skin protection measures, and use of warmed and humidified gas delivery help avoid the complications of skin breakdown, nasal mucosal trauma, and eye irritation. Close monitoring is needed in all patients receiving NIV with frequent titration to optimize support. Nowadays, the use of NIV has received more attention. Appropriate selection of patients to use non-invasive ventilation and monitoring during its use is very important. In this congress, there is an opportunity to discuss the correct use of NIV and the necessary care and its contraindications.

Emergency and PICU

Prevention Of Accident

Nilofar Ghanbari1 © ℗

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Abstract: Preventing Electrical Injuries: To prevent electrical injuries, cover outlets, insulate wires, keep wires out of reach of children, and supervise them around potential hazards. Be cautious with small appliances near water. Preventing Bug Bites: Use insect repellent with DEET, wear protective clothing, use bed nets when sleeping outdoors, stay informed about outbreaks, and seek medical attention for serious symptoms. Preventing Drowning: Learn swimming and water safety skills, fence pools securely, supervise closely, wear life jackets, know CPR, understand risks in natural waters, use the buddy system, consider medical conditions and medications effects. Avoid hyperventilating or holding breath for long periods

Emergency and PICU

Role of imaging in pediatric airway emergencies: modalities and indications

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Abstract: Acute airway obstruction is much more common in infants and children than in adults because of their unique anatomic and phsiologic features . Even with partial obstruction ,symptoms can be severe. The findings from the history and physical examination are often nonspecific ,leaving clinicians to rely on imaging findings to identify the cause for acute obstruction. Although cross sectional imaging may be helpful ,the diagnosis can often be established by using radiographs alone. Radiographs of the chest and upper airway should be routinely acquired ;however, for the child who is in severe distress, a single lateral radiographic view may be all that is necessary .The differential diagnosis for acute airway obstruction can be divided anatomically into conditions that affect the upper and lower airways. Upper airway further divided into supraglottis, glottis and subglottic regions. Although any process that narrows the airways causes a rise in airway resistence and increased work of breathing ,the potentially life threatening causes of acute airway obstruction include epiglottitis ,retroperitoneal abscess, bacterial tracheitis ,and foreign body aspiration .Remember that chronic causes of airway obstruction ,such as endoluminal or extrinsic masses ,may manifest acutely. Finally key imaging findings are reviewed according to case based presentation.

Emergency and PICU

RSI in pediatrics

Roxana Pazouki [1] © Ⓟ

[1] **Assistance Professor**

Abstract: Severely ill children may need intubation outside the operating room. Rapid sequence intubation (RSI) is generally the preferred method for emergency intubation. RSI describes a coordinated, sequential process of preparation, sedation and paralysis to facilitate safe, emergency tracheal intubation. The sequence of steps in pediatric RSI are: preparation, preoxygenation, administration of pretreatment medications (optional), sedation and paralysis, airway protection and positioning, endotracheal tube placement with confirmation, and post intubation management. In this topic, we will discuss the steps involved in performing RSI and the selection of sedation and paralytic agents according to patient characteristics.

Emergency and PICU

The prognostic ability of serum ferritin level in children with COVID-19 in a pediatric critical care unit in Iran

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Abstract: Background: To evaluate the relationship between serum ferritin and poor outcomes in children with COVID-19 in a pediatric critical unit in Iran. Methods: This retrospective cross-sectional study included children aged 1 month to 18 years old with confirmed SARSCoV-2 infection admitted to the pediatric intensive care unit of Children's Medical Center during the COVID-19 pandemic. Unfavorable outcomes were defined by vasoactive need, ventilator need, and death. Results: 133 children with mean age of 53.2 months and a female: male ratio of 1.5:1 were enrolled. 54.9% of patients needed vasoactive agents and 42.7% needed mechanical ventilation. The mortality rate was 27.1%. The mean of the first and highest ferritin levels in our patients were 1534 and 2104 ng/ml, respectively. 15 cases had ferritin levels of more than 3000 ng/ml, among them 80% required vasoactive agents, 87% underwent mechanical ventilation, and 73% expired. We found a cut-off point of 392 ng/ml for ferritin level, with 74% sensitivity and 82% specificity for predicting death. We also detected a cut-off point of 206.5 ng/ml for ferritin level, with 72% sensitivity and 70% specificity for predicting ventilator need. We also found that ferritin with a cut-off point of 330.5 ng/ml will predict vasoactive need, with 51% sensitivity and 82% specificity. Conclusions: Serum ferritin levels predict poor outcomes in critically ill children with COVID-19 with variable sensitivity and specificity. Key words: ferritin, COVID-19, children, outcome

Emergency and PICU

Ventilator management in children : Obstructive and Restrictive lung disease

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Abstract: Status asthmaticus is a condition of progressively worsening bronchospasm and respiratory dysfunction due to asthma, which is unresponsive to standard conventional therapy and may progress to respiratory failure. Despite initial aggressive management a small proportion of patients require ventilatory support. Ventilation in asthma is complex and presents a big challenge to the pediatric intensivist. NIV is increasingly being used and its early initiation has shown to improve outcome and avoid endotracheal intubation in some recent studies. During mechanical ventilation, our first goal is to maintain adequate gas exchange and the second goal is to minimize the risk of air trapping and auto PEEP. These goals are best achieved by adopting the strategy of controlled hypoventilation and permissive hypoxemia initially. Once recovery starts the patient is shifted to assisted or spontaneous mode. A cautious application of PEEP up to 80% of auto PEEP can be tried at this stage. Further recovery should prompt the intensivist to rapidly wean and extubate the patient. Pediatric Acute Respiratory Distress Syndrome (PARDS) is a severe lung condition characterized by rapid onset of widespread inflammation in the lungs. It occurs when fluid accumulate in alveoli, preventing them from filling with enough air. This results in reduced oxygen levels in the bloodstream, leading to inadequate oxygen supply to organs and tissues. In 2023, the Second Pediatric Acute Lung Injury Consensus Conference (PALICC-2) Group released clinical practice guidelines on pediatric acute respiratory distress syndrome (PARDS). The overarching goal is to optimize oxygenation and ventilation while minimizing lung injury, considering the unique physiology and lung mechanics of children via open lung strategy.

Endocrine and Metabolism

Different types of insulin

Hosein Shabani-Mirzaee [1] © ℗

[1] 3. Assistant professor of Pediatric Endocrinology and Metabolism, Pediatric department, Bahrami Children's Hospital, Tehran University of Medical Sciences, Tehran, Iran

Abstract: Different types of insulin Management of type 1 diabetes (T1D) has several components, including insulin therapy, proper diet, healthy lifestyle, and blood sugar monitor. We know that type 1 diabetes is caused by a decrease in insulin secretion, so the main component of T1D treatment is the insulin hormone Rapid-Acting insulin: It is used as a bolus insulin to control postprandial blood sugar Due to its fast onset of action, injection should be given 5-10 minutes before the start of a meal. If necessary, may be given immediately after the meal. Short-Acting Insulin: It is used to control blood sugar after meals and insulin of choice for insulin infusion (insulin drip) during management of diabetic ketoacidosis. Intermediate-Acting Insulin: NPH is effective in controlling blood sugar between meals and can be used as basal insulin, although due to its action profile that does not cover 24 hours, it is necessary to inject it twice a day, in the morning and in the evening. Long-Acting Insulin: It works throughout the day and night to provide you with low levels of insulin all the time. Long-acting insulin is sometimes also known as basal insulin. Ultra long-Acting Insulin: It forms soluble multihexamers which after subcutaneous injection are converted into monomers, and are thus slowly and continuously absorbed into the bloodstream. it was associated to a significantly lower rate of nocturnal hypoglycemia in both types of diabetes. Pre-mixed insulin: Premixed insulin is a combination of short and long-acting insulin. The short-acting part of your insulin starts to work within 30 minutes and the long-acting works more gradually for 5-10 hours.These products are generally taken two or three times a day before mealtime. In most type 1 diabetes patients, especially in children, this type of insulin is not suitable due to lack of flexibility to changes in nutrition and physical activity conditions. Inhaled insulin: Inhaled insulin has a very short duration of action, therefore, should not be used by itself but in combination with other basal insulins.

Endocrine and Metabolism

Endocrine causes of hypoglycemia

Maryam Razavi [1] © Ⓟ

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Abstract: Hypoglycemia, defined as abnormally low blood glucose levels, can result from various endocrine disorders that disrupt the delicate balance of glucose homeostasis. This article reviews the primary endocrine causes of hypoglycemia, including insulinomas, adrenal insufficiency, and disorders of the hypothalamic-pituitary axis. We explore the pathophysiological mechanisms underlying these conditions, highlighting how excess insulin production, cortisol deficiency, and hormonal imbalances contribute to impaired gluconeogenesis and glycogenolysis. Additionally, we discuss diagnostic approaches, including biochemical assays and imaging techniques, to identify these endocrine abnormalities. The article emphasizes the importance of a comprehensive clinical evaluation to differentiate between various etiologies of hypoglycemia and outlines effective management strategies tailored to the underlying endocrine disorder. By enhancing understanding of these causes, we aim to improve recognition and treatment outcomes for patients experiencing hypoglycemic episodes. 1. Hyperinsulinism is a cause of hypoglycemia due to secrete excessive amounts of insulin, leading to recurrent episodes of hypoglycemia. This condition can be difficult to diagnose due to their intermittent nature and the variability of symptoms. The mechanism involves inappropriate insulin secretion in response to low blood glucose levels, which exacerbates the hypoglycemic state. | 2. Adrenal Insufficiency Adrenal insufficiency, particularly primary adrenal insufficiency (Addison's disease), can lead to hypoglycemia due to insufficient cortisol production. 3 hypopituitarism is one of the important endocrine causes of hypoglycemia and other causes like glucagon deficiency and hyothalamic problems are discussed as well.

Endocrine and Metabolism

Gluconeogenesis disorders

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Abstract: Disorders of gluconeogenesis are a group of diseases causes hypoglycemia and characterized by elevated lactate at the time of hypoglycemia. Gluconeogenesis is glucose production from other substrate such as lactate , pyruvate , alanine and glycerol. Gluconeogenesis plays an important role in maintaining plasma glucose levels in fasting state therefore defect in the enzymes of this pathway cause hypoglycemia and accumulation of substrate. Several diseases categorized in this disorders such as fructose 1,6 bisphosphatase deficiency , pyruvate carboxylase deficiency , phosphoenolpyruvate carboxykinase deficiency , GSD 1. Common denominator of these disease is hypoglycemia , high lactate in prolonged fasting but each of them has specific features. Common treatment of these disorders are avoiding fasting and continuous feeding.

Endocrine and Metabolism

New treatments in type 1 diabetes mellitus

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Abstract: As the number of cases of diabetes worldwide approaches 500 million, an estimated 8.4 million people around the world had type 1 diabetes (DM1) in 2021, that may rise to 17.4 million by 2040. In DM1, symptoms usually do not appear before 80% of the β-cell mass has been destroyed, absolute destruction of these cells leads to the dependence on exogenous insulin administration for survival. In treatment with exogenous insulin, with the help of new technologies, great progress has been made, which has made treatment easier, improved disease control, and reduced side effects of treatment, mainly hypoglycemia. Currently, except treatment with exogen insulin, researchers are scrambling for a limited pool of treatments with unclear effectiveness, including a variety of treatments, such as replacement of damaged beta cells, immunotherapy to stop damage to beta cells, or similar measures, which we will briefly review in this article. Two strategies currently exist that focus on replacing the damaged β-cell mass in DM1, involving either whole pancreas or islet transplantation. Prof El-Osta have developed a revolutionary method to regenerate insulin cells without the ethical concerns that are commonly associated with embryonic stem cells. In the field of immunotherapy, Early phase studies of teplizumab showed promising results in slowing the loss of beta-cell function, in both children and adults, that extended up to 2 years of follow-up with most of the effect observed in patients with recent T1D onset. Teplizumab is the first FDA-approved drug for delaying T1D onset in at-risk patients. This delay reduces the potential for severe long-term complications, thereby improving quality of life of these patients. In June 2023, the FDA approved Lantidra—the first donor cell therapy for adult people with type 1 diabetes who are unable to approach target glycated hemoglobin because of current repeated episodes of severe hypoglycemia despite intensive diabetes management and education. The primary mechanism of action of Lantidra is believed to be the secretion of insulin by the infused allogeneic islet beta cells. In some patients with type 1 diabetes, these infused cells can produce enough insulin, so the patient no longer needs to take insulin.

Gastroenterology and Nutrition

Breastfeeding: The path to the healthy life for decades

Bahar Allahverdi [1] © Ⓟ

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Abstract: Breastfeeding is the natural way for humans to feed their infants, and using alternative milks could have a negative impact on the health of both the baby and the mother. Breast milk provides the necessary nutrients for the baby's growth and development, as well as important immune system support through growth factors, antimicrobial peptides, and proteins. Human milk oligosaccharides (HMOs) in breast milk shape the healthy gut microbiota of infants. Compared to other nonhuman primates, human babies are born less developed both neurologically and physiologically. Breastfeeding is well known to provide the colonization of beneficial gut bacteria and breastfed infants display healthier growth patterns compared to those who are not breastfed. Infants who are exclusively breastfed for 6 months have significantly lower rates of gastrointestinal diseases compared to those exclusively breastfed for 3-4 months. During infancy, the composition of the gut microbiome is greatly influenced by various factors, and breastfeeding is widely acknowledged as a significant driver. It has the potential to affect the functioning of the microbiome, as milk components directly interact with cell surface receptors, hindering the attachment of pathogens and thus preventing their colonization. Research has demonstrated that formula-feeding can lead to changes in the infant gut microbiome, favoring the proliferation of proinflammatory microorganisms while also increasing gut permeability and bacterial load. Additionally, multiple studies have indicated that formula-feeding raises the likelihood of childhood obesity in later years.

Gastroenterology and Nutrition

Cyclic vomiting syndrome

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Abstract: Cyclic vomiting syndrome (CVS) is a gastrointestinal disorder that is characterized by recurrent episodes of vomiting. CVS is a gut-brain interaction disorder characterized by recurrent, stereotypical episodes of severe nausea and vomiting interspersed with periods of little or no symptoms. The prevalence of CVS in children is estimated at 1.9 to 2.3 percent, with an incidence of 3.2 per 100,000 population. The average age was 9.6 years at the time of diagnosis, while the average age at the onset of symptoms was 5.3 years. CVS appears to be more common in girls than boys. CVS is highly associated with a history of migraines, either in the patient or in children a maternal family member. Although our understanding of the pathogenesis of childhood CVS is still limited, several mechanisms have been postulated, including hypothalamic-pituitary adrenal activation, autonomic dysfunction, polymorphisms of mitochondrial DNA, genetic abnormalities, neuronal hyperexcitability, and gastric dysmotility. The clinical diagnosis has been facilitated by more specific consensus diagnostic criteria defined by the pediatric Rome IV criteria: 1. Two or more periods of intense unremitting nausea and paroxysmal vomiting, lasting hours to days within a 6-month period 2. Episodes are stereotypical in each patient 3. Episodes separated by weeks to months with return to baseline health between episodes 4. Symptoms not attributed to another medical condition. Current treatment for CVS can be divided into the following categories: (1) lifestyle modifications, (2) abortive therapy (3) supportive or rescue therapy and (4) prophylactic therapy. The main goals are to reduce the frequency and severity of episodes, enhance functionality, and improve quality of life. The main recommendations include first-line prophylactic use of cyproheptadine and amitriptyline in children under and over age 5 years, respectively, with propranolol as the second line. Sumatriptan is recommended as an abortive agent for those 12 years. Aprepitant, a novel NK-1 receptor antagonist with some efficacy data in children both as an abortive and prophylactic agent. For rescue therapy during acute episodes, IV rehydration with higher dose antiemetic ondansetron, analgesia using ketorolac for moderate to severe abdominal or headache pain, and sedation from diphenhydramine or lorazepam was recommended.

Gastroenterology and Nutrition

FGIDs

Dr. Farzaneh Motamed [1] © ℗

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Abstract: Chronic abdominal pain is one of the most commonly encountered symptoms, in childhood and adolescence with prevalence rates of %1 to %19 and account, for %2 to 4% of pediatric office visits. In 1958 Apley and Naish defined recurrent abdominal pain as three or more episodes of abdominal Pain severe enough to affect daily activities, over at least three months. FGIDs or functional GI disorders are defined as a variable combination of chronic or recurrent GI symptoms not explain by structural or biochemical abnormalities. RAP now has a classification by Rome criteria include: functional dyspepsia, 1BS, functional, isolated abdominal pain and abdominal migraine. The exact etiology and pathogenesis of the pain is unknown. It is believing that the pain is the result of disordered brain - gut communication involving both the efferent and afferent pathways by which the enteric and central nervous systems communicate, so called visceral hyperalgesia or hypersensitivity. Altered sensitively may exacerbate motility disturbance by upregulating sensory - motor reflex loops in the gut and disordered motility may exacerbate hypersensitivity by creating excess stimuli through distension due to poor transit or high pressures due to spasms. Genetics, hormones like serotonin, inflammation, stress, GI microbiota, Psychiatric and parental factors are hypotheses That may explain the pathophysiology of FGIDs.

Gastroenterology and Nutrition

Functional dyspepsia

Kambiz Eftekhari [1] © ℗

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Abstract: Functional dyspepsia Introduction Functional dyspepsia is a functional abdominal pain disorder involving recurrent postprandial fullness, early satiation, and/or epigastric pain or burning. Its diagnosis is based on fulfillment of the Rome criteria. Functional dyspepsia is common in children, with an estimated prevalence of 4.5%. The abnormal gastric function contributes to the clinical presentation of functional dyspepsia. Both children and adults with functional dyspepsia can have impaired gastric motility. Clinical Presentation Diagnosis of functional dyspepsia, according to the Rome IV criteria, is the presence of at least 1 of the following, for at least 4 days per month for 2 months: postprandial fullness, early satiation, and/or epigastric pain or burning not associated with defecation. There are two subtypes of functional dyspepsia. The postprandial distress syndrome subtype and the epigastric pain syndrome subtype. Children with functional dyspepsia are more likely to experience behavioral problems, anxiety, and depression. Evaluation The evaluation of a these children begins with a thorough history and physical exam. For the child who meets Rome IV criteria for functional dyspepsia without alarm symptoms or signs, no further testing is usually needed. Alarm features include a family history of inflammatory bowel disease, celiac disease, or peptic ulcer disease, persistent right upper or lower quadrant pain, dysphagia, odynophagia, persistent vomiting, gastrointestinal blood loss, nocturnal diarrhea, arthritis, perirectal disease, involuntary weight loss, deceleration of linear growth, delayed puberty, and unexplained fever. Management Treatment should be individualized based on the child's presentation, including symptom severity and degree of disability. In the child with mild symptoms and without significant associated impact on daily functioning, efforts should be made to start with nonpharmacological treatment. For children with epigastric pain and burning, a trial of acid suppression can be considered. For children with documented delayed gastric emptying or prominent fullness, early satiety, or bloating, a trial of a prokinetic medication to accelerate gastric emptying can be considered as well. For children with more severe symptoms, tricyclic antidepressants like amitriptyline or imipramine can be considered. Several psychosocial interventions have been demonstrated to be effective in children with functional abdominal pain disorders, including functional dyspepsia.

Gastroenterology and Nutrition

Infantile Cholestasis

Azizollah Yousefi [1] © ℗

[1] **Associated professor of Iran University of Medical Sciences**

Abstract: Infantile Cholestasis Azizollah Yousefi Pediatric gastroenterologist Associated professor of Iran University of Medical Sciences Neonatal/Infantile cholestasis (NIC) is defined as an impairment in bile formation and/or flow presenting by the first year of age, usually in the first three months, and resulting in the retention of bile and biliary substances within the liver that cause liver damage. The incidence of neonatal cholestasis is estimated to be ~1:2500 live births worldwide, and 25% to 50% are now known to be associated with changes in specific genes. Causes Neonatal cholestasis can present from a number of pathologic causes, 35-40% of neonatal cholestasis cases are caused by biliary atresia. This is one of the most common causes for neonatal cholestasis. Metabolic and genetic disorders cause 9-17% of cases, infectious processes cause 1-9% of cases, Alagille syndrome causes 2-6% of cases, and idiopathic cases arise 13-30% of the time. The causes can be divided into intrahepatic and extrahepatic. Iintrahepatic Genetic and inborn errors of metabolism (alpha-1 antitrypsin deficiency , CF , Alagille syn, Galactosemia , tyrosinemia , ……) Infectious (TORCH, Viral, Bacterial) Endocrine (Hypothyroidism , panhypopituitarism) Toxins Extrahepatic Biliary atresia Choledochal cyst Cholelithiasis Clinical presentation Most infants affected by neonatal cholestasis will present with jaundice, scleral icterus, failure to thrive after two weeks, acholic/pale stools, and dark urine , hepatomegaly ,splenomegaly , itching. Evaluation and diagnosis Neonatal cholestasis is present if conjugated bilirubin value is 20% of total serum bilirubin or if serum conjugated bilirubin concentration is greater than 1.0 mg/dl. Evaluation of patients with cholestasis including abdominal ultrasound and laboratory studies. Additional laboratory studies are ordered to further evaluate the cause of neonatal cholestasis. (CBC), metabolic panel , liver enzymes, serum protein and albumin, and coagulation studies can be useful. If imaging and lab results are not sufficient in determining a cause for neonatal cholestasis, genetic testing is available to determine if the cause is a genetic disease. Liver biopsy performed through the skin can be completed if initial evaluation does not indicate neonatal cholestasis but is clinically suspected Treatment Treatment of neonatal cholestasis depends on the specific cause.

Gastroenterology and Nutrition

Metabolic-Associated Steatotic Liver Disease (MASLD): A New Term

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Abstract: The term “non-alcoholic fatty liver disease” (NAFLD) has been, for a long time, used to describe the spectrum of liver lesions encompassing steatosis, steatohepatitis (NASH), and steatotic cirrhosis. In 2020, a proposal was made to change this terminology by introducing the term “metabolic dysfunction-associated fatty liver disease” (MAFLD) to replace NAFLD. (MAFLD) :Chronic hepatic steatosis in children, with excess adiposity or other evidence of metabolic dysfunction such as type 2 diabetes and after exclusion of other causes such as genetic or metabolic disorders, infections, use of steatogenic medications, ethanol consumption, or malnutrition . The proposed diagnostic criteria for MAFLD are based on the evidence of fatty liver disease, which can be detected by blood biomarkers, imaging techniques, or liver histology. In recent years, several non-invasive screening and diagnostic assessments have been developed for the evaluation of NAFLD. ALT has long been accepted as an accurate indicator of liver damage and inflammation; it has been commonly used in disease monitoring and earlystage clinical trials for NAFLD. NASPGHAN recommends the assessment of ALT levels in children over 10 years of age with a BMI ≥ the 85th percentile as a screening measure for NAFLD . Fatty liver disease is often diagnosed incidentally via imaging checks such as abdominal ultrasound, CT scan, or magnetic resonance imaging (MRI). Magnetic resonance spectroscopy (MRS) measures proton signals as a function of their resonant frequency to separate the signal fractions of fat and water. NASPGHAN guidelines recommend performing a liver biopsy in patients who have increased risk of NASH and/or advanced fibrosis such as those with high ALT levels (80 U/L), splenomegaly, or an aspartate aminotransferase (AST) to ALT ratio of 1 . Consideration must also be made to other causes of fatty liver disease that may mimic MAFLD or coexist with it. The treatment of MAFLD, in addition to diet and exercise, is based on the use of omega-3 fatty acids. It has been demonstrated well that the omega-3 series, eicosapentaenoic acid and DHA, improve hepatic lipid metabolism and adipose tissue function and act as anti-inflammatory agents.

Gastroenterology and Nutrition

Practical workshop to increase breastfeeding skills

Dr. Mahmoud Ravari [1] © Ⓟ

[1] **Member of the Board of Directors of the Scientific Association for the Promotion of Breastfeeding**

Abstract: Breastfeeding is a public health issue. In this context, health care providers, especially pediatric specialists, play an important role in promoting and supporting breastfeeding in general. As a learned skill, there is a critical need to improve breastfeeding skills among pediatricians. Preventation of breastfeeding problems by good positioning and Latch-On Well is very critical point in successful breastfeeding. In one study, 94% of the mothers who had breastfeeding problems also had incorrect, “nipple sucking” while nipple-sucking group 88% had further breastfeeding problems, with a high incidence of insufficient milk and sore nipples, as long as approximately 90% of all breastfeeding problems can prevent or solved by good latch-on. The use of tools in breastfeeding is also an important matter, so that in case of not feeding directly from the breast, the mother's milk can be fed to the infant in appropriate ways so as not to cause disruption in breastfeeding. Unfortunately, in our country, due to the lack of a specific breastfeeding curriculum in the educational programs during the residency, pediatrician have insufficient knowledge in the field of breastfeeding, more important and especially the lack of breastfeeding skills necessary to solve the common problems during breastfeeding. In this practical workshop, in order to increase breastfeeding skills for my colleagues, We focus our workshop will be done on issues such as correct breastfeeding positions and the techniques and how to achieve a good latch-on by the infant, using tools in alternative feeding methods related to breastfeeding, how expressing the mother's milk, and solving common breast problems in breastfeeding.

Gastroenterology and Nutrition

Reporting of two cases of chronic diarrhea in infancy with uncommon causes:

Masoumeh Asgarshirazi [1] © ℗

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Abstract: Here I present two infants with chronic diarrhea which started in early infancy. Case I: She was a 2 months old with severe watery diarrhea from about 1 month ago. She was admitted with severe dehydration, severe metabolic acidosis and moderate hypernatremia. She was born to consanguineous parents. She had previously been hospitalized at 1.5 months of age with a similar presentation at another facility and despite being discharged with a lactose-free formula and zinc supplement, her diarrhea persisted. She had osmotic diarrhea. Following fluid and electrolyte management and comprehensive evaluation, glu-gal malabsorption was identified as the likely cause of her diarrhea. She responded well to fructose based formula and was discharged upon recovery. Case II: He was a seven months old infant with diarrhea from 2 months ago. He had generalized erythema and scaling of skin from birth. He was born to consanguineous parents too. He had undergone two skin biopsies, revealing ichthyosis in one and psoriasis in another. A hair biopsy also indicated trichorrhexis. He had osmotic diarrhea and hyper IgE. Considering all of findings, the probable cause of disease was Netherton syndrome in which food allergy is common. Initial treatment with a completely hydrolyzed formula did not resolve his diarrhea. However, upon switching to an amino acid-based formula, the diarrhea ceased .

Gastroenterology and Nutrition

The irritable bowel syndrome in children

Parisa Rahmani [1] © Ⓟ

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Abstract: The irritable bowel syndrome (IBS) is a functional gastrointestinal disorder (FGID), whose prevalence has widely increased in pediatric population during the past two decades. The exact pathophysiological mechanism underlying IBS is still uncertain, thus resulting in challenging diagnosis and management. Experts from 4 Italian Societies participated in a Delphi consensus, searching medical literature and voting process on 22 statements on both diagnosis and management of IBS in children. Recommendations and levels of evidence were evaluated according to the grading of recommendations, assessment, development, and evaluation (GRADE) criteria. Consensus was reached for all statements. These guidelines suggest a positive diagnostic strategy within a symptom-based approach, comprehensive of psychological comorbidities assessment, alarm signs and symptoms' exclusion, testing for celiac disease and, under specific circumstances, fecal calprotectin and C-reactive protein. Consensus also suggests to rule out constipation in case of therapeutic failure. Conversely, routine stool testing for enteric pathogens, testing for food allergy/intolerance or small intestinal bacterial overgrowth are not recommended. Colonoscopy is recommended only in patients with alarm features. Regarding treatment, the consensus strongly suggests a dietary approach, psychologically directed therapies and, in specific conditions, gut-brain neuromodulators, under specialist supervision. Conditional recommendation was provided for both probiotics and specific fibers supplementation. Polyethylene glycol achieved consensus recommendation for specific subtypes of IBS. Secretagous and 5-HT4 agonists are not recommended. In children with IBS-C. Certain complementary alternative therapies, antispasmodics and, in specific IBS subtypes, loperamide and rifaximin could be considered.

Hematology and Oncology

Aplastic anemia (AA) in children

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Abstract: Abstract: Aplastic anemia (AA) is a rare and heterogeneous disorder. The presentation of aplastic anemia is the presence of at least 2 lineage cytopenia with Hb 10 g/dL,platelet 50 × 109/L, or Neutrophil 1.5 × 109/L. In modified classification of AA the BM cellularity, platelet count, (ANC) and Reticulocyte count are included , So pancytopenia & hypocellular BM ,replaced by marrow fat cells , absence of an abnormal infiltrate ,major dysplasia or marrow fibrosis are important findings in these patients. The incidence of aplastic anemia is about 2–3 /million /Y (all age groups) . AA has Biphasic distribution, with peaks at 10–25 Y and also 60. Aplastic anemia is associated wide differential for causes of pancytopenia in children. One of the most important points in diagnosis and management of aplastic anemia in children is diagnosis of inherited Bone marrow failure (BMF) syndromes that is seen in 20% of aplastic anemia of children (22 Fanconi anemia -FA genes and 10 Dyskeratosis congenita-DKC genes),from Acquired (Idiopathic , infections , drugs , ……..) . HSC compartment in BMF is disrupted either by constitutional mutations of genes involved in hematopoiesis, or through a direct destruction of HSCs by cytotoxic agents or an immune-mediated attack. So in evaluation of aplastic anemia in children attention to the Family history and the presence of physical abnormalities are recommended. In paraclinical evaluations one of the most important laboratory testing is HLA typing ,at the time of diagnosis ,Before beginning the treatment. Treatment options for newly diagnosed aplastic anemia (AA) patient include; Upfront allogeneic hematopoietic stem cell transplant (HSCT)and Immunosuppressive therapy (IST). Currently, the decision to select HSCT or IST as upfront treatment is based on patient's age and availability of a (HLA) matched donor. The prognostic factors in aplastic (AA) of children for HSCT : Interval from diagnosis to transplant more than than 180 days, Age ≥ 20 years , peripheral blood (PB) stem cell source, No (ATG) in conditioning ,Cytomegalovirus donor/recipient status conclusion: Aplastic Anemia (AA) in children is a disease that needs ergent evaluation & treatment duo to serious events & high.

Hematology and Oncology

Association of Bloom's Syndrome and Triple Phakomatosis Overlap Syndrome in an 8 year-old Iranian Girl

Elham Shahgholi [1] © ℗, Nahid Khosroshahi [2], Zahra Heidari [2], Seyedeh Sara Sadeghi [3]

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Abstract: We describe an 8-year-old girl who presented with pancytopenia, failure to thrive, developmental delay, vascular skin lesions on her face, a Mongolian spot on her trunk, right upper limb hypertrophy, congenital bilateral glaucoma, and Ota nevus of the sclera. She had a positive history of seizures since infancy, which were controlled with anticonvulsant therapy. She was the second-born child of a consanguineous marriage, with no significant family history. Physical manifestations were compatible with Klippel–Trenaunay syndrome (KTS), Sturge–Weber syndrome (SWS), and phakomatosis pigmentovascularis (PPV), collectively referred to as "triple overlap syndrome." A brain CT scan revealed atrophy, calcification, and leptomeningeal involvement. Molecular and karyotyping analyses suggested chromosomal breakage due to a mutation in the BLM gene located on chromosome 15 (gene locus 15q26.1), confirming the diagnosis of Bloom's syndrome. The coexistence of Bloom's syndrome and triple PPV, SWS, and KTS phakomatosis overlap syndrome in one child has not been reported so far. This Iranian child is a unique case presenting with both Bloom's syndrome and triple phakomatosis overlap syndromes simultaneously. Keywords: Bloom's syndrome, Klippel–Trenaunay syndrome, phakomatosis pigmentovascularis, Sturge–Weber syndrome, overlap syndrome.

Hematology and Oncology

Diagnosis & Management of Immune thrombocytopenic purpura (ITP) in children

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Abstract: Most common cause of thrombocytopenia in children of any age but peak occurrence between 2 - 5 years of age. In most children the disease is self-limited, with resolution in 80%of patients within 12 months from diagnosis. Isolated primary condition or it may be secondary to other conditions. Autoantibodies are directed against GPIIb -GPIIIa, GPIb- GPIX, & GPIa-IIa that follicular B cells in the spleen are heavily involved in synthesis. Diagnosis ITP is a diagnosis of exclusion. Findings that support the diagnosis include the following: • Abrupt onset of symptoms • Recent viral infection • Recent vaccination (particularly live vaccine) • Isolated thrombocytopenia (platelet count 100 × 109/L), with normal red and white blood cell counts, except for bleeding-releated anemia • Previous normal platelet count • Normal or slightly elevated mean platelet volume First-Line Therapies for Children; • Intravenous immunoglobulin (IVIg), 0.8 g/kg in a single dose • Intermediate- to high-dose corticosteroids: o Prednisone 1-2 mg/kg/day for 15 days orally o Methylprednisolone 5-10 mg/kg/day for 3 days intravenously o Dexamethasone 0.6 mg/kg/day for 4 days or emergency treatment of uncontrolled bleeding, combination therapy with IVIg plus prednisone or high-dose methylprednisolone is appropriate. Recommended second-line treatments are as follows: o Additional courses of first-line therapy in combination o Thrombopoietin receptor agonists (eltrombopag or romiplostim) o Immunosuppressive drugs (mycophenolate mofetil, sirolimus) o Rituximab Splenectomy is very rarely indicated, and should be considered only in children 5 years of age who are having thrombocytopenia-related bleeding despite all available medical therapies and whose life is at risk or whose health-related quality of life (QoL) is substantially impaired. Recommendations for a watch-and-wait policy, based on clinical classification, are as follows: At diagnosis, children and adolescents with ITP and mild or even moderate bleeding on a pediatric bleeding assessment All patients need regular reevaluation to monitor for worsening, including health-related quality of life and evolution to a serious bone marrow disorder or a secondary form of ITP. The frequency of clinical and laboratory monitoring should be based on bleeding.

Hematology and Oncology

Glucose-6-phosphate Dehydrogenase Deficiency

Alieh Safari [1] © Ⓟ

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Abstract: Glucose-6-phosphate Dehydrogenase Deficiency Glucose-6-phosphate dehydrogenase deficiency is a genetic disorder that affects red blood cells, which carry oxygen from the lungs to tissues throughout the body. In affected individuals, a defect in an enzyme called glucose-6-phosphate dehydrogenase causes red blodd cells to break down permaturely. This distruction of red blood cells is called hemolysis. The most common medical problem associated with glucose-6-phosphate dehydrogenase is hemolytic anemia, which occurs when red blood cells are destroyed faster than the body can replace them. This type of anemia leads to paleness, yellowing of the skin and whites of the eyes (jundice), dark urine, fatigue, shortness of breath, and rapid heart rate. In people with glucose-6-phosphate dehydrogenase deficiency, hemolytic anemia is most often triggered by bacterial or viral infections or by certain drugs (such as some antibiotics, and medication used to treat malaria). Hemolytic anemia can also occure after eating fava beans or inhaling pollen from fava plants (a reaction called favism). Glucose-6-phosphate dehydrogenase deficiency is also a significant cause of mild to severe jundice in newborns. Many people with this disorder , however, never experience any signs or symptoms and are unaware that they have the condition.

Hematology and Oncology

Hematopoietic Stem Cell Transplantation for Malignant and Non-malignant Hematological Diseases

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Abstract: Allogeneic hematopoietic stem cell transplantation, or Allo-HSCT, is a treatment in which patients get intravenous injections of healthy donor stem cells following a conditioning regimen to replace their own stem cells. The procedure aims to eradicate cancer or improve the generation of blood and immune cells. For relapsed or resistant hematological malignancies, allo-HSCT is currently regarded as standard care. The best results from HSCT are obtained in these individuals when the illness is in remission, and pre-transplant treatment may be contributing to these outcomes. Moreover, in high-risk instances, it is advised to look into locating a suitable donor as soon as possible after diagnosis because it might take some time to discover the donor in these individuals. Allo-HSCT is also employed in a variety of hemoglobinopathies and benign hematological diseases, including inherited and acquired cytopenia. In these circumstances, in addition to reducing the consequences of blood product transfusion, it can also prevent the condition from advancing to malignancy in those who are predisposed to myelodysplastic syndrome (MDS) or acute myeloid leukemia. Therefore, Allo-HSCT has a major advantage for patients with acquired cytopenia who require blood product infusions or who are at risk of developing MDS/AML. To reduce difficulties associated with disease progression and blood product transfusion, these patients should be monitored on a regular basis and referred to HSCT as soon as possible.

Hematology and Oncology

Polycythemia in Pediatric Renal Disease

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Abstract: Kidneys play a crucial role in regulating hematopoiesis, particularly by secreting most of the erythropoietin (Epo), a key hormone that stimulates red blood cell (RBC) production and so renal diseases could potentially impact erythropoiesis and hemoglobin (Hb) levels. Polycythemia or absolute erythrocytosis are interchangeable terms for an abnormally increased number of erythrocytes, which are defined as Hb or hematocrit (Hct) levels measured above the 99th percentile adjusted for age and gender or an increase of 2 g/dl in basal Hb levels or a red blood cell (RBC) mass greater than 125% of the sex- and body mass-predicted RBC mass. Erythrocytosis in pediatric population is more often seen as a secondary condition and occurs as a physiological response to hypoxia or other stimuli that promote the proliferation of normal erythroid progenitors by means of increased production of Epo or other circulating erythropoietic stimulating factors. In primary polycythemia, which is considered as a rare myeloproliferative disorder and could be congenital (germline mutations) or acquired (somatic mutations), the erythroid progenitors are either independent or hypersensitive to Epo. In renal diseases, such as cystic diseases of the kidney and renal artery stenosis, impairment of the oxygen sensing mechanisms and upregulation of hypoxia-inducible factors could lead to secondary polycythemia. Moreover, in renal tumors (like renal cell carcinoma and reninoma) with excessive Epo production, secondary polycythemia could be observed as a paraneoplastic syndrome. Polycythemia associated with nephrotic syndrome is very rare. Increased Epo production as a result of renal hypoxia due to nephrosarca seen in nephrotic range proteinuria could potentially cause secondary polycythemia in patients with nephrotic syndrome. In summary, polycythemia and kidney disease represent a dual pathway that should be regarded as significant in the clinical diagnosis process.

Hematology and Oncology

Study on the factors influencing the response to intravenous immunoglobulin in patients with immune thrombocytopenia referred to Bahrami Hospital in 2021-2022

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Abstract: Background : For the treatment of immune thrombocytopenia (ITP) in children, many pharmacological treatments are being considered, among which the administration of intravenous immunoglobulin (IVIG) is particularly known for improving the therapeutic response and preventing the recurrence or chronic forms of the disease. However, this therapeutic response to IVIG may itself be influenced by various factors. The aim of the present study was to investigate the factors associated with the response rate to IVIG treatment in children with ITP. Methods: The population of this cross-sectional study included children under the age of 15 who were diagnosed with ITP and admitted to Bahrami Hospital in Tehran from 2021 to 2022. Information on each patient, including age, gender, comorbidities, platelet count at the time of diagnosis and duration of treatment at the start of the study, was obtained by reviewing the hospital's data registry. Treatment outcomes, including treatment success and disease recurrence or chronicity, were also recorded. Findings: Of the 41 patients examined, 7 (17.1%) cases failed to respond to IVIG treatment and received additional treatment with corticosteroids. In terms of baseline characteristics, there was a significant difference between patients with and without response to IVIG treatment. In terms of background characteristics, in patients with and without response to IVIG treatment, first, the frequency of boys was 14.3% and 73.5%, and the frequency of girls was 85.7% and 26.5%, respectively, and this difference was significant (P value=0.003). The mean initial platelet count was 22676.47±18514.07 and 13857.14±7883.07, respectively, indicating a significant difference between the two groups (P value=0.045). Based on the analysis of the area under the receiver operating characteristic (ROC) curve (AUC), an initial platelet count of less than 9,000 (AUC of 0.72, sensitivity of 67.6%, and specificity of 42.9%) was predictive of non-response to IVIG treatment. Conclusion: In children with ITP, the response rate to IVIG administration was 82.9%, which may be influenced by the patient's gender and initial platelet count. Thus, male gender and a low platelet count at the time of admission are predictive factors for a lower response to treatment in these patients.

Immunology

overview of thalassemia

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Abstract: Thalassemia is a hereditary blood disorder in which the amount of hemoglobin and red blood cells in the affected person is lower than normal. Hemoglobin is a protein molecule that exists in red blood cells and allows blood cells to carry oxygen. This disorder leads to excessive destruction of red blood cells and causes anemia. Thalassemia is an inherited disease, meaning that at least one of your parents must be a carrier of the disease. Actually, thalassemia is caused by genetic mutation or deletion of some specific gene parts. Mild thalassemia does not require treatment; But a more severe form of this disease requires frequent blood transfusions. The type of thalassemia depends on the number of gene mutations inherited from the parents and which part of the hemoglobin molecule is affected by the mutation. The more genes that are mutated, the more severe the thalassemia. In fact, the hemoglobin molecule is made of alpha and beta chains that can be affected by gene mutations. The symptoms of thalassemia in each person are different depending on its type and severity; But some of the most common symptoms of thalassemia are: Fatigue, weakness, paleness or yellowing of the skin, bone deformities, especially facial bones, growth delay. Complications of thalassemia include the following: iron overload. heart problems. Infection. Bone deformities. splenomegaly. Slow growth. The treatment of thalassemia may be different according to the type and severity of the disease. Thalassemia treatments generally include the following: blood transfusions, bone marrow transplants, medications and supplements, splenectomy, gene therapy.

Immunology

50th anniversary of Expanded Program on Immunization, global and national achievements

Seyed Mohsen Zahraei [1] © ℗

[1] **Center for Communicable Disease Control, Ministry of Health and Medical Educationn**

Abstract: Childhood immunization is a global investment to save the lives of about 4 million people in the world every year. The immunization development program was approved by the member countries of the World Health Organization in 1974. The goal of this program was to cover all children in all countries of the world, both rich and poor, developed and developing in the same way. Despite the very good progress at the global level, unfortunately, according to the report of the World Health Organization in 2022, 22 million children in the world are deprived of receiving the minimum required vaccines, most of whom live in developing countries. During the 50 years since the beginning of the vaccination development program, vaccination has been able to prevent the death of 154 million deaths of children under 5 years of age in the world. For every life saved through vaccination, an average of 66 years of good health are gained, which equates to a total of 10.2 billion years of good health over the past five decades. Nearly 94 million of the 154 million child lives saved since 1974 have been the result of measles vaccine protection. However, 33 million children still did not receive the full measles vaccine in 2022: nearly 22 million did not receive their first dose and another 11 million did not receive their second dose. In Iran the Expanded Program on Immunization, EPI was officially started as an essential component of primary health care in 1984. Currently, all children in the country are vaccinated against diphtheria, whooping cough, tetanus, polio, measles, rubella, mumps, tuberculosis, hepatitis B and Hemophilus influenza type B, pneumococcus and rotavirus. Neonatal tetanus disease in 1995, polio in 2000, and indigenous measles and rubella viruses in 2019 are verified by the World Health Organization. The country has been free of polio for 24 years and the diseases of diphtheria, pertussis and mumps have been controlled. The amount of chronic hepatitis B carriers has also decreased from 3% of the population in 2010 to about 1% in recent years.

Immunology

Management of Acute Asthma Exacerbations

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Abstract: Asthma is a major global health problem affecting as many as 300 million people worldwide, is a variable chronic disease that can result in episodic or persistent respiratory symptoms (e.g. shortness of breath, wheezing, chest tightness, cough) and airflow limitation, the latter being due to bronchoconstriction, airway wall thickening, and increased mucus secretion. The best strategy for ED management of an asthma exacerbation is early recognition and intervention, continuous monitoring, appropriate care and management after ED discharge. Establishing a diagnosis of asthma exacerbation in young children is often challenging and requires a careful clinical assessment. Children and youth with acute asthma exacerbations frequently present to an emergency department with signs of respiratory distress. The most severe episodes are potentially life-threatening. Effective treatment depends on the accurate and rapid assessment of disease severity at presentation. Assessment, management, and disposition of pediatric patients with a known diagnosis of asthma who present with an acute asthma exacerbation is of great importance. Guidance includes the assessment of asthma severity, treatment considerations, proper discharge planning, follow-up, and prescription for inhaled corticosteroids to prevent exacerbation and decrease chronic morbidity. The main initial therapies include administration of rapid -acting inhaled bronchodilators, systemic corticosteroids, and controlled flow oxygen supplementation. The aim is to relieve hypoxemia, diagnosis the underlying inflammatory pathophysiology, infection control and prevent relapse.

Immunology

Pediatric contact dermatitis

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[1] **Assistant Professor of Dermatology, Razi Hospital, TUMS.**

Abstract: Pediatric dermatitis, an inflammatory skin reaction, is divided into two subtypes, allergic contact dermatitis and irritant contact dermatitis. ICD is the most common type of exogenous dermatitis in both children and adults; it does not need a prior sensitization and can present similarly to ACD with edema, erythema, vesicles, bullae, and also with ulceration and necrosis. ICD is usually more sharply defined than ACD. ACD, A type 4 hypersensitivity reaction, affects children at similar rates to adults, but childhood cases are likely underdiagnosed. Having a consensus on the allergens to patch test in children is a key step in overcoming a major challenge in diagnosing allergic contact dermatitis in children. Although the incidence of ACD is similar in both adults and children, children are patch-tested at a lower frequency, and thus, many cases of pediatric ACD are missed. In this presentation, pediatric contact dermatitis clinical features, diagnosis, and treatments will be discussed.

Immunology

Pitfalls in the Diagnosis and management of asthma in children (Case presentation)

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Abstract: A three-year-old child is brought to the emergency room with severe respiratory distress. Due to the lack of response to the initial treatments, the patient was admitted to the ICU and intubated. At first, lung examination with diffuse wheezing and CXR revealed lung hyperinflation. The patient's family did not give a history of her asthma or using spray. Now, she has no history of choking, but she has been suffering from cold symptoms for a few days. Considering the above-mentioned detailed history, when she had severe cough and breathing problems with cold symptoms every time, after going to the physician, he got better by injecting a milky-colored ampoule. But this time, her symptoms did not decrease with this prescription. Therefore, we understand from history that the patient had asthma, and the previous treatments were wrong, which led to problems in both the diagnosis of asthma and the management of this disease by the previous physicians. Herein, the patient was diagnosed with asthma, the sprays were started, and an action plan was given, and now that 5 years have passed since then, she has not needed to go to the emergency room even once. Therefore, it is necessary for physicians to describe the nature of this disease to the family after diagnosing asthma in a child. Furthermore, sprays should be prescribed and how to use them should be explained to have efficient and effective management of asthma. The second case is a ten-years-old patient who was referred from the endocrine clinic to the allergy and immunology clinic. This child had gone to the endocrinology clinic due to growth disorder and hirsutism, and it was stated in the medical history that he was treated with monthly betamethasone injections due to shortness of breath and asthma. This treatment has been going on for a year and a half. The patient's asthma could be controlled by using sprays and without side effects, which unfortunately occurred due to the lack of knowledge of the physician. Conclusion: correctly diagnosing asthma and training patients in using sprays are important in efficient managing asthma.

Immunology

The importance of using DMSA scan in comparison with other imaging modalities in the early detection of renal parenchymal involvement in children with the first episode of febrile UTI

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Abstract: Urinary Tract Infection (UTI) is one of the most common infections in infants and children. The high risk of pyelonephritis in the presence of a febrile UTI and possible complications including renal scarring, HTN and chronic renal disease, warrants accurate and timely diagnosis, evaluation and therapy. The review of medical literature shows that the changes made in the renal cortex due to infection in the acute stage of the disease become permanent scars in 36% - 52% of patients in the next nuclear imaging. In 2011, imaging studies in selected international guidelines for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months were revised. Some of suggestions in the latest revision were as follows: 1- Except ultrasound, there is no need to use other imaging modalities. 2- If the ultrasound is normal, there is no need to do cystography. 3- Renal cortical scintigraphy should be avoided in the acute phase of the first febrile UTI. 4-The follow-up of the patients was conditional on the recurrence of febrile UTI. Significant controversy surrounded this recommendation, and many Authors disagreed with the AAP guidelines according to the research done and for the following reasons, ultrasound cannot be a suitable and comprehensive imaging modality in evaluating a child with the first episode of febrile UTI. On the other hand, in the majority of prospective studies expressed in high sensitivity of DMSA scans compared to ultrasound in the identification of renal parenchymal involvement. These guidelines are presented while the findings of renal cortical in at least 19 prospective studies conducted in the world (from 1991 to 2019) (4 studies in Iran, one of which has not yet been published) show that renal parenchymal involvement in children with the first episode of febrile UTI is 44.1 to 88% with an average of 67.9%. Conclusion: It is recommended to continue to use the DMSA scan as the first, most sensitive and most reliable imaging method to identify renal parenchymal involvement in children with the first episode of febrile UTI in order to prevent or decrease the process of missing.

Infectious

Notes on 10-valent pneumococcal conjugate vaccine (PNEUMOSIL)

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Abstract: The 10-valent pneumococcal conjugate vaccine produced by the Serum Institute of India (SII) under the brand name PNEUMOSIL was introduced into Iran's National Immunization Program in 2024. This vaccine is manufactured in India and includes serotypes 1, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, and 23F. Serotypes 3, 4, and 18C are included in the 13-valent Prevenar vaccine, but are not present in the 10-valent Indian vaccine. Additionally, there is a 10-valent vaccine manufactured by GSK in England called Synflorix, which lacks serotypes 3, 6A, and 19A compared to the 13-valent vaccine. Like the 13-valent Prevenar vaccine, the PNEUMOSIL vaccine is conjugated with the CRM197 carrier protein. This vaccine is administered using the 2+1 protocol at the age of 2, 4, and 12 months. Iran is not the only country following this schedule, many countries including Australia, Switzerland, Sweden, Belgium, Denmark, Finland, Turkey, Singapore, Germany, Spain, France, Italy, the Netherlands, and Tunisia, also recommend the vaccine at 2, 4, and 12 months. The PNEUMOSIL vaccine is available in single-dose and five-dose vials with each ach dose being 0.5cc. Before injection, the vial of the vaccine, which is in suspension form, should be shaken well and injected deep into the muscle at the anterior superior part of the thigh. The vaccine can be stored in the refrigerator for up to 28 days at the proper temperature but should not be frozen. The common side effects of this vaccine include fever, redness, swelling, pain and stiffness at the injection site. The only contraindication for this vaccine is a severe allergic reaction such as anaphylaxis following a previous dose. The vaccine is non-living, therefore it can be safely administered to individuals with from primary and secondary immune deficiencies and can be given simultaneously with other vaccines.

Infectious

Seroprevalence of Measles and Rubella IgG Antibodies in Children and Pregnant Women in Iran

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Abstract: Background: Complete immunization against Rubella and Measles (MR) in pediatrics is achieved using 2 doses of the Measles, Mumps, and Rubella-containing vaccine (MMR) in Iran at 12 and 18 months of age, where more than 95% of children under 5 years of age are vaccinated. Antibody waning in mothers and older children, and genetic diversity in immune responses may render them susceptible to infections. Objectives: This study aimed to investigate the diversity in immunoglobulin G (IgG) antibody levels against these two viruses in pregnant women, infants younger than 2 months, children at 6, 12, and 18 months, and 5 - 6 years of age in Iran. Methods: This study was conducted on serum specimens sent to the National Reference Laboratory for Measles and Rubella in Tehran, Iran, from children under 2 months (n: 50), 6 (n: 54), 12 (n: 54), and 18 (n: 39) months, and 5 - 6 years old (n: 49), as well as women at 37 weeks of pregnancy (n: 53), from May to December 2020. Rubella and Measles-specific IgG were measured using an enzyme-linked immunosorbent assay kit. Results: Among serum samples from different provinces of Iran, the lowest positive level of Measles IgG was observed in children aged 6 and 12 months (7.41%), while the highest positive level was found in children aged 18 months (84.62%). For Rubella, the lowest IgG-positive level was seen in children aged 11 - 13 months (11.11%), while the highest positive level was observed in the 5 - 6 years old group (83.67%). Antibody levels against measles and rubella were higher in pregnant women than in children. Conclusions: Measles and Rubella antibody titers were lower in children 12 months before vaccination and reached a positive level in children aged 18 months post-vaccination. Whereas, lower Measles IgG levels in 5 - 6 years old children compared to 18 months old children may be due to waning antibodies. Pregnant women exhibited high levels of protection against these

Infectious

Study on relationship between vitamin D deficiency and the severity of clinical symptoms of seasonal influenza among children referred to Ayatollah Hojjat Koh Kemari Hospital in Marand

Leili Maghbouli [1] © ℗, Ommolbanin Rahimi [1], Mina Maghbouli [2], Mehri Ejtemaii [1], Roghayeh sheikhbaglou [1]

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Abstract: Introduction: Seasonal influenza is a common disease, especially in young children in the cold seasons of the year. This disease, especially in the Azerbaijan region, has led to serious complications and hospitalization of children in recent years. Strategies for preventing this virus or reducing its severity and complications have been discussed. This study aimed to evaluate the effect of vitamin D on the incidence of the disease and the severity of its complications. Method: In this cross-sectional study, the number of 100 children at different ages from newborn to 7 years with seasonal influenza was examined, and they were divided into two groups based on the normal level of vitamin D and vitamin D deficiency. Patients were compared in two groups in terms of hospitalization or outpatient treatment, muscle pain, duration (fever, cough and runny nose) and frequent recurrence. Results: In this study, 61 patients with vitamin D deficiency and 39 patients with normal vitamin D levels were compared in terms of the severity of influenza symptoms. The duration of fever in the group of patients with vitamin D deficiency was significantly longer than the group with normal vitamin D level (P=0.005). 23 cases (37.7%) of children with vitamin D deficiency and 10 cases (25.6%) of children with normal vitamin levels were hospitalized due to the severity of influenza symptoms (P=0.001). The duration of cough in patients with vitamin D deficiency was significantly longer than that of patients with normal vitamin D levels (P=004), however, no significant difference was found in the duration of runny nose in the two groups. Also, frequent infections during the last four months have been more among children with vitamin D deficiency than children with normal vitamin D levels. Discussion: It seems that sufficient or even high levels of vitamin D are effective in reducing the severity of the disease and complications caused by seasonal influenza. On the other hand, the lack of this vitamin is one of the risk factors in the course of the disease and even the aggravation of the symptoms of influenza.

Infectious

Warts and Molluscum Contagiosum in Pediatric Populations

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Abstract: Warts and molluscum contagiosum are prevalent viral skin infections in children, resulting from distinct viral pathogens. Warts are primarily associated with the human papillomavirus (HPV), which encompasses over 200 genotypes, leading to various clinical presentations, including common warts (verrucae vulgaris), plantar warts (verrucae plantaris), and flat warts (verrucae planae). These lesions arise from epidermal hyperplasia and are often self-limited, although they can cause discomfort and psychological distress. Molluscum contagiosum, caused by the molluscum contagiosum virus (MCV), is characterized by umbilicated papules. The transmission occurs through direct skin-to-skin contact or fomites, particularly in communal settings. The immune response plays a crucial role in the natural resolution of molluscum lesions, which can take several months to years. Diagnosis of both conditions is primarily clinical, supported by the characteristic morphology of the lesions. Treatment modalities for warts include cryotherapy, topical keratolytics, and immunotherapy, while molluscum contagiosum may be managed through observation, curettage, or topical antiviral agents in symptomatic cases. Understanding the epidemiology, pathogenesis, and treatment options for warts and molluscum contagiosum is vital for optimizing management strategies in pediatric patients and minimizing morbidity associated with these conditions.

Neonatology

A review on the latest research's in Neonatal Seizure

Kayvan Mirnia [1] © ℗

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Abstract: Introduction: A recent analysis of research on neonatal seizures has underscored the critical importance of precise and accurate diagnosis in developing effective treatment strategies. The study emphasized that the use of electroencephalography (EEG) is indispensable for determining the type and severity of seizures, as clinical observations alone often prove insufficient. While phenobarbital remains the first-line treatment for neonatal seizures, the research highlighted a significant gap in knowledge regarding second-line options. Despite its effectiveness, phenobarbital is associated with potential adverse effects, prompting recommendations for its limited use and early discontinuation when possible. The literature stressed the importance of considering the underlying cause of seizures when selecting treatment. For instance, neonates with suspected channelopathies may require different medications compared to those with other seizure etiologies. Additionally, the presence of cardiac disorders might influence the choice of second-line treatment. Discussion and conclusion: A notable departure from previous guidelines is the recommendation to discontinue anti-seizure medication (ASM) after acute seizures resolve without evidence of neonatal-onset epilepsy. This approach aims to minimize unnecessary medication exposure in newborns.

Neonatology

Antibiotics in Neonatal sepsis

Maral Ghassemzadeh [1] © Ⓟ

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Abstract: Antibiotics in Neonatal Sepsis Be careful not routinely use antibiotics in neonates without risk factors or any infection indicators. Sepsis, the main cause of neonatal morbidity and mortality, if diagnosed timely , is often a curable and preventable disease. Sepsis appropriate management , according to rational antibiotic selection, dosage and treatment duration, is not only beneficial for each patients individually, but also is beneficial for perspective of global health and microbial resistance pattern in future. First choice empiric IV antibiotics in EOS is benzyl penicillin and gentamicin. If any microbiological evidence of gr- sepsis , add third antibiotic (cefotaxime) . If gr- sepsis confirmed, stop benzylpenicillin. If B/C is negative and baby is well with no strong infection suspicion,stop antibiotics after 5 days. In case of positive B/C or strong infection suspicion continue for 7 days. In LOS ,consider both gr- and gr+. In suspected LOS NICU patients , use a combination of narrow-spectrum antibiotics IV flucloxacillin plus gentamicin as first-line. In LOS suspected neonates, admitted from home, IV ampicillin or amoxicillin and cefotaxim is suggested. When given antibiotics for suspected LOS stop antibiotics at 48 hours if B/C is negative, initial infectiob suspicion wasn't strong whit reassuring CRP trends and clinical condition. Give antibiotic 7 days when B/C is positive. Continue antibiotics more than 7 days if : patient hasn't yet fully recovered, longer treatment is needed because of specific pathogen identified on B/C (gr- or S.A),special infection sites (e.g. abdominal pathology, NEC , osteomyelitis or infected CVC).Use shorter duration when patient recovers promptly, no pathogen is identified or if identified is a common commensal (CONS) If in suspected meningitis case who is admitted in NICU, pathogen is unknown and CSF sample uninformative, use intravenous amoxicillin and cefotaxim. In NICU patient with gr- meningitis, stop amoxicillin and use cefotaxime alone. And if gr+, continue intravenous amoxicillin and cefotaxim, waiting for CSF/C .If CSF/C is GBS+,change to Benzylpenicillin for at least 14 and gentamycin for 5 days. If B/C or CSF/C is shown listeria, stop cefotaxime and use amoxicillin and gentamicin.

Neonatology

Discharge planning of premature neonates (A review of articles)

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Abstract: Introduction: Advances in neonatal intensive care have improved the survival of high-risk preterm and critically ill term infants and they continue to need comprehensive clinical care after discharge. This topic will review the care of the NICU graduate, focusing on the role of the nutritional requirements of premature neonates after discharge. Discussion: It is the goal for NICU graduates, to receive maternal breast milk for as long as the mother can provide it during the first year of life. Some preterm infants will be discharged with fortified breast milk or supplemental formula feeds to ensure adequate caloric intake for growth. Monitoring the growth and nutritional management of the preterm NICU graduate are very important and should be done by the initial visits which should occur within 48 to 72 hours after discharge from the hospital. For infants who are receiving supplemental nutrition and/or diuretic therapy, follow-up laboratory testing may be needed including hematocrit, reticulocyte count, electrolytes, calcium, phosphate, alkaline phosphatase, and vitamin D levels. The current consensus recommendation for enteral calcium is 120 to 220 mg/kg and for phosphorus is 70 to 120 mg/kg/day for preterm infants. For enterally fed preterm infants, intakes up to 3 µg/kg/day are recommended. Preterm infants are at increased risk for the development of iron deficiency, which can have adverse effects on brain development. The recommended iron intake in enterally fed premature infants is 2 to 3 mg/kg/day. In general, enteral iron supplementation may be started between 2 and 4 weeks of age. Recommendations for vitamin D intake in enterally fed preterm infants are a total of 400 to 1000 IU/day. Vitamin E in formula, required as 0.6 mg/g of PUFAs, provides adequate amounts to prevent hemolysis of red blood cell membranes when iron intake is not excessive.

Conclusion: To emphasize the importance of a combined approach to optimize growth in the preterm infants after discharge from the NICU the physicians should follow premature infants tightly and control their growth by growth charts and prescribe specialized diet for them.

Neonatology

Etiology of neonatal seizure

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Abstract: Most neonatal seizures occur in the context of acute neurological disorder. There are many causes for neonatal seizures, but a limited etiologies accounts for most newborn infants. The most common underlying etiologies are HIE (33- 38%), stroke & intracranial hemorrhage (29%), intracranial infections, and cerebral dysgenesis (9%). Less common etiologies include inborn errors of metabolism and neonatal epileptic syndromes. The occurrence time and prevalence of seizures in relation to gestational age can help in diagnosing the cause of seizures. Neonatal Seizure Etiologies in Relation to Time of Seizure Onset and Relative Frequency. A smaller group of newborn infants have seizures as the first presentation of a neonatal epilepsy syndrome. Epilepsy syndromes are identifiable based on a typical age of onset, specific EEG characteristics, seizure types, and other factors that, when taken together, permit a specific diagnosis. The most recent classification system, identifies two major groups of Epilepsy syndromes: (1) Self-limited epileptic syndromes in which there is likely to be spontaneous remission and normal neurobehavioral outcome, and (2) Developmental and epileptic encephalopathies in which there is developmental impairment related to the underlying etiology, as well as epileptic encephalopathy. Metabolic disturbances, includes abnormalities in the level of glucose, calcium, magnesium, electrolytes, amino acids, organic acids, blood ammonia, and other metabolites; certain intoxications, especially with local anesthetics; mitochondrial or peroxisomal disturbance; pyridoxine and folinic acid responsive seizures (FARS); and glucose transporter deficiency. Timely diagnosis of these causes is important because they can be transient and/or treatable. Determination of the seizure etiology is critical to enable provision of specific treatment and specific prognostic information. As mentioned earlier, there are many causes for neonatal seizures, a limited group of etiologies accounts for most premature or term newborn infants.

Neonatology

Movements that mimic seizures in neonates

Parvaneh Sadeghi Moghaddam [1] © Ⓟ

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Abstract: Jitteriness and tremor consist of involuntary and rhythmic vibrations reciprocating with the same amplitudes around a fixed axis. Tremors can be fine with a high frequency and short amplitude, usually normal, or harsh with a lower frequency and a greater range of motion. Tremors that repeat frequently are called jitteriness. Unlike seizures, tremors start by stimulation and stop by grasping the involved limb and are not accompanied by eye movements, autonomic signs such as apnea, hypertension, vasomotor changes, and changes in pupillary size. These movements are confused with clonic seizures due to the rhythmic and oscillatory range of motions. Still, unlike clonic seizures, in tremors, both reciprocating components have the same amplitude and velocity. Pathological causes of jitteriness and tremors include hypoglycemia, hypocalcemia, drug withdrawal syndrome, hypothermia, hyperthyroidism, hypoxic-ischemic encephalopathy, intracerebral hemorrhages, and sepsis. In low-risk infants with jitteriness and normal physical examinations, blood glucose measurement is the only necessary lab test. Jitteriness that needs further investigation is the presence of perinatal complications, when the baby is not well or has an abnormal neurological examination, course tremors, tremors that don't go away during sucking or at rest. Recommended in high-risk cases include a sepsis workup, urine toxicology, brain imaging, metabolic reviews, and thyroid function test. Benign neonatal sleep myoclonus often occurs in sleep, especially during the non-REM sleep phase. It can last a few minutes or more, it is generalized or multifocal and in the form of myoclonic jumps in the muscles, but it does not involve the face. It does not stop by grabbing the limb and only stops when the baby wakes up. Usually, its duration is less than a minute, but occasionally it may be long enough to look like a status seizure. At the time of these movements, the electroencephalogram is completely normal. Anticonvulsants do not affect these movements, and benzodiazepines may even make it worse. Pathological myoclonus occurs in patients with major brain injuries due to asphyxia, severe IVH, glycine encephalopathy, or drug withdrawal syndrome

Neonatology

neonatal meningitis

Maryam Veysizadeh [1] © Ⓟ

[1] TUMS

Abstract: Neonatal meningitis is associated with higher mortality and morbidity.Pathogens responsible for meningitis are as the same in bacterial sepsis.GBS and EColi account for approximately 70% of all cases,and listeria monocytogenes accounting for additional 5% in the first week of life .on occasions,it is possible to isolate S.pneumonia and H.influenza.The sign and symptoms of neonatal meningitis are not easy to distinguish from those of sepsis.Temperature instability is the mos common sign of the disease in 60% of them.Twitching,lethargy,and seizure are also common, other common signs are feeding intolerance,emesis, respiratory distress and apnea.Gold standard od diagnosis is CSF analysis,Gram stain , culture and biochemistry .In clinical care units repeating the CSF examination and culture 2 to 3 days after the initiation of antibiotic therapy can be helpful to demonstrate the effectiveness of the anti bacterial regimen treatment.Intensive care units, hemodynamic support , fluid management, seizure control, vasopressor support are the main solution in the neonatal meningitis.The choice of AB therapy for persumed early onset or community acquired bacterial meningitis includes (ampicillin/and aminoglycosides along with third or fourth generation cephalosporine,For gr positive irganism 14day treatment and for gr negative organinism21day treatment is minimum.Neuroimaging should be considered for all patients to exclude parameningeal fici and abscess formation and to assist in assessing the infant prognosis.

Neonatology

Neonatal seizure treatment

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Abstract: Seizures in the neonate occur in 2 to 4 per 1000 live births and are a cause of neonatal morbidity and mortality. Frequently, this onset is a neurologic emergency, requiring prompt and thorough diagnostic investigations and therapeutic interventions. Rapid initial testing should detect correctable causes of neonatal seizures, such as hypoglycemia, hypocalcemia, or sodium disturbances. Hypoglycemia may be corrected with an infusion of 10% dextrose. Seizures caused by hypocalcemia should be treated with 10% calcium gluconate. Once metabolic derangements are addressed, treatment of seizures is undertaken with ASMs. it is recommended that neonates undergoing treatment with ASMs , be monitored through cEEG. Treatment of all clinical & electrographic seizures are necessary. Phenobarbital (acting on the GABA receptor) has remained the first-line choice for the treatment of neonatal seizures and is effective in the cessation of seizures in approximately 50% of neonates. The half-life of phenobarbital is 45 and 200 hours. phenobarbital is known to cause respiratory depression, hypotension, and hemodynamic lability and deleterious developmental effects. Fosphenytoin (Sodium channel blocker) is a water-soluble form of phenytoin that is better tolerated, add %15 seizure control , administered safely intravenously and intramuscularly. phenytoin and fosphenytoin should not be used in conjunction with intravenous lidocaine and with dextrose solutions. Levetiracetam (Prevention of neurotransmitter release) has been shown to have minimal adverse side effects in neonates and Blood levels typically need not followed . It is not recommended as first line treatment before phenobarbital. Benzodiazepine infusion (Intravenous midazolam) may also be used to control refractory neonatal seizures. For infants with prolonged clinical and/or electrographic seizures, intravenous Pyridoxine treatment is recommended. Lidocaine, a sodium channel antagonist, has equal efficacy for refractory seizures when compared with midazolam. Bumetanide, a loop diuretic, may have a role as adjunctive therapy with phenobarbital in some circumstances. Other drugs such as Carbamazepine , Lacosamide , Paraldehyde and Ketogenic Diet have been used in controlling neonatal seizures. Weaning of antiepileptic drugs After72 hour of treatment if neurological examination & / EEG is normal , is recommended.

Key words : neonates , clinical and electrical seizures , prompt treatment.

Neonatology

Risk Factors of the severity of COVID-19 infection in Infants

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Abstract: Background: The global COVID-19 crisis has had a profound effect on populations around the world. While it is commonly acknowledged that older individuals face a higher risk of severe illness, the data indicates that in newborns and infants, the disease is not lethal. Objectives: This cross-sectional study sought to determine how lab tests and clinical symptoms contribute to the severity of COVID-19 infection in infants younger than three months. Methods: All infants less than three months with positive PCR tests for COVID-19 admitted to the Children's Medical Center from October 2020 until March 2022 were included in this cross-sectional study. We examined the relationship between disease severity and clinical symptoms and laboratory tests. Results: Sixty-four neonates and infants less than three months with COVID-19 entered our study. The study demonstrated that patients with a higher admission weight had a greater susceptibility to severe disease, specifically up to stage 2b. Underlying conditions also seemed to play a role in disease severity. Laboratory and clinical findings did not show a significant correlation with disease severity, except for ALT and cough symptoms. Conclusion: Clinical examinations, gestational age, and consideration of underlying diseases are more effective in decision-making. Further research is needed to explore the impact of these factors on the severity of COVID-19 in infants.

Neonatology

Seizure types in Neonates

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Abstract: We used the definition of seizure type as suggested by Fisher and colleagues: a useful grouping of seizure characteristics for purposes of communication in clinical care, teaching, and research. The basic principles of the 2017 ILAE classification of seizure types are based on the 1981 classification with the initial division of seizures into those of focal and generalized onset. Newborns have been shown to have seizures with exclusively focal onset, thus the initial division into focal and generalized is unnecessary. Nevertheless, in some rare conditions, seizures may rapidly engage bilaterally distributed networks such as spasms or myoclonic seizures, for example, in inborn errors of metabolism. Even in genetic early infantile developmental and epileptic encephalopathies, tonic seizures are initially focal or asymmetric in the neonatal period and subsequently may become generalized in infancy. The second level in the 2017 ILAE classification is the division into aware and impaired awareness seizures; however, this is not applicable to neonates, as it is not possible to confidently and reproducibly assess awareness and responsiveness in this age group. This is followed by the division into motor and non-motor seizures, and finally by the seizure type . Although seizures in neonates can present with a variety of clinical signs, in the majority of cases a single predominant feature can be determined. Pragmatically, it appears best to classify seizures according to the predominant clinical manifestation, as this is more likely to have clinical implications for etiology than determination of the seizure-onset zone. This may or may not be the first clinical manifestation. For example, a neonate may present with focal tonic posturing, and in addition have some ocular myoclonus—this can still be classified as a tonic seizure. Regardless, as in adults, localization within the brain should be specified when known and appropriate. In some situations, it may be difficult to identify the dominant feature, typically in longer seizures where a sequence of clinical features can be seen, often with changing lateralization. Events with a sequence of signs, symptoms and EEG changes at different times have been described as a sequential seizure in the

Neonatology

The comparison of two doses of lansoprazole in the treatment of neonatal gastroesophageal reflux disease resistant to conservative therapy: A clinical trial

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Abstract: Introduction: Gastro-esophageal reflux disease (GERD), defined as troublesome symptoms or conditions complicating the physiologic gastroesophageal reflux, is one of the most common problems in neonates. Proton pump inhibitors are the most commonly used drugs in these patients. Our study aimed to compare the efficacy of two doses of lansoprazole in treating term neonates diagnosed with GERD to determine the most appropriate dosing of the drug. Methods: This study was a triple-blind, randomized clinical trial of term, otherwise healthy neonates with GERD diagnosis (according to the final version of the I-GERQ-R) admitted to Bahrami Children's Hospital during 2021-2022. GERD was diagnosed based on the final version of the I-GERQ-R. 120 term neonates (mean age 9.68 ± 1.68 days; girls 56.7%) were randomly assigned to either oral 1 mg/kg/d lansoprazole divided into twice daily or oral 1.5 mg/kg/d lansoprazole divided into twice daily. The changes in the symptoms and signs were recorded after one week and one month based on I-GERQ-R criteria. Results: The two groups had no significant difference in demographic and pre-intervention manifestations. The mean total score (10.26±1.68 vs. 7.7±1.64, P=0.000) and scores for vomit volume, times of feeding refusal even when hungry, times of stopping feeding while hungry, crying duration and times of back arching were significantly higher in group A after 1 week. The two groups were comparable after 1 month. The total I-GERQ-R score decreased significantly in each group during the study period. Conclusions: Both doses were effective in the clinical improvement of GERD manifestations. However, 1.5 mg/kg/d lansoprazole resulted in a more rapid improvement of symptoms after 1 week

Neonatology

The management of short bowel syndrome without bowel transplantation in Iran.

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Abstract: In Iran, due to familial marriages, there is a higher prevalence of hereditary diseases, one of which is hereditary intractable secretory diarrhea. Additionally, many infants suffer from short bowel syndrome resulting from multiple intestinal surgeries, leading to severe diarrhea and malabsorption. Our approach involves carefully managing the fluids and electrolytes of these infants.In the absence of bowel transplantation in our country, we stabilize the patients and initiate feeding with breast milk, complete hydrolyzed formulas, or amino acid-based formulas. This is often complemented with diluted normal saline or Oral Rehydration Salts (ORS). Normal saline is particularly suitable for cases where there is malabsorption of carbohydrates and in instances where sodium excretion in the stool is high. To determine the appropriate type of oral rehydration solution, blood and stool tests are essential.The degree of dilution of normal saline is adjusted based on the severity of sodium excretion in the stool and the patient's hyponatremia. We continuously monitor the patients through weight control and regular electrolyte checks. The overall recovery of these patients over time largely depends on the extent of intestinal repair and the severity of their condition.We have successfully treated and discharged many cases using this protocol

Neonatology

vaccination in preterm neonates

mahbod kaveh [1] © ℗

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Abstract: Specific considerations on vaccination in preterm neonates : Although prematurity is associated with immunological immaturity, studies have shown that the uptake and immune response of most of the childhood vaccines are similar between preterm and full-term infants. Hence, vaccination should not be delayed and it should be done as per chronological age of the baby Evidence has shown that commonly used vaccination schedule by several governing bodies is equal effective in vaccine-related adverse effects is similar to their term counterparts. Premature infants with associated comorbid conditions are at higher risk from BPD as compared to their healthier counterparts; hence, vaccination should be started in them as early as possible. The traditional term “painless vaccine” (combination vaccine containing aP component) is a misnomer created by manufacturers. Classically, aP component of DTaP vaccine is often attributed to less , thus, resulting in less irritability of babies which is interpreted as less pain. However, recent data support in favor of continue using whole-cell pertussis-containing vaccines for primary series in developing world due to acceptability, robust, and long-lasting immune response. Pentavalent vaccine (DTwP + HiB + Hep B) is available free of cost in government health-care facilities. Thus, choice of DPT versus DTaP should be individualized after discussing the facts with parents; choice of DTaP should not be merely due to prematurity.As preterm infants have less muscle mass, thin and shorter needle (5/8 inch) should be used. Mild fever alone should not be criteria to delay vaccination if baby is otherwise stable To avoid unnecessary delay and multiple hospital visits, it is advisable to give multiple live vaccines in a single setting unless; there is inadequate space for multiple simultaneous intramuscular vaccinations. There should be at least 4 weeks gap between vaccines for optimal response. providing adequate protection following primary vaccination series. Hence, apart from the routine booster doses as indicated for term infants, no extra doses of any vaccine are needed. Apart from adverse events related to underlying health conditions (apnea, bradycardia, and desaturations) which are more common in extremely preterm infants (1000 g), incidence of classic

Nephrology

APPROACH TO UTI BASED ON GUIDELINES

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Abstract: Urinary tract infections (UTIs) are common healthcare-associated and community-acquired infections in children. Almost all pediatric UTI guidelines (AAP, EAU/ESPU, ISPN) recommend transurethral catheterization and suprapubic aspiration to collect urine from infants and non-toilet-trained children to minimize bacterial contamination of the skin. A clean voided midstream urine sample is the preferred method for UTI diagnosis for toilet-trained children. Threshold for significant bacteriuria in colony-forming units ranges from any number for suprapubic aspiration to ≥100,000 CFU/ml for clean catch urine. Some national guidelines believe that midstream samples should have both a positive urine culture and urinary leukocytes for diagnosis of UTI. The use of bag collections as the sole method to perform a culture is discouraged and contraindicated in all published guidelines. All guidelines recommend kidney and bladder ultrasound as a safe, noninvasive method for screening and diagnosing urinary tract abnormalities for all children with first febrile UTI(except NICE). Regarding the choice for imaging , two approaches, the ‘top-down’ method (DMSA scan and, if positive, VCUG) and the ‘down-top’ method (VCUG and, if positive, DMSA scan), have been described. Recommendations for imaging evaluation vary slightly, but all recommend that children older than 2 years with a first E. coli UTI without ESBL-producing uropathogens and a normal renal ultrasound are less likely to have VUR and are advised not to undergo VCUG. Nowadays, almost all data suggest that ampicillin and trimethoprim-sulfamethoxazole are not recommended empirical agents for pediatric UTIs in the guidelines due to high resistance rates. The choice of antibiotic should be based on resistance patterns of urinary pathogens, and the course of treatment of antibiotics is generally 3–7 days for lower urinary tract infection and 7–14days for upper UTI. Antibiotic prophylaxis is not routinely recommended after the first febrile UTI, excepting high-grade VUR or congenital renal abnormalities but no consensus has been made on the regulation of the dose and course. .

Nephrology

Metabolic Acidosis

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[1] **pediatric nephrologist, tehran uiversity medical siences, chilren medical center,chronoc kidney disease resrch center**

Abstract: Acid-base disorders are disturbances in the homeostasis of hydrogen ion concentration in the plasma. Any process that increases the serum hydrogen ion concentration is an acidotic process. The term acidemia is used to describe serum that is abnormally acidic, and this can be due to a respiratory acidosis, which involves changes in carbon dioxide, or a metabolic acidosis which is influenced by decreased bicarbonate. Metabolic acidosis is characterized by an increase in the hydrogen ion concentration in the systemic circulation resulting in a serum HCO3 less than 24 mEq/L. Metabolic acidosis is not a benign condition and signifies an underlying disorder that needs to be corrected to minimize morbidity and mortality. The many etiologies of metabolic acidosis are classified into 4 main mechanisms: increased production of acid, decreased excretion of acid, acid ingestion, and renal or gastrointestinal (GI) bicarbonate losses. Acidemia refers to a pH less than the normal range of 7.35 to 7.45. classification of metabolic acidosis is based on the presence or absence of an anion gap, or concentration of unmeasured serum anions. Non-gap metabolic acidosis is primarily due to the loss of bicarbonate, and the main causes of this condition are diarrhea and renal tubular acidosis. Additional and rarer etiologies include Addison's disease, ureterosigmoid or pancreatic fistulas, acetazolamide use, and hyperalimentation through TPN initiation. GI and renal losses of bicarbonate can be distinguished via urine anion gap analysis. Anion gap metabolic acidosis is frequently due to anaerobic metabolism and lactic acid accumulation. Mnemonic for anion gap metabolic acidosis differential: CAT MUDPILES: Cyanide and carbon monoxide poisoning, Arsenic, Toluene, Methanol, Metformin, Uremia, DKA, Paraldehyde, Iron, INH, Lactate, Ethylene glycol, Salicylates

Nephrology

Approach to complicated urinary tract infection in children

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Abstract: Background: Urinary tract infection (UTI) is one of the most common bacterial infections in children. Complicated UTIs are UTIs in newborns, urosepsis, a bladder and/or an abdominal mass, congenital anomalies of kidneys and the urinary tract (CAKUT), organisms other than Escherichia coli, atypical clinical course, renal abscess and absence of clinical response to an antibiotic within 72 hours. simple UTIs can be managed with outpatient antibiotics, leading to almost universally good outcomes. However, complicated UTIs may lead to florid urosepsis, which can be fatal. complicated UTIs present with more significant morbidity, carry a higher risk of treatment failure, and typically require longer antibiotic courses and frequently requiring additional workup. Diagnosis: Fever with no apparent source is the most common presentation of UTI during the first 2 years of life. A focused history and physical examination with positive urinary findings are essential for a definitive diagnosis of UTI. Any UTI that fails to resolve with first-line therapy or occurs in a high-risk patient population should be considered as complicated UTI.A good quality urine specimen is vital in making the diagnosis. However, treatment must not be delayed if the clinical scenario strongly suggests a UTI. blood culture and other inflammatory markers in blood should be obtained. All the affected patients should undergo a renal tract ultrasound at a minimum to evaluate for anatomical abnormalities. Treatment: Antibiotic choices should always be made according to local bacterial resistance patterns and guidelines. Broad-spectrum, empiric antibiotics should always be switched to a targeted narrow-spectrum antibiotic once culture results are available. Patients who present with repeat infections may also be initially treated as per their previous urine culture results until new cultures are available. Treatment response should be evident in 24 to 48 hours in most cases. Antibiotic therapy in complicated UTIs is typically 10 to 14 days. Key words: urinary tract infection ,complicated UTI, pyelonephritis

Nephrology

Approach to hypokalemia in children

Banafshe Dormanesh [1] © ℗

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Abstract: Potassium is the predominant ICF cation, essential for all living cell's function, and most of it is in the muscles (70%) and remaining is in liver, RBC and bone. Serum K+ is dependent on its intake, excretion (renal, extrarenal) and transcellular distribution. In children unlike adults, positive K+ balance is needed for metabolism and growth. Hypokalemia (K+ 3.5 mEq/l) is a common electrolyte disorder in children, especially in Gastroenteritis. In the diagnostic and therapeutic encounter with a hypokalemic patient, the first task is being ensure that it is a real hypokalemia. Pseudo hypokalemia (spurious) occurs in myelogenous leukemia, when blood sample is stored in room temperature, which can sponge up of ECF potassium, Hypokalemia is classified to mild (3 – 3.5 mEq/l), moderate (2.5 – 3 mEq/l) and severe (2.5 mEq/l) Clinical manifestations include weakness, cramps in skeletal muscles, which is usually starts from legs and spread to arms and respiratory paralysis in severe cases. The most dangerous complication is heart muscle involvement, which manifests itself as ECG changes include flattened T wave, depressed ST segment, and the appearance of a U wave and is detected with severe hypokalemia. Other complications are rhabdomyolysis, urinary retention or polyuria and polydipsia, ileus and interstitial nephritis and renal cysts in chronic hypokalemia. Most causes of hypokalemia are readily apparent from the history. It is important to take a complete history of the child's diet, GI losses, and medications and child's blood pressure should be taken. 24 hr. urine K+, spot K+: creatinine ratio, fractional excretion of K+, or transtubular K+ gradient (TTKG), can distinguish renal from extrarenal K+ losses. TTKG 4 or urinary K+ 15 mEq/l reveals renal losses. Choose the treatment method based on the K+ level, clinical symptoms, renal function, ongoing losses, and the patient's ability to tolerate oral K+. Oral supplement can start with 1-2 mEq/kg/day, with a maximum of 60 mEq/day, but in urgent severe situations IV potassium dose is 0.5-1.0 mEq/kg, given over 1 hr. with a maximum dose of 40 mEq. In adults, and only in normal saline.

Nephrology

End stage renal disease due to primary hyperoxaluria in a 7months year old infant;a case report

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Abstract: Primary hyperoxaluria (PH) is a rare genetic metabolic disease presented severely in infants with end-stage renal disease (ESRD). Promoting diagnosis with aggressive management is essential in these patients. Here we presented a rare case of primary hyperoxaluria type 1 (PH1) in a seven□month infant girl who underwent dialysis with prospective kidney transplantation in the future

Nephrology

Evaluation of 25 hydroxy vitamin d deficiency in Iranian children with chronic kidney disease

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Abstract: Background: chronic kidney disease (CKD) causes alteration in mineral metabolism inducing the development of secondary hyperparathyroidism and renal osteodystrophy. Children with CKD are at higher risk for vitamin D deficiency and in patients with renal insufficiency low levels of 25-OH vitamin D are at the highest risk of developing renal osteodystrophy. Vitamin D has also a preventive effect on cardiovascular disease, hypertension, infections and cancers and its effect is done by local production of 1,25(OH)2 vitamin D3 via extra renal 1a hydroxylase. It may be important to maintain the normal blood concentration of 25(OH)D to provide fuel for the renal and extra renal production of 1,25(OH)D2 and for possible direct action of 25(OH)D on the nuclear vitamin D receptor. The widespread local production of 1,25(OH)D2 in cells and the possible direct action of 25(OH) D strongly support the idea of measuring serum 25(OH)D and providing adequate supplementation even in ESRD. Methods: A cross-sectional prospective study has done on children with all stages of CKD in Children's Medical Center from 2009-2010. Patient with chronic liver disease, intestinal malabsorption, active nephrotic syndrome and receiving vitamin D supplement more than RDA were not counted in the study. Blood sample were tested for 25-OH vitamin D3. Results: 75 patients(37 girls) were enrolled in the study. Mean age was 8.01+-4.5 years(1.1-16 years). In 68 of 75(90.6%) patients 25(OH)D level was below normal. Mean serum 25(OH)D was 17ng/ml(0.5-92 ng/ml). mean serum 25(OH)D in stages 4 to 5 CKD was significantly lower than stages 1 to 3(14.8 vs 19.4 ng/ml; p value= 0.08). no significant difference in PTH level between different stages of CKD found. conclusion: according to the results of the study 90.6% of the children with CKD had low 25(OH)D level and measuring serum 25(OH)D levels in all stages of CKD especially in dialysis patients was recommended.

Nephrology

hyponatremia in children

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Abstract: Hyponatremia-Abstract Hyponatremia is defined as a serum or plasma sodium less than 135 mEq/L and is among the most common electrolyte abnormalities in children. It is often detected incidentally, especially in asymptomatic cases of mild or moderate hyponatremia (serum sodium between 125 and 134 mEq/L). Evaluation – The goal of diagnostic evaluation of hyponatremia is to determine the underlying etiology, which is often evident from the initial clinical assessment: ● Most cases of hyponatremia in children are related to gastrointestinal fluid loss that was replaced with hypotonic fluids. Other children have physical findings of edema and/or ascites, which may be associated with depleted effective circulating volume, and can be seen in children with heart failure, cirrhosis, or nephrotic syndrome. • Initial laboratory testing may detect kidney dysfunction noted by elevated blood urea nitrogen (BUN), creatinine, or serum potassium; hyperglycemia; or evidence of antidiuretic hormone (ADH) stimulation based on an inappropriately high specific gravity . Principles of management – The goals of pediatric hyponatremia treatment consists of relief of symptoms caused by hyponatremia, avoidance of too rapid correction that may mediate central nervous complications, and prevention of further decline in sodium concentration Management decisions regarding intervention are based on the duration of hyponatremia, the severity of hyponatremia, and if the underlying cause can be treated in a timely manner. Treatment options include administration of sodium chloride, fluid restriction, and treatment of the underlying etiology Symptomatic hyponatremia –Initial therapy is with intravenous administration of 3 to 5 mL/kg of hypertonic (3 percent) saline, repeated if needed, as guided by laboratory monitoring of serum sodium. The targeted rate of serum sodium correction depends on whether the condition is acute or chronic. Asymptomatic patients – Hypertonic saline is not used for asymptomatic patients or those with chronic hyponatremia with mild to moderate symptoms. Treatment is guided toward correcting the underlying etiology and monitoring serum sodium levels to ensure that there is no further drop in the sodium concentration. Sodium supplementation can be provided, with a targeted rate of correction not to exceed 6 to 8 mEq/kg over 24 hours.

Nephrology

Metabolic alkalosis

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Abstract: Normal human physiological pH is 7.35 to 7.45. A decrease in pH below this range is acidosis, an increase over this range is alkalosis. Metabolic alkalosis is defined as a disease state where the body's pH is elevated to greater than 7.45 secondary to some metabolic process. Before going into details about pathology and this disease process, some background information about the physiological pH buffering process is important. The primary pH buffer system in the human body is the bicarbonate (HCO3)/carbon dioxide (CO2) chemical equilibrium system. Where: H + HCO3 -- H2CO3 -- CO2 + H2O HCO3 functions as an alkalotic substance. CO2 functions as an acidic substance. Therefore, increases in HCO3 or decreases in CO2 will make blood more alkalotic. The opposite is also true where decreases in HCO3 or an increase in CO2 will make blood more acidic. CO2 levels are physiologically regulated by the pulmonary system through respiration, whereas the HCO3 levels are regulated through the renal system with reabsorption rates. Therefore, metabolic alkalosis is an increase in serum HCO3 Metabolic alkalosis usually results from severe vomiting or a potassium or chloride deficiency. Dietary changes or intravenous fluids can help these cases. But it may also indicate organ failure and require more significant treatment. Metabolic alkalosis is a condition that occurs when your blood becomes overly alkaline. Alkaline is the opposite of acidic. Our bodies function best when the acidic-alkaline balance of our blood is just slightly tilted toward the alkaline. Alkalosis occurs when your body has either: too many alkali-producing bicarbonate ions too few acid-producing hydrogen ions Many people don't experience any symptoms of metabolic alkalosis, so you may not know that you have it. Metabolic alkalosis is one of the four main types of alkalosis. There are two kinds of metabolic alkalosis: Chloride-responsive alkalosis results from loss of hydrogen ions, usually by vomiting or dehydration. Chloride-resistant alkalosis results when your body retains too many bicarbonate (alkaline) ions, or when there's a shift of hydrogen ions from your blood to your cells. our body compensates for both alkalosis and acidosis mainly through your lungs and kidneys

Nephrology

Schimke immuno-osseous dysplasia in a boy with generalized edema; a case report

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Abstract: Schimke immuno-osseous dysplasia (SIOD) is a rare disease diagnosed by skeletal malformations, steroid-resistant nephrotic syndrome (SRNs), and T-cell immunodeficiency. Proteinuria with focal segmental glomerulosclerosis (FSGS) is the most common renal pathologic finding in SIOD. In this case report, we present an 8-year-old boy with generalized edema, kyphosis, and nephrotic syndrome who was eventually diagnosed with SIOD

Nephrology

Urinary Tract Infection In Children, An Overview

Sayed Yousef Mojtahedi [1] © ℗, Paniz Pourpashang [1], Zahra Noeparast [1], Azadeh Afshin [1]

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Abstract: Urinary tract infection in children is common (about 7.8%) and should be in mind besides the diagnosis of every febrile infant. It is classified classically into upper (acute pyelonephritis) and lower (acute cystitis). Acute pyelonephritis is usually distinguished by fever but sometimes fever can be mild and be neglected. Acute pyelonephritis(APN) may lead to some serious consequences such as : renal scaring, hypertension an End Stage Rena Disease. Some risk factors should be considered in practice such as female gender, uncircumcised male, constipation,tight underwear,poor hygiene,bubbling, urinary tract malformation, and labial adhesion. Diagnosis is made with a urine culture. The most common microorganisms are gram-negative bacterias especially Ecoli. Treatment: It is possible to treat APN outpatiently for 7-10 days, but if the patient is ill and lab data shows critical results or the patient can not tolerate feeding, it is better to admit him and start treatment impatiently. For empiric therapy usually, the third generation of cephalosporins and Aminoglicusides are preferred. Parenteral antibiotic therapy is continued till 24 hours after fever cessation. Keywords: UTI, Acute pyelonephritis, cystitis, REFERENCES: 1. Shaikh N, Morone NE, Bost JE, Farrell MH. Prevalence of urinary tract infection in childhood: a meta-analysis.Pediatr Infect Dis J 2008; 27:302.. 2. Shim YH, Lee JW, Lee SJ. The risk factors of recurrent urinary tract infection in infants with normal urinary systems. Pediatr Nephrol 2009; 24:309.

Nephrology

Vesicoureteral reflux in children

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Abstract: Vesicoureteral reflux (VUR) is defined as retrograde regurgitation of urine from the urinary bladder up the ureter and into the collecting system of the kidneys. It is divided into two categories: primary and secondary based on the underlying pathogenesis. Primary VUR develops as a result of an impaired or immature preventive mechanism against reflux due to anatomical or functional congenital abnormalities. Secondary VUR is that due to a defect of this preventive mechanism from organic obstruction and/or neurological dysfunction (posterior urethral valve, neurogenic bladder , …) in the lower urinary tract. VUR affects 1% to 2% of all children, and up to one-third of children with VUR will experience urinary tract infection (UTI). The incidence of VUR in children with febrile UTIs is estimated to be 30-40% The diagnosis of VUR is established with voiding cystourethrogram (VCUG) demonstrating reflux of urine from the bladder to the upper urinary tract. Alternative imaging modalities that are uncommonly used to diagnose VUR include contrast-enhanced voiding urosonography (ceVUS) or radionuclide cystogram (RNC). 99mTc-DMSA renal scintigraphy is a standard imaging test used for diagnosis of renal parenchymal damage, and is suited for assessment of split renal function and renal scarring in patients with VUR. Clinical management of vesicoureteral reflux (VUR) is complex and should be individualized. The main concern in patients with VUR is the occurrence of febrile UTI , which may lead to renal scarring, hypertension, and renal insufficiency. Therapeutic choices to manage VUR include watchful waiting , antibiotic prophylaxis, and surgical correction. In addition, it is important to identify and treat older, toilet-trained children with bladder and bowel dysfunction (BBD) because they are at risk for recurrent UTI, pyelonephritis, and worsening of VUR and are less likely to have spontaneous VUR resolution. Surgical treatment of VUR consists of endoscopic injection of bulking agents or ureteral re-implantation and is recommended for Patients with progression of renal scarring while on antibiotic prophylaxis, patients with progression of VUR grade, patients with frequent relapsing pyelonephritis, particularly those who have breakthrough UTI or renal scarring and for the non-compliant patient.

Pulmonology

Approach to noisy breathing

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Abstract: Noisy breathing in children is a common presentation which indicates partial airway obstruction. This obstruction can occur at different levels from the nostrils to the bronchioles. Stridor, a high-pitched sound, which is commonly associated with upper airway obstruction and is mainly heard during inspiration. In severe cases, stridor can be heard during both inspiration and expiration. When the airway obstruction is compromised, signs of respiratory distress will be often present. Noisy breathing in children is a common clinical sign. Parents often present to health care professionals with concerns about the pattern and nature of their child's breathing Evaluation begins with careful assessment of the child and video or audio recordings are particularly helpful. The characteristic findings will depend on the affected level of the airway. The most common cause of noisy breathing in an infant is laryngomalacia, although there are several other differential diagnoses for stridor to be considered. Visualization of the airway by either a rigid or a flexible bronchoscope, is the gold standard procedure for identifying any pathology. Red flags include severe respiratory distress, recurrent stridor in early months, feeding difficulties and/or failure to gain weight in neonates and infants. Older children can present with chronic wet cough or wheeze. In this age group trials of treatment and careful documentation of the responses can be helpful in clarifying the diagnosis.

Pulmonology

Empiema in children

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Abstract: Parapneumonic effusion is defined as pleural effusion associated with lung infection (ie, pneumonia). These effusions result from the spread of inflammation and infection to the pleura. Much less commonly, infections in other areas adjacent to the pleura, such as the retropharyngeal, vertebral, abdominal, and retroperitoneal spaces, may spread to the pleura, resulting in the development of effusion. Early in the course of parapneumonic effusion, the pleura becomes inflamed; subsequent leakage of proteins, fluid, and leukocytes into the pleural space forms the effusion. At the time of formation, the pleural effusion is usually sterile with a low leukocyte count. With time, bacteria invade the fluid, resulting in empyema, which is defined as the presence of grossly purulent fluid in the pleural cavity. The development of pleural empyema is determined by a balance between host resistance, bacterial virulence, and timing of presentation for medical treatment

Pulmonology

FOREIGN BODY IN CHILDREN

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Abstract: Foreign body aspiration is one of the most important disease in under 3 years old children.it is more common in boys and can lead to morbidity and mortality.prevention is very important.nuts must be avoided before 3 y/o. if it accur nither normal auscultation nor normal CXR can not rule out the diagnosis.history pf choking and physical exam is diagnostic. only bronchoscopy can realize foreign body asoiration and rigid & flexible type were used. chest x-ray must done after bronchoscopy due to possible pneumothorax.

Pulmonology

Management of upper respiratory tract infections in children

masoumeh ghasempour alamdarii [1] © ℗

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Abstract: Upper respiratory tract infection (URTI) occurs commonly in both children and adults and is a major cause of mild morbidity. It has a high cost to society, being responsible for absenteeism from school and work and unnecessary medical care, and is occasionally associated with serious sequelae. URTIs are usually caused by several families of virus; these are the rhinovirus, coronavirus, parainfluenza, respiratory syncytial virus (RSV), adenovirus, human metapneumovirus, influenza, enterovirus and the recently discovered bocavirus. Bacterial complications such as otitis media and acute sinusitis and inflammatory sequelae such as asthma, however, are well described. The main emphasis of management is symptom relief of fever, nasal congestion and coughing. A variety of adrenergic agonist, anticholinergic, antihistamine preparations, antitussives and expectorants are marketed for these purposes. Common constituents of such medication include first generation antihistamines, antipyretics (paracetamol) or anti-inflammatory agents (ibuprofen), cough suppressants such as dextromethorphan, expectorants (guaifenesin) and decongestants such as pseudoephedrine and phenylpropanolamine. Although they provide symptom relief, there is no conclusive evidence that they shorten the duration of symptoms.Recently, the Food and Drug Administration issued an advisory statement warning against using over the counter medications for URTIs in children under two years of ageSince there is no proven benefit over placebo of these medications in children of any age, and the risks of side effects in children are great, practitioners should be cautious in recommending or prescribing such therapies. Antibiotics are overprescribed for URTIs and promote antibiotic resistance.However, there is a role for defined indications, such as severe acute rhinosinusitis lasting more than ten days and severe acute otitis media. . Herbal remedies have been studied and conflicting results found. Two of the most commonly used and studied herbs are Echinacea and Andrographis paniculata, both of which are believed to be immunostimulants. Saline nasal spray may be beneficial. For example, in a study of Swedish military recruits, daily spraying with physiological saline significantly reduced the incidence of the common cold and nasal symptoms. Honey is superior to both dextromethorphan and no treatment for night-time coughing associated with URTIs.

Pulmonology

Primary siliary dyskinesia

Fatemeh Tarighat Mofrad[1] © Ⓟ

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Abstract: Primary Siliary Dyskinesia Definition: Primary ciliary dyskinesia (PCD) is an inherited disorder characterized by impaired motile ciliary function, leading to diverse clinical manifestations, including chronic upper and lower respiratory tract disease, laterality defects, and subfertility. Clinical manifestations: Respiratory symptoms typically occur daily and begin soon after birth.Neonatal respiratory distress is a common feature, and increasing work of breathing, tachypnea, and upper and middle lobe atelectasis on chest radiographs. Infants with PCD frequently require supplemental oxygen or assisted ventilation for days or even weeks.. Non-typeable Haemophilus influenzae is the most common airway pathogen in PCD until early adulthood. Other isolates include Moraxella catarrhalis , Staphylococcus aureus , and Streptococcus pneumoniae.Pseudomonas aeruginosa, Nontuberculous mycobacteria, Mycobacterium avium complex and Mycobacterium abscessus . Chest radiographic findings in children with PCD, including lung hyperinflation, bronchial wall thickening, segmental atelectasis or consolidation, laterality defects, and bronchiectasis. There is a predominance of middle and lower lobe bronchiectasis, mucus plugging, and atelectasis . Diagnosis: The diagnosis of PCD requires clinical phenotypic features in conjunction with testing: nasal NO measurement, genetic testing, ciliary ultrastructure using electron microscopy, and more recently protein localization using immunofluorescent staining. Historically, transmission electron microscopy to define ultrastructural ciliary defects was considered the “gold” standard diagnostic test. Nasal NO measurement has been adopted as a screening or supporting diagnostic tool. Digital imaging of ciliary motion in multiple planes has permitted comprehensive analysis of abnormal beat. Management: Management should include measures to enhance the clearance of mucus, prevent respiratory infections, and treat bacterial superinfections to reduce or prevent disease progression. prophylaxis, microbiological surveillance, and other infection control measures. Some people with PCD benefit from extended use of a broad-spectrum antibiotic, such as azithromycin. Nebulized hypertonic saline has become the most common agent used in PCD. bronchodilators should be used as pretreatment in patients using nebulized hypertonic saline to avoid bronchospasm. Saline irrigations are recommended for the management of chronic rhinosinusitis Some have advocated use of topical corticosteroids and antibiotics, guided by surveillance sinonasal and sputum cultures. Tympanostomy with ventilation tube placement has been used to control chronic serous otitis media that persists despite antibiotic therapy.

Pulmonology

pschogenic cough

Seyed Hossein Mirlohi [1] © ℗

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Abstract: psychogenic cough: The recently published American College of Chest Physicians cough guidelines recommended replacing the term psychogenic cough with the term somatic cough syndrome in order to be consistent with the Diagnostic Statistical Manual of Mental Disorders, 5th edition (DSM-5) where the term psychogenic is no longer used In the early literature, chronic cough was considered to be psychogenic if it persisted despite medical treatment, demonstrated characteristics such as a honking or barking quality, was absent during sleep, or was associated with psychiatric illness. There are limited criteria for the diagnosis of psychogenic cough For example, barking honking cough is thought to be a characteristic feature of psychogenic cough, however, only 8 out of the 18 studies in the systematic review reported this particular cough characteristic Barking cough has also been reported in medical conditions such as tracheomalacia and bronchiectasis Psychogenic cough is often reported to be absent at night yet cough due to organic disease, such as bronchitis and gastroesophageal reflux disease, can be absent or reduced at night Only 4 out of 18 studies reported comorbid psychiatric disorders and only three of these included a formal psychiatric diagnosis In children with chronic cough diagnosed with somatic cough syndrome (previously referred to as psychogenic cough), we suggest non-pharmacological trials of hypnosis or suggestion therapy or combinations of reassurance, counseling, or referral to a psychologist and/or psychiatrist The ACCP guidelines recommended that the diagnosis of somatic cough syndrome (psychogenic cough) can only be made after extensive evaluation has been performed, uncommon causes of cough are excluded, and the patient meets the DSM-5 criteria for a somatic symptom disorder. These DSM-5 criteria include one or more somatic symptoms that are distressing or result in significant disruption to daily life. There may be disproportionate and persistent thoughts about the seriousness of the symptoms, high levels of anxiety about symptoms or excessive time and energy devoted to the symptoms

Neurology and Psychology and Physical Medicine and Rehabilitation

A comparative study on prophylactic efficacy of cinnarizine and amitriptyline in childhood migraine: a randomized double-blind clinical trial

Sareh Hosseinpour [1] ℗, Mahmoud Reza Ashraf [1] ©, Original Article A Comparative Study On Prophylactic Efficacy Of Cinnarizine And Amitriptyline In Childhood Migraine: A Randomized Double-blind Clinical Trial Mehrnaz Olfat [2], Morteza Heidari [1], Ali Reza Tavaso [1]

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Abstract: Background: Pediatric migraine prophylaxis is indicated when headaches are frequent and/or disabling. We aimed to conduct a study to compare the efficacy of cinnarizine and amitriptyline in pediatric migraine prophylaxis. Methods: In a randomized, double-blind trial, patients aged 4–17 years with migraine who were eligible for prophylaxis enrolled. The primary outcome was a reduction response rate of □50% with p 0.005 with respect to headache characteristics. The secondary outcome was migraine disability assessment. We evaluated patients every four weeks for three months: T1: week 4, T2: week 8 and T3: week 12. The safety profile was also assessed. Results: Thirty patients were randomly assigned to each group. However, 43 patients completed the trial. Headache frequency decreased in amitriptyline group more effectively in T1 (p ¼ 0.004). Amitriptyline was more successful in reducing the headache duration in all three periods (p 0.005). There was no significant difference in severity improve- ment and reducing disability score between the two groups (p 0.005). No serious adverse events were observed. Conclusions: Both medications are effective in ameliorating migraine headaches and related disabilities. However, amitriptyline appears be a preferable option over cinnarizine, given its faster onset of action, efficacy in reducing headache duration and longer-lasting effects.

Neurology and Psychology and Physical Medicine and Rehabilitation

Approach to macrocrania and megalencephaly F.Ahmadabadi MD

Farzad Ahmadabadi [1] © ℗

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Abstract: Approach to macrocrania and megalencephaly F.Ahmadabadi MD Pediatric Neurologist Mofid Childrens hospital,SBMU,Tehran,Iran Macrocephaly is a relatively common clinical condition affecting up to 5% of the pediatric population . Macrocephaly may be a sign of serious acquired conditions such as progressive hydrocephalus, vascular anomalies, or intracranial masses that may necessitate urgent intervention. Macrocephaly (or macrocrania) is clinically defined as an abnormally large head with an occipitofrontal circumference (OFC) 2 standard deviations (SD) above the mean or greater than the 97th centile for a given age and sex . Children with an OFC exceeding 3 SD typically present with neurogenetic disorders characterized by intellectual disability (ID), autism spectrum disorders (ASD), and frequent comorbidities . We will discuss about macrocephaly and clinical approach to its causes and whatever must to do. We classified the macrocephaly in 3 following classes 1)Idiopathic (Benign) with normal neurologic development and normalized till 18m 2)Metabolic disorders as Organic academia , Storage disorders and Leukodystrophy 3)Anatomic that classified two subtypes (With dwarfism , With Gigantism) or syndromic

Neurology and Psychology and Physical Medicine and Rehabilitation

Bickerstaff Encephalitis in a 7-years-old boy: A case report and literature review

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Abstract: Background: Bickerstaff Encephalitis (BE) is a rare neurological disorder marked by the rapid onset of brainstem encephalitis, often accompanied by ophthalmoplegia, ataxia, and altered consciousness. Diagnostic methods such as MRI, CSF analysis, and EMG are used to confirm BE and differentiate it from other conditions like Miller Fisher Syndrome, Guillain-Barré Syndrome, and brainstem strokes. Case Presentation: A 7-year-old boy presented with a 5-day history of cough and fever. Three days prior to admission, he became lethargic and pale while at school. On the morning of hospitalization, he experienced paralysis in both lower limbs, slurred speech, and drooling. Shortly after, both of his eyes suddenly turned inward. Twelve hours before being admitted, his level of consciousness deteriorated significantly, and he arrived at the hospital with a GCS score of 8. Upon examination, he was unconscious with lateral gaze deviation. His pupils were normal in size but unresponsive to light, and there was no corneal-eyelid reflex. DTR could not be assessed. MRI of the brain revealed an abnormal signal in the posterior aspect of the pons, particularly on the left side, without diffusion restriction or enhancement. Initially diagnosed with autoimmune encephalitis, he was treated with methylprednisolone pulse and IVIG. The patient was discharged in good condition, with full resolution of symptoms. A follow-up MRI six months later showed no complications in the pons or brainstem. Conclusion: Bickerstaff Encephalitis is a rare but serious condition that necessitates prompt diagnosis and treatment. Its similarity to other neurological disorders underscores the need for thorough clinical evaluation and specific antibody testing to guide effective treatment.

Key Words: Bickerstaff Encephalitis – Pediatric - Brainstem

Neurology and Psychology and Physical Medicine and Rehabilitation

Classification and Clinical Manifestations of Migraine

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Abstract: Abstract Migraine is one of the most common primary headache syndromes in children and adolescents which has a strong genetic basis. the heritability of migraine in twins has been estimated as 42%. The headaches may be moderate to severe in intensity, be focal in location, have a throbbing quality, and be associated with nausea, vomiting, light sensitivity, and/or sound sensitivity. Compared with migraine in adults, migraine in children and adolescents may be shorter in duration and has a bilateral, often bifrontal, location. Also, the gastrointestinal symptoms such as nausea and vomiting are common in young children. As an important point, occipital headache is unusual for migraine in childhood. Fatigue and mood changes are the most common prodromal symptoms before headache onset. Migraine disease classifies into two main groups; Migraine without aura and Migraine with aura. There are some uncommon forms of migraine syndromes in children and adolescents such as Hemiplegic migraine, Retinal migraine and chronic migraine.

Neurology and Psychology and Physical Medicine and Rehabilitation

Clinical Correlation of Ataxia Telangiectasia-Like Disorder 1 with A Variant of Uncertain Significance in the MRE11 Gene: A Case Report

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Abstract: Ataxia telangiectasia-like disorder (ATLD) is a rare autosomal recessive disorder caused by mutations in the MRE11 gene. The diagnosis of patients with Ataxia telangiectasia-like disorder and Ataxia telangiectasia may be challenging due to similar clinical manifestations. In the present study, we describe a 2-year-6-month-old boy with ataxia, tonic seizure, speech delay, and homozygous variant of uncertain significance (VUS) in the MRE11 gene that was correlated clinically with ATLD. We performed a brain MRI scan to find the cause of the patient's ataxia. After ventriculoperitoneal shunting due to obstructive hydrocephalus, there was no clinical change; so, we carried out whole exome sequencing. The WES and in silico analysis identified a homozygous variant of uncertain significance in the MRE11. This case report highlights that genetic testing can be useful for the precise diagnosis when clinical manifestations are not associated with MRI. Furthermore, based on clinical features, we could categorize a variant in the MRE11 gene from VUS to likely pathogenic.

Neurology and Psychology and Physical Medicine and Rehabilitation

Congenital Myasthenic Syndrome : management and treatment

Narjes Raja Beheshti [1] © ℗

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Abstract: Congenital myasthenic syndromes (CMS) have been defined as a group of rare congenital diseases, which is well known as neuromuscular junction (NMJ) disease. The most common primary symptom is hypotonia with a weak cry, poor suck, and symmetric eyelid ptosis. They may also have stridor, choking spells, respiratory insufficiency, or apneic episodes and can be combined with the abnormal results of electromyographic investigations (EMG). CMS has more than 30 differential types according to synthesized mutated proteins classification. Current therapies for CMS include cholinergic agonists, namely pyridostigmine and 3,4-DAP, long-lived open-channel blockers of the acetylcholine receptor ion channel such as fluoxetine and quinidine, and adrenergic agonists such as salbutamol and ephedrine but a specific diagnosis is essential for the treatment of these patients.

Neurology and Psychology and Physical Medicine and Rehabilitation

Congenital myasthenic syndromes

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Abstract: Congenital myasthenic syndromes (CMSs) are a genotypically and phenotypically heterogeneous group of neuromuscular disorder, which results in muscle weakness, which worsens with physical activity. CMSs are usually identified at birth or early childhood and are lifelong conditions. There are several types of congenital myasthenia that are caused by specific gene mutations. Currently, mutations in 32 genes are made responsible for autosomal dominant or autosomal recessive CMSs. These mutations concern presynaptic, synaptic, post-synaptic, and glycosilation proteins. Since the field of CMSs is steadily expanding, the present lecture aimed at summarizing and discussing current knowledge and recent advances concerning the etiology, clinical presentation, diagnosis, and treatment of CMSs.

Neurology and Psychology and Physical Medicine and Rehabilitation

Follow-up of 25 patients with treatable ataxia: A comprehensive case series study

Elham Pourbakhtyaran [1] ℗, Mahmoud Reza Ashraf [1], Morteza Heidari [1] ©, Mohammad Rohani [2], Bita Shalbafan [3], Ali Reza TavasoliAli Reza TavasoliAli Reza TavasoliAli Reza Tavasoli [4]

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Abstract: Background: Autosomal recessive cerebellar ataxias are a group of heterogeneous early-onset progressive disorders that some of them are treatable. Here, we present clinical presentation, genetic findings, treatment, and outcome of 25 patients with treatable autosomal recessive ataxias recruited from our Neurometabolic registry system and an early-onset cerebellar ataxia study from 2017. Methods and materials: Patients with the diagnosis of progressive cerebellar ataxia had been referred to the ataxia clinic of Children's Medical Center, Tehran, Iran were registered. After detailed neurological exams and family history, a diagnostic approach to progressive ataxia was done and genetic analysis was performed for confirmation of diagnosis. Then, patients who had treatable ataxia with genetic confirmation entered our study. We administered the drug of choice depending on the type of ataxia and followed the patients regularly. We recorded related data including age, sex, the onset of ataxia, additional features, age of definite diagnosis, genetic testing results, type of treatment, and outcome. Result: During 4 years period of study 135 patients of early-onset ataxia were registered that 25 of them were treatable autosomal recessive cerebellar ataxia. We followed these 25 patients that consisted of Friedrich's ataxia, Ataxia with vitamin E deficiency (AVED), coenzyme Q10 (CoQ10) deficiency, Niemann-Pick Type C (NPC) disease, and Cerebrotendinous xanthomatosis (CTX). Conclusion: According to our study, patients would benefit from early detection of treatable ataxia, therefore, the diagnostic approach should be more focused on these types of ataxia to achieve better treatment outcomes and decrease the burden of these diseases. Besides, like any chronic disease, close observation, and follow-up is important for this goal. Keywords: ataxia, treatable, children

Neurology and Psychology and Physical Medicine and Rehabilitation

Genotype, phenotype correlation in muscular dystrophies

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Abstract: Muscular dystrophies (MD) are a group of heterogeneous inherited myogenic disorders that are characterized by, specific clinical and paraclinical findings and dystrophic pattern in muscle biopsy or definite proof with genetic assessment. Although significant improvements in Many aspects of underlying genetic mechanisms of muscular dystrophies has occurred, many uncertainties remain. There is a complex interaction between genotype and phenotypes in this disease. In this regard, the purpose of the present study is to evaluate the Genotype and phenotype correlation in patients with muscular dystrophy that referred to Mofid children's hospital. Research method: The current research was a cross-sectional analytical study that included all children with MD referred to Mofid children's hospital in the period of April 1400 to the end of March 1402 All demographic, clinical, laboratory and genetic information of patients in special information forms Was enrolled and finally analyzed. Research findings: During the study period, 100 patients with an average age of 9.5 years were included in the study. 87 percent of patients were male. MD phenotype was finally diagnosed in 96 patients. In 4 patients, the results of muscle biopsy were in favor to MD and genetic testing was requested for the final diagnosis. Based on the final diagnosis In 76 patients (79.2%) DMD, 12 patients (12.5%) LGMD, 4 patients (4.2%) EDMD, 3 patients (3.1%) FSHD and in one patient (1%) BMD were diagnosed. Average age of onset of symptoms in patients was 5.12 years and 39.6% of patients had related parents. Developmental delay in 45.8% of patients was reported. Gower sign was reported in 56 patients (58.3%) of all patients, most of them (49 of 56 patients, 87.5%) had DMD (P=0.009). Also, in 81.3% of patient's calf Muscle hypertrophy was reported that be significantly higher in patients with DMD than other phenotypes (p=0.008). There was not a statistically significant relationship between heart and lung complications in patients with different disease phenotypes. a statistically significant relationship between facial involvement and disease phenotype was reported (P0.001). In total, genetic assessments of 68 patients were evaluated, and 69 different mutations were reported. (one patient had two

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Abstract: Myasthenia gravis (MG), a neuromuscular disease characterized by weakness and fatigue, typically classified into 3 category : Autoimmune (generalized, ocular) , transient neonatal and congenital myasthenia .. Hallmark feature of MG is fatigue ad symptoms fluctuation.. 85-90% of patients with generalized MG are positive for AChR antibodies, and an additional 5-10% are positive for MuSK antibodies and 10-15% of patients with generalized MG are seronegative that do not have detectable antibodies against AChR or MuSK using standard testing. Patients with AChR antibodies typically have more generalized muscle weakness and are at higher risk for myasthenic crises. . Common symptoms of myasthenia gravis include: ptosis, diplopia, difficulty making facial expressions problems chewing and difficulty swallowing, slurred speech, muscle weakness and occasionally breathing difficulties . symptoms can be worsen by fatigue, infection, surgery, stress and some medications. When MG starts before a child reaches puberty, Transient neonatal myasthenia gravis occur in 10–20% of infants born to mothers with the disease however , these symptoms usually disappear within a few weeks or months Diagnosis is based on clinical history, including the presence of fluctuating muscle weakness, especially in the ocular muscles. Antibody Testing , Electrophysiological Studies and Edrophonium test, aid diagnosis. Mestinon (pyridostigmine)is the first-line of treatment for juvenile MG and may be sufficient in patients with purely ocular disease symptoms or mild generalized disease. Other medications like corticosteroids and immunosuppressive agents also have been used in children with refractory disease, Steroid-Sparing Agents (e.g., Azathioprine,) are often used alongside corticosteroids to reduce the need for long-term steroid use. Eculizumab is recommended for the treatment of patients with generalized MG who have acetylcholine receptor antibodies. and in individuals with hard-to-treat generalized MG who failed to respond to other therapies . Plasmapheresis and intravenous immunoglobulin (IVIg) also may be used, particularly in the context of severe disease flare-ups or myasthenic crises. Thymectomy is usually not recommended for treating children who develop MG before reaching puberty. However, surgery may be beneficial for those with seropositive (AChR-positive patients) generalized MG who fail to respond to cholinesterase inhibitors or immunosuppressants. Keywords: Myasthenia gravis, autoimmune,children,diagnosis ,management,

Neurology and Psychology and Physical Medicine and Rehabilitation

Importance of Development in Pediatric Medicine

Reza Shervin Badve [1] © Ⓟ

[1] **Tehran University of Medical Sciences**

Abstract: Development is a crucial aspect of pediatric medicine, involving the physical, cognitive, emotional, and social growth of a child from infancy through adolescence. Understanding and monitoring a child's developmental progress is vital for pediatricians, as it helps ensure that milestones are being met and identifies potential delays or disorders early. Development in pediatric medicine serves as a foundation for evaluating a child's overall health. A child's ability to reach specific developmental milestones—such as rolling over, walking, talking, and socializing—provides vital clues about their neurological, musculoskeletal, and cognitive health. Deviations from typical developmental patterns may signal underlying medical conditions, such as developmental disorders, genetic syndromes, or neurological issues. Detecting these early allows for timely interventions, which can significantly improve outcomes. Pediatricians use developmental screening tools during routine check-ups to assess whether a child is progressing as expected. These screenings are particularly important during the early years, as the brain undergoes rapid growth and development. By tracking a child's development over time, pediatricians can identify issues such as speech delays, autism spectrum disorder, motor disorders, or behavioral challenges. Early recognition of these problems ensures that children can receive appropriate therapies, such as speech, physical, or behavioral therapy, to promote optimal development. Additionally, the focus on pediatric medicine extends beyond clinical evaluations. Pediatricians educate parents on promoting healthy development through proper nutrition, sleep, and stimulation. They also offer advice on creating environments that support a child's physical, emotional, and social growth, ensuring that children have the resources they need to thrive. In summary, development is a cornerstone of pediatric medicine. It allows for the early identification of health issues, guides interventions, and supports the overall well-being of children as they grow and mature into healthy adults.

Neurology and Psychology and Physical Medicine and Rehabilitation

Importance of electrodiagnostic tests in diagnosis of myasthenic syndromes

Masood Ghahvechi Akbari [1] © ℗

[1] **Physical Medicine and Rehabilitation Department, Children's Medical Center, Tehran University of Medical Sciences**

Abstract: Importance of electrodiagostic tests in diagnosis of myasthenic syndromes Neuromuscular junction disorders are a group of conditions that cause muscle weakness. Their etiology can be autoimmune, congenital, metabolic, or toxic mediated. Neuromuscular Junction disorder patients present with complaints of muscle fatigue and weakness that fluctuate with episodes of worsening after activity. Patients present with proximal greater than distal muscle weakness. It is common to receive complaints about bulbar or extraocular muscle weakness. The diagnosis of neuromuscular junction disorder derives from a thorough history and physical examination, electrodiagnostic studies with repetitive nerve stimulation (RNS), exercise testing, and single-fiber EMG (SFEMG). A routine motor and sensory nerve conduction study should first be conducted to ensure no other nerve pathology exists and that the clinician can interpret the RNS results. RNS involves supramaximal motor nerve stimulation 5-10 times at 3 Hz to determine compound muscle action potential (CMAP) amplitude decrement. The 4th CMAP amplitude is compared with the first. A decrement of 10% is significant. For a neuromuscular junction study, all weak muscles in the patient should be examined in theneedle EMG portion of the test. During the exam, the diagnostician may notice unstable MUAPs with normal recruitment.

Neurology and Psychology and Physical Medicine and Rehabilitation

MEDNIK SYNDROME

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Abstract: In humans, copper is required for numerous cellular processes, including mitochondrial respiration, antioxidant defense, neurotransmitter synthesis, connective tissue formation and skin pigmentation. Two inherited disorders of copper metabolism have been known before: Menkes disease (MIM 309400) and Wilson's disease (MIM 277900), caused by mutations in two distinct but closely related copper ATPases that markedly differ in their tissue expression. ATP7A, the Menkes protein, is present in most non-hepatic tissues, whereas the Wilson's disease protein ATP7B is predominantly expressed in the liver. Both are localized at the level of the trans-Golgi network, where they transport copper to cuproenzymes synthesized within the secretory compartments. MEDNIK syndrome is an autosomal recessive rare disease and is one of the most recently described copper metabolism disorders characterized by intellectual disability, ichthyosis, hearing loss, peripheral neuropathy, enteropathy and keratodermia. Herein, we report the first infant case of MEDNIK syndrome Approved by a genetic study. His symptoms began at 45 days old admitted because of sepsis and refractory vomiting. Additional symptoms include Failure to thrive, and irritability and GI symptoms. His brother died because of similar symptoms during infancy. Keywords: inherited copper metabolism, MEDNIK syndrome, AP1S1 gene mutation, MIM 609313

Neurology and Psychology and Physical Medicine and Rehabilitation

Migraine Prophylaxis

Mahmoud Reza Ashrafi [1] © Ⓟ

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Abstract: In the global burden of disease study 2017, headache was among the leading causes with the greatest age-standardized prevalence and among the top three leading causes of years lived disability. The prevalence of migraine has a wide range in school aged children and adolescents worldwide, ranging from 2.4% in Nigeria to 26.7% in Turkey. Management of migraine includes treatment of acute attacks, prophylactic treatment, and behavioral modification. Preventive therapy is indicated when headaches are frequent (more than once a week) and/or disabling (missing social, home or school activities or pediatric migraine disability assessment (PedMIDAS) score 20) . Preventive treatment is still a challenge among physicians dealing with pediatric migraine. Several pharmacological classes have been studied and are recommended for preventive migraine treatment, including tricyclic antidepressants, antiseizure medications, calcium channel blockers and beta blockers . Nonetheless, to the best of our knowledge to this time, there is no US Food and Drug Administration (FDA) approved medications for migraine in children less than 12 years, and topiramate is the only FDA approved drug in pediatric migraine in adolescents aged 12-17 years. We has conducted several studies and worked with several agents - including cinnarizine, propranolol, sodium valproate, topiramate, levetiracetam and amitriptyline - to find the best medication for prophylaxis of pediatric migraine headache. Cinnarizine is an L-type calcium channel blocker which inhibits stimulation of vascular smooth muscle cells and vestibular hair cells as well as having an antihistaminic effect. So, it can act as an anti-migraine medication. : Our results indicate that the use of cinnarizine at doses of single 1.5 mg/kg/day in children weighing less than 30 kg and a single 50 mg dose in children weighing more than 30 kg, administered at bedtime is effective and safe for prophylaxis of migraine headaches in children. Drowsiness/somnolence, nausea and weight gain are the most common reported adverse events.

Neurology and Psychology and Physical Medicine and Rehabilitation

Pediatric acute hydrocephalus developing after tubercular meningitis: a case report study

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Abstract: Abstract Background: Tuberculosis ranks second as the most common cause of death among infectious diseases, preceded only by COVID-19, which can involve multiple organs. Tuberculous meningitis (TBM) is known to have serious and atypical complications affecting the central nervous system, especially in more vulnerable populations such as children and adolescents. Case presentation: The 15-year-old female patient was admitted to the hospital with altered mental status after complaining of nausea, weakness, and cough for 3 weeks. A chest computed tomography (CT) scan showed cavitary lesions, a lumbar puncture sample had a glucose level of 15 mg/dl, and the brain CT scan revealed acute hydrocephalus. While the patient was treated with anti-tubercular medications, an external ventricular drain was placed and the patient was monitored. Conclusion: This report presents acute hydrocephalus as a rare and atypical consequence of disseminated tubercular infection resulting in meningitis. Keywords: acute hydrocephalus; meningitis; pediatric neurosurgery; tuberculous.

Neurology and Psychology and Physical Medicine and Rehabilitation

Pediatricians' Role in The Management of Seizures and Epilepsy

Mahmoud MOHAMMADI [1] © ℗

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Abstract: The role of pediatricians in managing seizures and epilepsy is crucial due to their front-line position in children's healthcare. Seizures, defined as singular events, and epilepsy, characterized by recurrent seizures, are significant concerns in pediatric neurology. The incidence of epilepsy in children varies by age, with higher rates in the first year of life and decreasing through adolescence. Early diagnosis and intervention by pediatricians can greatly improve quality of life for affected children. Pediatricians are responsible for recognizing key seizure symptoms, obtaining detailed patient histories, and determining when to refer patients to specialists. Tools such as EEG and neuroimaging are essential for diagnosis, with specific guidelines for their appropriate use. Collaboration with pediatric epileptologists and referral centers is emphasized, particularly for complex or refractory cases. Pediatricians must also engage with families to ensure comprehensive care. Recent updates in seizure classification and anti-seizure medications require pediatricians to stay informed of advancements in treatment approaches. The multidisciplinary team approach, involving specialists, families, and pediatricians, is vital to achieving optimal outcomes for children with epilepsy. Early identification of red flags, such as developmental regression or unusual seizure types, and ongoing collaboration are key elements in managing pediatric epilepsy effectively.

Neurology and Psychology and Physical Medicine and Rehabilitation

Practical Evaluation of Children With Macrocephaly

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Abstract: The assessment of growth in general and more particularly the measurement of the head circumference is an integral part of the pediatric neurological examination. Obviously measurements of head circumference (HC) over time are more informative and should be plotted to the appropriate chart for sex and conceptional age. Macrocephaly (MC) defined as head circumference that is more than two standard deviations above the mean for age, sex, and body size, established by use of measurements and standard growth charts. Accelerated head circumference growth by more than one standard deviation from the child's previous standing can also indicate MC. Macrocephaly may be due to megalencephaly (true enlargement of the brain parenchyma) or due to other conditions such as hydrocephalus or cranial hyperostosis. Evaluation of head growth rate (ie, serial head circumferences) along with assessment of developmental milestones, perinatal history, and signs of increased intra cranial pressure (ICP) is important for differential diagnosis, urgency of imaging, and radiological interpretation. It is therefore essential to measure the HC of the parents before considering further investigations. Macrocephaly with normal growth rate and normal neurological examination is reassuring and is characteristic of benign megalencephaly, which is usually familial. Macrocephaly and accelerated head growth without elevated pressure and with normal neurological exam may occur as non progressive subarachnoid space dilatation with or without ventricular enlargement. This pattern is most commonly referred as "benign extracerebral collection of infancy" (BECC), but has also been termed as "benign enlargement of the sub-arachnoid spaces", "benign infantile HC", and "benign external HC". Macrocephaly with accelerated head growth due to progressive HC is usually associated with signs of ICP and often with declining milestones. If the cause is hydrocephalus referral to neurosurgery will be necessary. If other causes are suspected then a basic metabolic screening along with baseline biochemistry tests (such as urine organic acids analysis and blood acylcarnitine profile, studies for storage disorder like Tay–Sachs disease, specific diagnostic testing such as enzyme or gene analysis) and possible referral to a clinical geneticist will be required.

Neurology and Psychology and Physical Medicine and Rehabilitation

Promotional Programs of Early Childhood Development

Farin Soleimani [1] © ℗

[1] **Farin Soleimani, MD, Pediatrician, Research Professor. Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.**

Abstract: Development is a complex process through which individuals acquire several competences that enhance performance and improve adaptation to the environment. Although this process continues from infantile through to death, most developmental changes occur during the early years of life when neural structures are rapidly evolving. Early childhood is a critical period in the lifespan, extending to around 8 years of age. During this time, significant changes and developments take place across various bodily systems, including the brain and nervous system. According to the World Health Organization (WHO), it is essential for parents to be informed about the norms and stages of Early Childhood Development (ECD). Research indicates that mothers with more knowledge about childhood development are more likely to provide age-appropriate books and educational materials, engage in reading, storytelling, and create a better home environment for their children. ECD encompasses motor skills, communication (speech and language), cognitive abilities, and socioemotional development. Interventions during this period are highly effective in disease prevention and health promotion. Providing a strong start in early childhood can lead to greater accomplishment in life, better employment prospects, higher earnings, active societal participation, increased responsibility, and a reduction in crime and some chronic diseases. Optimal parenting involves a broad range of activities to ensure that children are cared for physically, cognitively, socially, and emotionally. Since these aspects are critical to effective parenting, parenting programs often aim to improve one or more of these caregiving dimensions. Education for caregivers should focus on enhancing the quality of parenting rather than merely increasing the quantity of child care. Various methods of parent education include group-based sessions, booklets, face-to-face interactions, home visits, books, web-based platforms, technology-based resources, CDs, and videotapes. Additionally, mobile learning through laptops, tablets, and cell phones is a newer approach. Traditional methods, such as group and face-to-face education, can help parents utilize these technologies effectively.

Neurology and Psychology and Physical Medicine and Rehabilitation

The Role of Pediatricians in Managing Childhood Epilepsy

Reza Shervin Badve[1] © ℗

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Abstract: Pediatricians play a crucial role in managing childhood epilepsy, from early identification to ongoing care. As primary healthcare providers for children, they are often the first to recognize symptoms of epilepsy, such as recurrent seizures or unusual behaviors, and initiate the diagnostic process. Early diagnosis is essential in epilepsy, as timely treatment can prevent further neurological damage and improve long-term outcomes. One of the key responsibilities of pediatricians is distinguishing between seizures and other non-epileptic events, such as febrile seizures or syncope, which may not require long-term treatment. By obtaining a thorough history and conducting a clinical examination, pediatricians help guide further evaluation, which may include electroencephalograms (EEG) and neuroimaging. Once epilepsy is diagnosed, pediatricians work together with pediatric neurologists or epileptologists to create a personalized treatment plan. This often involves prescribing anti-seizure medications, which need to be carefully selected based on the type of epilepsy, the child's age, and potential side effects. Pediatricians also monitor the effectiveness of the medication and watch out for any adverse effects to ensure that the treatment is both safe and effective. Regular follow-ups allow for adjustments in medication as needed and tracking the child's developmental progress. Beyond medical treatment, pediatricians offer holistic care, addressing the overall impact of epilepsy on a child's quality of life. They work with families to provide education about managing seizures, adhering to medication, and taking safety precautions. Pediatricians also provide advice on making lifestyle adjustments, school accommodations, and mental health support, as children with epilepsy often encounter difficulties related to learning and social interactions. In conclusion, pediatricians play a critical role in the comprehensive care of children with epilepsy. Their early recognition, treatment, and ongoing support are essential for better health outcomes and improved overall well-being for the child and their family.

Neurology and Psychology and Physical Medicine and Rehabilitation

Tic disorder and Tourette syndrome in children

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Abstract: Tics are sudden, rapid, recurrent, nonrhythmic motor movements or vocalizations that have wax and wane in frequency. Simple motor tics (eye blinking, neck jerking, shoulder shrugging, extension of the extremities) are fast, brief movements involving one or a few muscle groups. Complex motor tics involve sequentially and/or simultaneously produced, relatively coordinated movements that can seem purposeful (brushing back one's hair bangs, tapping the foot, imitating someone else's movement [echopraxia], or making a sexual or obscene gesture [copropraxia]). Simple vocal tics (throat clearing, sniffing, coughing) are solitary, meaningless sounds and noises. Complex vocal tics involve recognizable word or utterances (partial words [syllables], words out of context, coprolalia [obscenities or slurs], palilalia [repeating one's own sounds or words], or echolalia [repeating the last heard word or phrase]). Tic disorders include Tourette disorder (TD), persistent (chronic) motor or vocal tic disorder (PTD) and provisional tic disorder. Tourette disorder (TD) and persistent (chronic) motor or vocal tic disorder (PTD) have persisted for 1 yr since first tic onset but provisional tic disorder has persisted 1 yr. PTD is differentiated from TD in that PTD is limited to either motor or vocal tics (not both), whereas TD has both motor and vocal tics at some point in the illness (although not necessarily concurrently). Onset is typically between ages 4-6 yr. peak tic severity is between ages 10 and 12 yr and marked attenuation of tic severity in most individuals (65%) is by age 18-20 yr. A small percentage will have worsening tics into adulthood.

Poisoning and Pharmacology

Common Animal and Insect Bites in Pediatrics

Sevil Abdolmohamadian [1] © ℗

[1] **Pediatrician, Assistant Professor, Tehran University of medical sciences**

Abstract: Animal bites are a common reason for children to visit primary care and emergency departments. Dog bites are the most prevalent, followed by cat bites at 20–30%. Other animals such as bats, monkeys, snakes, and rats collectively contribute less than 1% of cases. Hospitalization is necessary in only 4% of animal bite incidents. Analysis of the literature showed that the management of common animal bites in children presents a multifaceted challenge requiring a comprehensive understanding of the epidemiology, clinical presentation, and treatment modalities associated with each specific species. Effective wound management is paramount in reducing the risk of infection and promoting optimal healing outcomes. Additionally, tetanus vaccination status should be assessed and updated as necessary, and prophylactic antibiotics may be indicated in certain cases to prevent secondary infections. Furthermore, the role of rabies prophylaxis cannot be overstated, particularly in regions where rabies is endemic or following bites from high-risk animals. In addition to medical management, psychosocial support for both the child and their caregivers is integral to the overall care continuum. Future studies exploring the efficacy of novel treatment modalities, such as topical antimicrobial agents or advanced wound dressings, may offer new insights into optimizing wound healing and reducing the risk of complications.

Poisoning and Pharmacology

Naloxone Therapy in Opium Toxicity: What we need to know!

Farhoud Toutounchian [1] © ℗

[1] **Forensic Medicine and Clinical Toxicology department; Children's Medical Center; Tehran University of Medical Sciences**

Abstract: Naloxone is an FDA approved medicine used to quickly reverse an opioid overdose. Naloxone is a opioid antagonist that works by attaching to opioid receptors and therefore reverses and blocks the effects of other opioids. Naloxone should be used as soon as possible to treat a known or suspected opioid overdose emergency if there are signs of slowed breathing, severe sleepiness or the person is not able to respond (loss of consciousness). Naloxone is used to treat a known or suspected opioid overdose emergency in children or adults. Signs of an opioid overdose may include: - Slowed breathing, or no breathing - Very small or pinpoint pupils in the eyes; - Slow heartbeats; or - Extreme drowsiness, especially if you cannot wake the person from sleep. First, the purpose of administering naloxone is not to normalize the level of consciousness. The purpose of naloxone administration is to eliminate respiratory depression caused by opioids. In fact, if the patient is breathing spontaneously, the number and depth of his breathing are appropriate (more than 12 breaths per minute) and the percentage of oxygen saturation in the room air is above 90%, he does not need naloxone at all. If you have any of the following conditions, we consider giving naloxone: - The patient is cyanotic or has apnea - The patient is on the verge of cardiac-respiratory arrest (impending cardiorespiratory arrest). - Spontaneous breathing, but the number of breaths is low or the percentage of O2 Sat. is less than 90%. Withdrawal syndrome and over-shoot phenomenon are important subjects in this area. This is why we do not prescribe naloxone for everyone. The volume of each naloxone ampoule available in Iran is 1 milliliter, and each milliliter contains 0.4 mg of naloxone. For prescribing, our first question should be: Is the patient apneic or cyanotic? Is he about to have a cardio-respiratory arrest? If the answer is positive, we will not wait any longer to start slowly and with a low dose. This session has completed as a paper, and published as soon as possible!

Poisoning and Pharmacology

Swing Machine Oil Aspiration: Clinical Judgement in Rare Cases

Farhoud Toutounchian [1] © ℗

[1] **Forensic Medicine and Clinical Toxicology department, Children's Medical Center, Tehran University of Medical Sciences**

Abstract: Sewing machine oil ingestion is rare but is possible. Chemically, it belongs to hydrocarbon family which is toxic if swallowed or aspirated. Sewing machine oil has high viscosity and low volatility which makes it aspiration less likely. The main danger of hydrocarbon ingestion is chemical pneumonitis which may be as severe as acute respiratory distress syndrome (ARDS). We report a case of a 14 months/old boy with accidental ingestion of sewing machine oil, who subsequently developed tachypnea, fever and mild respiratory distress. First, the patient goes to a primitive medical center and undergoes gastric lavage with charcoal and sorbitol, and then he is discharged and goes home. About eight hours later, the patient went to the Children's Medical Center hospital due to lethargy and hard breathing. In this center, he undergoes diagnostic and therapeutic measures, including chest X-ray and chest CT scan. According to the clinical situation, on the fifth day of going to the hospital, he is a candidate for whole lung lavage under general anesthesia. This is a risky move. Choosing to do it and not to do it requires a hard and heavy clinical judgment. After consulting the parents and stating the complications caused by this risky procedure and caused by not doing it, they were consulted and their consent was obtained to perform a whole lung lavage. This issue has been raised in very rare experiences in the world, so it makes it difficult to judge and make a decision in this matter. It is recommended and because of the irreparable side effects caused by this oily substance, whole lung lava was done by accepting the risk and justifying the conditions. This case will be organized and reported as a case report. This case will be organized and published as a case report.

Keywords: Acute respiratory distress syndrome, airway pressure release ventilation, hydrocarbon ingestion, sewing machine lubricant, clinical judgement

Radiology

Imaging modalities in pediatric CNS emergency

Neda Pak [1] © ℗

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Abstract: Acute neurologic symptoms, from non-traumatic and traumatic causes, are a frequent reason for pediatric emergency hospital admissions. clinical symptoms of pediatric neuroradiologic emergencies can be non-specific and many pediatric patients have atypical clinical presentations so neuroimaging plays an important role in accurately underlying causes. Non-contrast head CT is the study of choice in patients with suspected acute intracranial hemorrhage or in patients with acute changes in neurologic status, particularly if brain MRI is not available or have contraindication of MRI. Rapid brain MRI protocols have been used as an alternative to CT for selected indications, such as, stroke, ventricular shunt malfunction and head trauma, given their speed of acquisition and lack of ionizing radiation given the higher sensitivity and specificity in diagnosing acute pediatric neuro-emergencies especially stroke by using DWI sequence. For acute demyelinating disease and infectious process as well as brain tumors, MRI with contrast administration is modality of choice. Thus, it is imperative for physicians to be familiar with the different imaging modalities

Radiology

Imaging modalities in pediatric musculoskeletal emergency

Razieh Khazaei [1] © ℗

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Abstract: Musculoskeletal emergencies in children are one of the important reasons to go to hospital, at the top of which we can mention pediatric trauma, which is one of the main causes of emergency admissions. Also, infectious cases such as necrotizing fasciitis, pyomyositis, osteomyelitis and septic arthritis along with bone infarction are other important issues. Considering that clinical symptoms may sometimes be mild and confusing, and regarding the age of children- who in many cases are unable to localize pain and its extent- imaging plays a significant role to diagnose the nature of disease. Some fractures specific to children- such as buckle and greenstick fractures-may have a subtle nature which may be hidden from the clinician's view. In addition, considering importance of Salter-Harris fracture due to involvement of the growth plate, role of imaging such as plain radiography and CT scan in this field is undeniable. Also, MRI is the modality of choice in diagnosing early stages of AVN, which if not diagnosed, could be an irreparable complication of fractures. In emergencies such as septic arthritis and necrotizing fasciitis, ultrasound plays an important role. Also, pyomyositis may be confused with osteomyelitis or abscess according to clinical symptoms, and ultrasound is helpful for differentiation. In cases such as pyomyositis, soft tissue abscess and septic arthritis, where ultrasound findings may be equivocal, MRI is very helpful. Also, considering 10 days to 2 weeks' time needed to create radiographic changes in osteomyelitis, MRI is the modality of choice to diagnosis occult osteomyelitis. Soft tissue tumors are often not an emergency, except in the case of superimposed infection or bleeding - in which ultrasound is helpful - or in the event of pathological fracture, in which plain radiography and CT scan play an important role. Finally, in cases of non-accidental injury - which is a common case with a sometimes confusing history and clinical symptoms – pain radiography and CT are practical to diagnose fractures such as metaphysical corner, clavicle and multiple rib fractures. Therefore, it is imperative for clinicians to be familiar with different imaging modalities in this field.

Rehumatology

Arthritis with Inflammatory Bowel Disease

Abdolreza Malek [1] © ℗

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Abstract: Introduction: The Arthritis of inflammatory bowel disease (IBD) may be defined as any noninfectious arthritis occurring before or during the course of Crohn's Disease or ulcerative colitis. Arthritis is the most common extra intestinal complication of these disorders. There are two patterns of joint inflammation: peripheral polyarthritis and, less commonly, involvement of the sacroiliac (SI) joints and axial skeleton. Epidemiology: Arthritis has been reported in 7% to 21% of children with IBD. Age at onset did not differ in patients with and without arthritis. The ratios of boys to girls were almost identical. Clinical manifestations: Two distinct patterns of joint disease occur. The more common one in patients with IBD is inflammation affecting peripheral joints. Ankles and knees, are most frequently affected. Whereas the SI arthritis bears little relation to the activity of the gut disease, the peripheral arthritis reflects the activity and course of the GI inflammation. Erythema nodosum, pyoderma gangrenosum, oral lesions, vasculitis and uveitis are the manifestations of the disease. Diagnosis: Making the diagnosis of arthritis associated with IBD rests on recognition of the significance of this association and on a high level of clinical suspicion. This suspicion would be supported by laboratory evidence of inflammation (high ESR, low serum albumin and high level of stool calprotectin), and negative results for rheumatoid factor and antinuclear antibody tests. Antibodies to neutrophil cytoplasmic antigens and anti–Saccharomyces cerevisiae antibody are frequently present in the sera of children with IBD. Radiographs of peripheral joints document only soft tissue thickening and joint effusions. SI arthritis, when it occurs, is not clearly distinguishable from that associated with juvenile AS. Spur formation of calcaneus and granulomatous synovitis reported. Although radionucleotide scanning or MRI is optimal for documenting early changes in SI joints. Treatment: Control of the primary disease usually results in remission of the peripheral arthritis. sulfasalazine or glucocorticoids may provide the best management of the arthropathy of IBD. Methotrexate and anti-TNF agents may also be helpful in patients who have no response to initial therapy.

Key word: Arthritis, Inflammatory Bowel Disease, Children

Rehumatology

Juvenile psoriatic arthritis

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Abstract: Juvenile psoriatic arthritis (JPsA) is a rare form of arthritis or joint inflammation that affects both skin and joints.JPsA is a relatively common subtype of JIA but is clinical presentation can be highly variable. Psoriasis is an ongoing (chronic) condition that causes a red, scaly, itchy rash. It also causes nails to become thick and pitted with tiny holes.A genetic background becomes obvious with a family history of psoriasis in half of the patients. A joint pattern with asymmetric arthritis of big and small joints and a high rate of dactylitis is typical for the disease. JPsA presents in subsets that are similar to the subgroups of juvenile idiopathic arthritis but occurs with different frequencies. Psoriatic arthritis causes painful joint pain and swelling, along with skin rashes. It most often affects finger and toe joints. But it can also affect wrists, knees, ankles, and the lower back. This condition is most common in adults ages 30 to 50. But it can start in childhood. In many cases, the skin disease starts before the arthritis. Early diagnosis and treatment helps to ease pain and prevent joint damage from getting worse.

Rehumatology

Laboratory Tests in Children Rheumatologic Diseases

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[1] **Tehran University of Medical Sciences**

Abstract: فهم و تفسیر تست های آزمایشگاهی در بیماری های روماتولوژیک کودکان با چالش هایی همراه است و گاها در کودکان مبتلا به بیماری های روماتولوژی کودکان تست های مناسبی درخواست نمی شود. بنابراین درنظر گرفتن تاریخچه بیماری و معاینه بالینی دقیق به درخواست مناسب تر تست های تشخیصی بیماری های روماتولوژیک کمک می کند. در این سخنرانی به توضیح موارد کاربرد و تفسیر تست های آزمایشگاهی در بیماری های روماتولوژیک کودکان خواهیم پرداخت.

Rehumatology

Review of reactive arthritis in children: an update

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Abstract: Review of reactive arthritis in children: an update Raheleh Assari, MD. Department of Pediatric Rheumatology, Pediatric Center of Excellence, Children's Medical Center of Tehran University of Medical Science Reactive arthritis (ReA) in children is an inflammatory joint condition that typically follows an infection, often of the gastrointestinal or urogenital tract. Recent findings suggest that ReA is increasingly recognized as a significant cause of arthritis in children, with viral infections (e.g., parvovirus B19, enteroviruses) and bacterial infections (e.g., Streptococcus, Chlamydia) serving as the most common triggers. The condition is characterized by asymmetric arthritis, predominantly affecting the lower extremities. In particular, children may exhibit oligoarthritis, enthesitis, or dactylitis. Diagnosis is primarily clinical, supported by the exclusion of other causes of joint pain and infection; serological tests and imaging may be utilized to aid in the evaluation. Treatment approaches remain largely symptomatic, with non-steroidal anti-inflammatory drugs (NSAIDs) being the first line, while more severe cases may require corticosteroids or disease-modifying antirheumatic drugs (DMARDs). This review underscores the need for increased awareness of reactive arthritis among pediatricians and primary care providers to ensure timely diagnosis and management, as well as highlights future research directions to better understand its long-term outcomes and optimal therapeutic strategies. The emergence of COVID-19 has brought new challenges in the pediatric population, including the recognition of reactive arthritis following SARS-CoV-2 infection. This abstract reviews the clinical presentations, underlying mechanisms, and current management strategies associated with post-COVID-reactive arthritis in children. Emerging data indicate that some children may develop reactive arthritis as part of a post-viral inflammatory response after acute COVID-19 or in association with multisystem inflammatory syndrome in children (MIS-C). Clinical features often include rapid-onset, inflammatory arthritis, frequently affecting the lower extremities with potential enthesitis and dactylitis. The pathogenesis is believed to involve a dysregulated immune response to viral antigens, leading to synovial inflammation. Diagnosis is primarily clinical, supported by patient history, exclusion of other inflammatory arthropathies, and inflammatory markers. Current management involves symptomatic treatment with NSAIDs, while corticosteroids may be indicated in severe cases. As the long-term implications of post-COVID-19 sequelae continue to unfold, further research is crucial to delineate

Surgery

Internal rectal prolapse

Salaheddin Delshad * [1] © Ⓟ

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Abstract: Constipation in children is a prevalent concern that leads to numerous referrals to pediatricians and gastroenterologists. The causes of constipation can range from internal diseases and surgical conditions to idiopathic origins. Surgical causes include conditions like Hirschsprung's disease, anal stricture, and anal displacement, which ae typically managed by pediatric surgeons. Pediatricians and gastroenterologists primarily address constipation stemming from internal diseases through dietary modifications and pharmacological interventions. Notably, internal rectal prolapse is a significant, often overlooked contributor to constipation, which can persist despite extensive treatment and may progress to fecal incontinence. This study investigates children with internal rectal prolapse symptoms and compares them with a control group hospitalized for unrelated conditions. Clinical Symptoms Children experiencing internal rectal prolapse tend to exhibit a range of clinical symptoms indicative of severe constipation, including: • Intractable constipation • Hard, piecemeal stools • Painful bowel movements • Facial flushing and sweating during defecation • Back stiffness • Adoption of standing positions while defecating • Abdominal pain and anorexia Diagnosis The diagnosis of internal rectal prolapse primarily relies on the aforementioned clinical symptoms, supplemented by barium enema radiography. This imaging technique can reveal defects and an absence of fullness in the rectum, aiding in determining the degree and severity of prolapse. Barium enema radiography clearly differentiates between rectal masses and polyps due to contrasting appearances—the prolapse will display as a gray area amidst the contrasting black (intestinal wall) and white (lumen). Mesh Test and Grading of the Disease To further assess internal rectal prolapse severity, a standardized mesh test is performed under general anesthesia. A gauze mesh soaked with antiseptic is inserted into the rectum, and upon withdrawal, the extent of internal prolapse can be observed. The degree of prolapse is graded as follows: • Grade I: Prolapsed mucosa thickness up to 3 mm • Grade II: Thickness up to 5 mm • Grade III: Thickness up to 10 mm • Grade IV: Thickness exceeding 10 mm Each grade dictates a different treatment approach based on clinical symptoms, radiological findings, and the associated severity of the condition. Treatment Management strategies differ based on the severity of

Sleep Disorders

Evaluation and Management of Children with Obstructive Sleep Apnea

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[1] Board Member of International Pediatric Sleep Association (IPSA),Qaznin Medical Scinces University

Abstract: Sleep disordered breathing (SDB) is one of the most important sleep disorders in pediatric population. The most common subtype of SDB is Obstructive Sleep Apnea (OSA). OSA characterized by recurrent events of partial or complete upper airway obstruction during sleep which result in abnormal ventilation and sleep pattern. The prevalence of OSA in children ranges from 1.2% to 5.7 %. There are multiple factors that interact with each other such as anatomical factors, upper airway neuromotor tone, and airway inflammation. The most common predisposing factors are hypertrophy of tonsils, adenoid or both. The OSA symptoms are snoring, sweating, irritability, restless sleep, parasomnias, nocturnal enuresis, difficulty getting up in the morning, chronic mouth breathing, nasal speech and etc. OSA in children is associated with neurobehavioral deficits and cardiovascular morbidity which highlights the need for prompt recognition, diagnosis, and treatment. The OSA in children can lead to delayed growth and development and decrease in quality of life. All children should be screened for OSA and those with typical symptoms (e.g., snoring, restless sleep, and daytime hyperactivity) or risk factors (e.g., neurologic, genetic, and craniofacial disorders) should undergo evaluation including referral to a sleep specialist and overnight polysomnography (PSG). Drug Induced Sleep Endoscopy (DISE) is indicated for children with OSA who have small tonsils with residual OSA after adenotonsillectomy (AT) , initially offer Positive Airway Pressure (PAP) therapy when patients are either unable, unsuccessful, or unwilling to adopt such options, and for secondary other surgical therapies. The decision made to treat is based on the symptoms and severity of OSA. The wait and watch technique is an acceptable option in children with mild OSA who have no significant risk factors for progression such as obesity, asthma and etc. The routine treatments used for children with moderate or severe OSA, in order of priority, include AT, PAP therapy, medical therapy, myofunctional therapy and weight loss for obese children. Keywords: Sleep disordered breathing (SDB), Obstructive sleep apnea (OSA), Polysomnography (PSG), Adenotonsillectomy (AT), Children,

Sleep Disorders

Pineal Gland Cyst in a Pediatric Patient: A Case Study of Sleep Disorders

Mersedeh Ghodsi [1] © ℗

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Abstract: Pineal gland cysts, often incidental findings in MRI scans, are more common in girls and young women. Although typically benign and asymptomatic, these cysts can present neurological and glandular symptoms, including sleep problems. This article presents the case of a 7-year-old male patient with a pineal cyst and associated sleep issues, such as sleepwalking, morning drowsiness, and headaches upon waking. The patient also exhibited speech and learning disorders, delays in starting school, and a white patch on the skin. Despite the absence of apnea, snoring, and urinary incontinence, the child experienced restlessness during sleep, leading to episodes of sleepwalking and amnesia. Treatment included melatonin for sleep disturbances and risperidone for learning delays, alongside occupational therapy. Follow-up MRI revealed a 9 mm cyst in the pineal area, necessitating biannual monitoring. The patient's symptoms improved significantly with treatment, though the parents discontinued medication prematurely. This case underscores the need for further research into the clinical significance of pineal cysts and their management.

Young Researcher

A cross-sectional study on the reasons for vaccine hesitancy in children under seven years of age in Isfahan, Iran

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Abstract: Introduction: The diminution in vaccination coverage in recent years has contributed to the reappearance of infectious diseases, and vaccine hesitancy is one of the main causes. As a result, we investigated the causes of vaccine hesitancy in children. Materials and methods: This descriptive-analytical study was conducted cross-sectionally in 27 comprehensive health service centers in Isfahan City from June to October 2022. This study included Iranian families living in Isfahan who did not vaccinate their children by the due date. A researcher-made questionnaire collected data on children's vaccine hesitancy after verifying validity and reliability over the phone and in person by the researcher. The mothers completed informed consent. Independent T-tests, Pearson's correlation coefficient, analysis of variance, and a generalized linear model were used to analyze the data. Findings: Finally, 298 families participated in the study, 34.3% refused, and 65.7% delayed their child's vaccination. Vaccination was hesitant due to the child being sick at the time of injection (57.3%), believing that vaccination is not necessary to prevent uncommon diseases (49%), and being concerned about severe side effects caused by the vaccine (48.7%). Vaccine hesitancy among mothers with bachelor's degrees and families less than one kilometer from the health center was significantly less than among others. Additionally, Vaccines at birth, four, six, twelve, and eighteen months, and six-year-old vaccines were associated with vaccine hesitancy. Conclusion: Children's illness at the time of vaccination, the belief that vaccination is unnecessary to prevent uncommon diseases, and the worry about severe complications were among the most common reasons for vaccine hesitancy. Mother's education, distance to the health center, and vaccine type were associated with vaccine hesitancy. Keywords: Vaccination, vaccine hesitancy, vaccines, child, immunization.

Young Researcher

A five-day-old child with lipid hemihypertrophy: A case report

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Abstract: Introduction: lipid hemihypertrophy, also known as lipomatosis, is a rare pathological condition characterized by an inadequately defined overgrowth of mature adipose tissue that proliferates in an invasive manner and encompasses substantial regions of an extremity, face, or trunk. Case presentation: In this case report study, we present a case of a 5-day-old female neonate who presented with a visibly enlarged right thigh, right labia majora, and below the right mandible, with no tenderness elicited upon palpation. The ultrasonography indicated the presence of edema and heightened intracutaneous adipose tissue in the region of edema of the right labia major, medial surface of the right thigh, and right portion of the neck. No vascular or pathological lesions were detected. We monitored the patient until her ninth month of life. Discussion: This case report highlights the importance of early identification, comprehensive evaluation, and multidisciplinary management in neonates with lipid hemihypertrophy to optimize their long-term outcomes and quality of life. Lipid hemihypertrophy should be considered in the differential diagnosis of neonatal asymmetry. This condition can lead to functional problems, psychosocial issues, and an increased risk of developing certain tumors or metabolic disorders. Regular monitoring is essential to detect and manage potential problems and comorbidities.

Young Researcher

Advances and Challenges in Gene Therapy for Pediatric Brain Tumors: A Targeted Approach to Treatment

mohammadamir kakaee [1] ©, Mahdi Mobasheri [1] ℗

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Abstract: The need for new gene therapy methods in treating pediatric brain tumors is urgent due to the high mortality and significant long-term side effects of current treatments. These tumors are molecularly diverse, requiring targeted approaches to address specific genetic mutations. Conventional therapies often fall short, leading to poor outcomes for many patients. Gene therapy offers innovative strategies, such as targeted delivery and immune stimulation, to more effectively eliminate tumor cells while sparing healthy tissue. Recent advancements in preclinical models and early clinical trials, including the use of stem cells and oncolytic viruses, highlight the potential of gene therapy to improve outcomes for children with brain tumors. Gene therapy for brain tumors employs several mechanisms to target and eliminate tumor cells while sparing healthy tissue. Key approaches include suicide gene therapy, where tumor cells convert a prodrug into a toxic compound, and immune-mediated gene therapy, which enhances the immune system's ability to attack the tumor. Oncolytic virotherapy uses engineered viruses to selectively infect and kill tumor cells, often delivering therapeutic genes. Prodrug activation and tumor suppressor gene therapy are also employed, the former converting prodrugs into active chemotherapeutics and the latter introducing genes to suppress tumor growth or induce apoptosis. These strategies can be combined to improve efficacy. Gene therapy shows great promise in treating pediatric brain cancer due to its ability to target tumor cells specifically, potentially reducing damage to healthy brain tissue and minimizing long-term side effects. Advances in delivery systems, such as nanoparticles, could overcome the blood-brain barrier, and combining gene therapy with other treatments may enhance efficacy. However, significant challenges remain, including delivery issues, immune responses, and concerns about long-term safety. Theoretical perspectives, such as molecular targeting, immunotherapy integration, and nanomedicine, support the development of more effective and less toxic gene therapies, though further research is needed.

Young Researcher

Antipsychotic Drug Poisoning in Children Under 12 Years Old in Loghman-Hakim Hospital During 2016-2022

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Abstract: Background: Unintentional pediatric poisoning with antipsychotic medications represents an important clinical entity. This study aimed to evaluate the epidemiology, clinical manifestations, and outcomes of antipsychotic poisoning among children presenting to a referral hospital. Methods: This descriptive, cross-sectional study reviewed medical records of children 12 years old hospitalized for antipsychotic drug poisoning at Loghman Hakim Hospital in Tehran from 2016-2022. Data extracted included demographic details, agent and dose ingested, clinical findings, treatments administered, and patient dispositions. Results: 141 cases were identified, comprising 2.3% of all pediatric poisonings. Patient ages ranged from 6 months to 12 years (mean 5.5 years), with a male predominance (52.5%). The most common offending agents were risperidone (53.2%) and olanzapine (13.4%). Unintentional exposures accounted for 72.3% of cases. Central nervous system (CNS) effects like somnolence (61.7%) and dysarthria (19.1%) were most prevalent. Significant toxicity was infrequent; no fatalities occurred. Mean length of stay was 2 days for uncomplicated admissions. Conclusion: Antipsychotic poisoning in children chiefly involves atypical agents with a largely benign course. Risperidone predominated due to prescribing patterns. Somnolence represented the principal clinical manifestation. With reasonable supportive care, favorable outcomes are achievable in the pediatric population.

Young Researcher

Congenital solitary neck ulcer as a presentation of Langerhans cell Histiocytosis

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Abstract: Background: Langerhans cell histiocytosis (LCH) is a neoplasm originating from immature hematopoietic myeloid precursor cells. Historically, LCH was divided into different entities, but this system is insufficient due to overlapping manifestations. LCH may uncommonly present with isolated congenital ulcer. Aims/Purpose: The purpose of this study is to investigate and report a case of LCH presenting with an isolated congenital neck ulcer, emphasizing the importance of considering LCH in the differential diagnosis of treatment-resistant ulcers. Methods: We report a case of a neonate admitted with a fever and a purulent congenital ulcer at the base of the neck. Initial treatments for suspected hemangioma and infection were ineffective. Thereafter, a skin biopsy to perform histopathological and immunohistochemistry evaluation was conducted. Results: The histopathological evaluation revealed dense dermal infiltration of cells with characteristic histological features of LCH. Immunohistochemistry demonstrated strong positivity for CD1a, CD68, and S100. Further evaluation for disseminated disease showed no abnormalities. Follow-up evaluations at 3 and 6 months indicated no signs of recurrence or dissemination. Conclusions: This case highlights the importance of considering LCH in persistent, treatment-resistant cutaneous lesions in neonates and the necessity for biopsy and continuous monitoring.

Young Researcher

Future technology of robotic surgery in pediatric urology

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Abstract: Introduction: Pediatric urology is the main field of application of pediatric robotics. Robotic technology provides additional benefits for performing reconstructive urological surgeries such as pyeloplasty, ureteral reimplantation, and enterocystoplasty procedures. Robotic-assisted pediatric urological surgery has emerged as a valid and reliable surgical treatment that maintains the advantages of a minimally invasive approach; But it avoids the limitations of laparoscopic surgery. However, despite its widespread acceptance for adult patients, the use of robotic surgery in children has progressed relatively slowly. The purpose of this review is to address some of the issues related to benefits, limitations, and training for robotic-assisted surgery in pediatric urology. Methods: Electronic databases, including PubMed, Wiley, Science Direct, etc., were systematically searched. Findings: Robotic restorative in pediatric urology can be safely performed as scheduled outpatient procedures in most patients, eliminating the need for routine inpatient care. Robotic-assisted surgery provides a more precise, minimally invasive technique and numerous advantages over open or direct endoscopic surgery for the management of the condition. Future advances in technology with the production of pediatric-sized robotic instruments, along with increased experience of robotically trained pediatric urologists and learning surgeon experience, will further advance the field of robotic surgery in pediatric urology. Robotics costs may be significantly reduced as more robotic brands become available. There are several major advantages of robotic surgery over standard laparoscopy. The 3D view with 10x magnification allows for a deep and detailed understanding of the inside of the body that is not available in standard laparoscopy. Robotic instruments allow freedom of movement that is much better than standard laparoscopic instruments that offer limited maneuverability. Especially in pediatric urology surgery, where the field of surgery is limited due to the small abdominal cavity of children, robotic surgery technology has its strengths. Other benefits include improved dexterity, easier suturing, and better ergonomics. Conclusion: According to the studies, we strongly believe that the evolution of robotic platforms provides an alternative in the treatment of pediatric patients along with improving care and quality of life. Keywords: robotics ,Robotic-assisted, pediatric, surgery, urology

Young Researcher

Investigating the risk factors of precocious puberty in all girls with precocious puberty referred to Kausar Clinic in Ardabil in the year 1402-1401

Aref Zamani [1] ℗, Alireza Mohebi [1], Abbdul Salam [1], Simin Zarea [2] ©

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Abstract: Background and purpose: In recent years, due to the change in lifestyle and the impact of various factors on people's lives, the incidence of early puberty in girls has been increasing, which can be confirmed by the increase in the number of patients visiting the pediatric endocrinology clinic. This study was conducted with the aim of determining the risk factors of precocious puberty in girls with precocious puberty. Materials and methods: This cross-sectional descriptive study was conducted on 150 girls with precocious puberty referred to Bo Ali Hospital in Ardabil city in 1401-1402. After confirming the occurrence of precocious puberty in these girls, several possible risk factors affecting precocious puberty in this population were investigated. Findings: About 63.3% (n=95) girls were obese and overweight. In 40% (n=60) cases, low menarche onset age was reported in mother and sister. 88.6% (n=133) of girls were born at term. 23.3% (n=35) girls have faced emotional stress in the family. 66% (n=99) of girls were of low socio-economic status, 28% (n=42) of middle status and 6% (n=9) of high status. In 14% (n=21) girls, the history of gestational diabetes of the mother during pregnancy was reported. 30.6% (n=) of the subjects were from rural areas and the rest from urban areas. According to the questionnaire, the amount of physical activity was reported as low in 71.3% of cases. In 4.6% (n=7) of the cases, girls had a history of twins and multiples. 28% (n=42) of fathers, 10% (n=15) of mothers and 10% (n=15) of both parents of these children had a history of smoking and tobacco use. Conclusion: among the risk factors examined in our study, term birth, inactivity and obesity have the highest correlation and the history of twins and multiples has the lowest correlation with early puberty in girls.

Young Researcher

Respiratory allergies in children candidates for adenotonsillectomy in Fatemi Hospital, Ardabil City

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Abstract: Background: Adenotonsillar hypertrophy (ATH) is the most common cause of chronic obstruction of the upper airway in children. It has a high prevalence in patients with allergic disorders. Objective: This study aimed to investigate the prevalence of respiratory allergies in children candidates for adenotonsillectomy in ENT clinic. Methods: This study was performed on 78 children with 5 to 10 years old who were candidates for adenotonsillectomy in the ENT department of Fatemi Hospital, Ardabil city, a referral center in Ardabil province of Iran. Patients were evaluated for respiratory allergies with skin prick test after the completion of forms for recording data in Allergy clinic of Ardabil University of Medical Sciences. Statistical analysis of data was conducted using SPSS software version 21. Results: It was detected that 44.9% of children were allergic to various respiratory allergens. The presence of a history of asthma in patients with a probability of 75% led to being positive for respiratory allergy($P<0.001$). In addition, the presence of familial history of allergy was a risk factor, in which 7.66% of these children were reported with positive respiratory allergy($P<0.01$). The presence of atopic dermatitis and symptoms of eye allergy led to positivity of respiratory allergy with higher probability, but it was not statistically significant. Conclusions: Results showed that the prevalence of respiratory allergies were high in patients candidates for surgery with a history of asthma, atopic dermatitis, eye allergy, and familial history of allergies. Therefore, it is recommended to perform further evaluations on these patients prior to surgery.

Keywords: Adenotonsillar hypertrophy; Adenotonsillectomy; Children; Respiratory allergy

Young Researcher

Using Interactive Storytelling to Enhance Preschool Children's Knowledge of Healthy Eating Habits

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Abstract: Background: Early childhood is a crucial period for developing healthy eating habits. While traditional nutrition education often focuses on factual information, interactive storytelling offers a powerful and engaging approach for young children. This study examined the impact of a story-based nutrition education program on preschool children's knowledge of healthy eating habits. Methods: A group of 300 preschool children (ages 4-6) participated in a four-week, 60-minute every day "Healthy Heroes" story-based nutrition education program. Each week, children were presented with an engaging story featuring characters who made healthy food choices. The stories incorporated interactive elements, such as role-playing and questions, to encourage active participation. Pre- and post-intervention assessments were conducted using a specifically designed knowledge questionnaire, parent surveys, and observations of children's food choices during snack time. Results: Following the intervention, significant improvements were observed in the children's knowledge of healthy eating habits. The knowledge questionnaire scores showed significant increases in their understanding of food groups, the importance of fruits and vegetables, and the role of healthy eating in maintaining good health. Parents reported an increase in their children's awareness of healthy food choices, and observations indicated an increased selection of fruits and vegetables during snack time, due to using in CEBQ questioner Food Fussiness (FF P-value:0.037) and Enjoyment of Food (EF P-value:0.005) dimensions following the intervention. Conclusion: This pilot study suggests that interactive storytelling can be an effective strategy for enhancing preschool children's knowledge of healthy eating habits. The "Healthy Heroes" program demonstrated the power of storytelling to engage children's imaginations, promote active learning, and increase their understanding of important nutritional concepts. Further research is warranted to investigate the long-term effects of storytelling interventions and explore their potential for promoting healthy eating behaviors.

Keywords: Preschoolers, nutrition education, storytelling, healthy eating habits, nutritional knowledge, dietary behavior

ارائه مقالات به صورت پوستر

Poster Presentation

Cardicology

Correlation between myocardial iron overload determined by cardiac magnetic resonance with electrocardiography in major thalassemia

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Abstract: Background: Thalassemia is the most hereditary disease in the world. Transfusion increases cardiac iron overload. Following the cardiac iron overload is possible by electrocardiography (ECG), echocardiography, and cardiac magnetic resonance (CMR). Purpose: According to the high prevalence of major thalassemia and irreparable complications, we aimed to assess the correlation between iron overload in CMR with electrocardiographic changes. Methods: In this cross-sectional study, 80 patients over 7 years old were assessed. We assessed the ECG of all patients who had T2*≤ 20 msec in the CMR. ECG changes compared with the rate and severity of iron overload. All data were analyzed by Statistical Package for Social Science (SPSS version 24) and p-value 0.05 was considered as statistically significant. Results: Out of 80 patients with major thalassemia, 32(40%) and 48(60%) were women and men, respectively. During 2018-2020, patients were referred to Ghaem Hospital and Sarvar clinic. The mean iron overload was 13.4 ± 5.2. QT dispersion, QTc, QT interval, PR dispersion, PR segment, and cardiac axis had significant correlations with the rate and severity of iron overload. Conclusion: According to ECG changes in patients with major thalassemia, we can use ECG as an easy and accessible method. We will be able to predict cardiac iron overload by assessing the ECG waves and intervals. Keywords: Beta-thalassemia, Cardiac magnetic resonance, electrocardiographic

Emergency

Death of a 12-year-old adolescent girl following aluminum phosphide poisoning: a case report in emergency Department

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Abstract: Introduction: Aluminum phosphide, which is known as rice tablets, is used for agricultural purposes and pest control. Aluminum phosphide poisoning is one of the important concerns of public health in different regions and it is a common suicide cause of poisoning among adults, the highest rate of poisoning is in the age group of 21-25 years old with the majority of men. Using it at a younger age is a warning for the society to take this issue more seriously. Case report: The 12-year-old girl along with her friend went to the emergency room on foot and stated that they had consumed a rice pill about 30 minutes ago and complained of nausea and vomiting. They do not have a history of specific diseases. Immediately, both patients underwent cardiac monitoring. Venipuncture was performed and arterial gas analysis tests (PH=6.5/pco2=70/Hco3=9.4) and routine tests were sent. The test results were normal for one client who stated that he had not taken any medication. According to the results of the 12-year-old girl's tests, sodium bicarbonate infusion was started for the aforementioned. The patient was intubated due to severe respiratory acidosis. After a short period of time, the patient became bradycardic, HR=45, resuscitation started and the patient died after 45 minutes of resuscitation. Discussion and conclusion: aluminum phosphide poisoning is very dangerous and fatal. Strict laws should be put in place to limit easy access to aluminum phosphide tablets. Children and teenagers should be informed about the dangerous and deadly side effects of aluminum phosphide and also avoid keeping rice tablets at home to repel pests. At the macro level, proper planning should be done to inform the society and prevent the use of lethal substances.

Keywords: rice tablets, aluminum phosphide, poisoning, suicide, adolescent

Endocrine and Metabolism

Early Detection of Methylmalonic Acidemia By Neonatal Screening: A Case Study

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Abstract: Neonatal screening is a critical tool for diagnosing life-threatening diseases in infants, providing early detection and intervention opportunities. We report the case of a one-month-old Afghan boy diagnosed with methylmalonic acidemia through a neonatal screening program. He was referred to our facility due to increased C3 levels (propionyl carnitine) identified during the tandem mass screening of Acylcarnitine profiles. Further urinalysis revealed significantly elevated levels of methylmalonic acid, whereas the vitamin B12 level was normal. A challenge test was initiated with intramuscular B12, resulting in a more than 50% reduction in urinary methylmalonic acid levels after three days. Subsequent treatment included continued administration of B12 and sodium bicarbonate to manage his metabolic condition, which was diagnosed as B12-responsive methylmalonic aciduria. Genetic study identified homozygous mutation in methylmalonyl-CoA mutase. Although he had two episodes of acidosis, and subsequent admission, he has normal weight and height growth and there was no hypoglycemia, no hyperammonemia, no cytopenia and no end organ damage. Regular follow-ups showed at seven months old, he has exhibited normal growth patterns and achieved expected developmental milestones, demonstrating good neurological development. This case underscores the importance of neonatal screening programs in detecting and managing rare metabolic disorders early, significantly improving patient outcomes.

Keywords: Neonatal Screening, Methylmalonic Acidemia, Vitamin B12

Emergency and PICU

Steps of neonatal resuscitation and what are the 7 P's of intubation?

Homayoon Bana Derakhshan [1] © Ⓟ

[1] **Assistant Professor of Medical Education- Shahid Beheshti University of Medical Sciencess**

Abstract: With the importance of endotracheal intubation, in this speech, the stages of its implementation and the seven important p's are discussed. Steps of neonatal resuscitation: 1) Preparation 2) Morning Sniff position 3)Laryngoscopy 4)Intubation 5)Check position 6)Fixation 7)Check cuff pressure 7 P's of intubation: • Preparation. Basic preparation steps. ... • Preoxygenation. Core principles and rates of oxygen desaturation. ... • Physiologic optimization. • Paralysis with induction. Induction agents. ... • Positioning and protection. Cricoid pressure (Sellick maneuver) • Placement with proof. • Postintubation management.

Gastroenterology and Nutrition

chronic diarrhea in children

Dr.davod motaharizad [1] © ℗

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Abstract: Diarrhea is defined as stool volume of more than 10 grams/kg/day in infants and toddlers, or more than 200 grams/day in older children . Functional diarrhea is defined as the painless passage of four or more large, unformed stools for four or more weeks, with onset in infancy or the preschool years, and without failure to thrive or a specific definable cause . Infectious Causes Bacteria Parasites Postenteritis syndrome Abnormal Immune Response Celiac Disease Inflamatory bowel disease Allergic entropathy Eosinophilic gastroenteritis Microscopic and collagenous colitis Autoimmune enteropathies Immune Deficiency HIV Disease GASTROINTESTINAL PROTEIN LOSS Mucosal disease (IBD.celiac disease) Lymphatic obstruction BOWEL OBSTRUCTION OR DYSMOTILITY Hirschsprung disease Intestinal pseudobstruction CONGENITAL DIARRHEAS Congenital chloride diarrhea Congenital sodium diarrhea Microvillus inclusion Tufting enteropathy Osmotic (malabsorptive) diarrhea Glucose-galactose malabsorption Congenital sucrose-isomalatase deficiency Maldigestion of fat : Cystic fibrosis Abetalipoproteinemia Primary bile acid malabsorption Neuroendocrine tumors Gastrinoma Vipoma Factitious Diarrhea Stool characteristics History of FTT & weight loss (celiac Dis. C.F) Family history Abdominal examination Laboratory Evaluation Celiac disease Stool PH . Electrolytes . And reducing substances Osmotic gap : 290 – 2 ([Na]+[k]) Secretory diarrhea : O.G (50 mOsm/kg) PH (often 6.0) Osmotic diarrhea: O.G (75 mOsm/kg) PH (often 6.0) Fecal calprotectin and occult blood (IBD) Stool fat (steatorrhea) . The gold standard for diagnosis of steatorrhea is quantitative estimation of stool fat usually performed over 72 h . Other tests IBD (CBC . CRP . Serum albumin . Contrast radiography . Endoscopy) Protein-losing gastroenteropathy (Serum albumin . Fecal alpha-1 antitrypsine) Cystic fibrosis (sweat chloride testing) Pancreatic insufficiency (eg. CF fecal elastase-1 /or chymotrypsin) Stool giardia antigen Factitious diarrhea (eg. Laxative abuse. Hypocalemia Or metabolic alkalosis or factitious diarrhea) : stool osmolality is elevated in the presence Of laxatives 290 and is reduced 290 mOsm/kg if the sample is contaminated With water or dilute urine. Functional diarrhea watery (Osmotic versus secretory) Inflammatory Fatty Treatment Considerations Malnutrition Diet Medication Probiotics Antidiarrheal drugs somatostatin

Gastroenterology and Nutrition

Examination of Clinical, Endoscopy and One-Year Follow-Up Findings of Children with Accidental Ingestion of Caustic Substances Admitted to Shahid Sadoughi Hospital (2016-2019)

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Abstract: Introduction: Accidental ingestion of caustic substances can cause serious damage to the digestive system. This study was conducted with the aim of investigating the incidence of esophageal stricture within one year after accidental ingestion of caustic substances and its relationship with the first endoscopic findings in children. Methods: The present study was a retrospective and cross-sectional study that has been conducted for 3 years on children with accidental ingestion of caustic substances referred to Shahid Sadoughi Hospital in Yazd City (August 2015-2015). Demographic information, type and amount of ingested material, initial symptoms, initial endoscopic findings and degree of esophageal tissue burn were recorded and the patients were followed up for one year. Finally, the data were analyzed by SPSS version 22 software. Results: In this study, 55 children were evaluated, their average age was 3.19 years. Participants consisted of 23 (41.8%) girls and 32 (58.2%) boys. Children had ingested pipe openers chemicals (30.9%), bleach liquid (29.1%) and hydrochloric acid (12.7%), respectively. Initial endoscopic findings were normal in 45.5% of children, and the most damage was grade IIb and IIa. The incidence rate of esophageal stricture in month later was 47.3%, and in the year later, the total incidence of stricture and GOO was 27.3% (16.4% of esophageal stricture and 7.3% of stricture and GOO). Conclusion: The present study showed that esophageal injury following the accidental ingestion of caustic substances is common in children, and the presence of symptoms in the patients at the beginning of the visit can be associated with higher grade injuries, and the occurrence of stricture is more common after severe injuries.

Keywords: Caustic substances, Endoscopic findings, Children

Gastroenterology and Nutrition

Managing extreme picky eating by using food chaining method.A case presentation

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Abstract: Food chaining is a process used to slowly introduce new foods to child by pairing the new food with a similar food that child already enjoys. The aim is to introduce similar new foods to their preferred foods. Food chaining involves taking child's preferred food and making small changes in size, shape, color, temperature, texture, and flavor. It is an effective way to gradually increase the variety of your picky eater's diet, and as a result, improve diet quality. When we begin a food chain, the most child may be comfortable with is smelling or touching/playing with the new food. we encourage these behaviors as they are a valuable step in trying new foods. we presented, a three-year-old boy, was brought to see by his mother for being very picky with his food. His mother was worried that he has not been putting on enough weight over the past 12 months because he had only achieved a quarter of his 'expected weight', according to the child's health booklet. He had a sensory processing disorder -hyper responsive type-and an autism spectrum disorder. He was noted to be an active and cheerful child. His height and weight were thriving along the 10th percentile and physical examination was normal. There weren't any red flags noted in his medical history or physical examination, and there were no notable developmental delays. His mother was surprised to hear that he could be extending his autonomy to his choice of food, she was able to relate this to her son's assertion with his toys and play activities. .we knew he just only love chicken nuggets and french fries, but how do we get him to eat grilled chicken and roasted potatoes and red beef? Mealtime has now become a nightmare for his mother, he running around while his mother tries to 'stuff' him with food. He was not interested in trying new foods, and preferred.We shared some parental tips on basic feeding principles and the introduction of new food by using food chaining method, and agreed on a plan to review his well-being in three months.

Gastroenterology and Nutrition

Maternal education and its influence on child growth and nutritional status during the first two years of life: a systematic review and meta-analysis

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Abstract: Background: The first 1,000 days are crucial for child health. Impaired growth during this time, mainly due to undernutrition, increases morbidity, mortality, and long-term effects. Maternal education is a key predictor of undernutrition, though its exact impact remains unclear. This study systematically reviews and analyzes the effect of high versus low maternal education on child growth from birth to age two using population-based cohort studies. Methods: Databases including PubMed, Scopus, EMBASE, Web of Science, ERIC, and Google Scholar were searched from January 1990 to January 2024 using appropriate terms. We included cohort studies of healthy children aged two years and under and their mothers, categorizing maternal education levels. Child growth and nutritional outcomes were assessed using various indicators. Two reviewers independently conducted data extraction and assessed study quality using the Newcastle Ottawa scale. Random-effects models were used for meta-analysis, and heterogeneity was assessed with the Cochrane Q and I^2 statistic. Subgroup and sensitivity analyses were performed, and publication bias was evaluated. Findings: The literature search retrieved 14,295 titles, and after full-text screening of 639 reports, 35 studies were included, covering eight outcomes: weight for age z-score (WAZ), height for age z-score (HAZ), BMI for age z-scores (BMIZ), overweight, underweight, stunting, wasting, and rapid weight gain. In middle-income countries, higher maternal education is significantly associated with elevated WAZ (MD 0.398, 95% CI 0.301-0.496) and HAZ (MD 0.388, 95% CI 0.102-0.673) in children. Similarly, in studies with low-educated population, higher maternal education is significantly linked to increased WAZ (MD

0.186, 95% CI 0.078-0.294) and HAZ (0.200, 95% CI 0.036-0.365). However, in high-income and highly educated population, this association is either absent or reversed. In high-income countries, higher maternal education is associated with a non-significant lower BMI-Z (MD -0.028, 95% CI -0.061 to 0.006). Notably, this inverse association is statistically significant in low-educated populations (MD -0.045, 95% CI -0.079 to -0.011) but not in highly educated populations (MD 0.003, 95% CI -0.093 to 0.098). Interpretation: Maternal education's association with child growth varies based on country income and education levels. Further research is needed to understand this relationship better.

Gastroenterology and Nutrition

Nutritional Assessment and Growth Indices in Children Hospitalized in the Pediatric Intensive Care Unit: A Study at Shahid Sadoughi Hospital, Yazd"

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Abstract: Introduction : Malnutrition in children represents a significant global public health challenge, particularly prevalent in developing nations, with detrimental impacts on both the physical and mental well-being of children. Malnutrition not only predisposes children to infections but also stands as a leading cause of child mortality. This study aimed to investigate growth indicators and assess the nutritional status of children admitted to the Pediatric Intensive Care Unit (PICU) at Shahid Sadoughi Hospital in Yazd. Methods: This cross-sectional, descriptive study involved 100 children aged over 1 month who were hospitalized in the PICU at Shahid Sadoughi Hospital in Yazd. Malnutrition was diagnosed using three indices: weight-for-age, height-for-age, and weight-for-height, based on the Gomez and Waterlow criteria. Data analysis was performed using SPSS software. Results: Among the 100 participants, 65 (65%) were identified as malnourished, while 35 (35%) showed no signs of malnutrition. Of the malnourished children, 29 (44.61%) presented with acute malnutrition, and 36 (55.38%) exhibited chronic malnutrition. In terms of BMI status, 48 children (48%) were classified as normal, 1 child (1%) was obese, 1 child (1%) was overweight, 17 children (17%) were categorized as wasted, and 33 children (33%) were severely wasted. Regarding the weight-for-age index, 52 children were underweight, with 14 children (26.92%) being underweight and 38 children (73.07%) classified as severely underweight. Concerning the height-for-age index, 36 children were stunted, among whom 18 children (50%) were stunted and 18 children (50%) were severely stunted. The distribution of malnutrition presence or absence, as well as the type of malnutrition, based on age, reason for hospitalization, and duration of hospitalization, did not show significant differences. While the presence or absence of malnutrition, type of malnutrition, and BMI status did not exhibit a significant relationship with gender, a notable difference was observed in terms of stunting status. Conclusions: Given the high prevalence of malnutrition in hospitalized children, it is recommended to implement measures such as enhancing awareness and literacy among parents, particularly mothers, and closely monitoring hospitalized children.

Gastroenterology and Nutrition

Prevalence of obsession and stress in mothers of infants with colic

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Abstract: Introduction: Infantile Colic with high Prevalence can have long-term adverse effects on the family and child and worsen the mental state of mothers. Objective: Studying the prevalence of obsession and stress in mothers of infants with colic referred to the Pediatric Clinic of Shahid Sadoughi University of Medical Sciences, Yazd, Iran from October 2018 to Summer 2020. Methods: In this descriptive-analytical study, 117 mothers of infants with colic(according to the Wessel criteria) referred to the pediatric gastrointestinal clinics of Shahid Sadoughi University of Medical Sciences, Yazd, Iran from October 2018 to summer 2020, were included in the study based on easy sampling method. The prepared questionnaires based on the Holmes-Rahe Stress Scale and Yale-Brown Obsessive-Compulsive Scale and the study related variables were distributed among the sample individuals. The collected data were analyzed using SPSS 19 software. Chi-square test was used to determine the relationship between qualitative variables and P value ≤ 0.05 was considered as a significant level. The required indicators and tables were prepared. Results: Among mothers of infants with colic based on Yale-Brown Obsessive-Compulsive Scale, 64.1% of mothers showed very mild OCD, 24.8% showed relatively mild OCD, 7.7% had moderate OCD and 3.4% had severe OCD. In terms of the Holmes-Rahe Stress Scale, 29.1% of mothers were normal, 14.5% had moderate stress, 28.2% had high stress and 28.2% had severe stress. In this study, no significant relationship was observed between infant parameters of age at the time of visit, sex, weight (at the time of visitandat the time of delivery), birth rank, diet method, term or preterm and the mother's parameters of age, education, job, history of infants with colic, delivery type and place of residence with obsession and stress. Conclusion: Based on the results of this study, most of the mothers of infants with colic presented high or severe stress, and small percentage of studied mothers had moderate to severe OCD. No significant relationship was observed between the studied infant's or mother's variables and obsession and stress of mothers of colic infants.

Keywords: Infantile; Colic; Obsession; Stress; Mother

Gastroenterology and Nutrition

The effect of fish consumption on fetal health: a literature review

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Abstract: Introduction: Fish is a rich source of essential nutrients like omega-3 fatty acids (especially DHA), high-quality protein, and important vitamins and minerals, all of which support fetal brain and eye development. Despite these benefits, concerns about mercury contamination have raised questions about fish consumption during pregnancy. Mercury can cross the placenta and may impact fetal brain development. Balancing the nutritional benefits of fish with the potential risks of mercury exposure is crucial. This study examines the effects of maternal fish consumption on fetal health and development. Search method: The systematic search was performed using online databases consisting of PubMed and Google scholar for Investigating the effect of fish consumption on fetal health and restriction from incent up to 2023. The following keywords were used Fish consumption, Fetal health, Omega-3 fatty acids, DHA, Mercury exposure, Prenatal nutrition, Fetal brain development, Maternal diet, Environmental contaminants. Additionally, to find further relevant publications, the references list of included records and review articles searched. Result: A total of 8 articles from 2010 to 2023 were included. Most of reviewed studies, supports the benefits of fish consumption during pregnancy, primarily because of the effects of n-3 polyunsaturated fatty acids on the neurodevelopment of the fetus compared to potential detrimental effects. However in 2 studies, their concern about chemical pollutants especially mercury (Hg) for pregnant women were bold, as this could affect their fetuses. Conclusion: In order to maximize the benefits of fish consumption and minimize its disadvantages, it is better to consume smaller fish with high DHA and low MeHg, such as anchovy, Arctic char, Atlantic mackerel, catfish, cod, haddock, herring, perch, pollock, salmon, sardines, shellfish, tilapia, trout and tuna, etc. Additionally more studies are needed to define a local level of "recommended fish" consumption for developing dietary recommendations for pregnant women.

Key words: Fish consumption, Fetal health, Omega-3 fatty acids, DHA, Mercury exposure, Prenatal nutrition, Fetal brain development, Maternal diet, Environmental contaminants

Gastroenterology and Nutrition

The Etiology of Cholelithiasis in Children

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Abstract: While cholelithiasis is a rare condition in children, its incidence has been on the rise in recent decades due to advancements in diagnostic tools. The exact pathogenesis of cholelithiasis remains incompletely understood, with genetic and environmental factors playing significant roles. This study aimed to explore the etiology of gallstones in pediatric patients. The research focused on children under 18 years of age who had presented at the gastroenterology clinics of Shahid Sadoughi University of Medical Sciences in Yazd with gallstones or sludge. Data including demographic details, laboratory results, sonographic findings, comorbidities, and final diagnoses were collected and analyzed using SPSS 19 software. Results: The study encompassed 63 patients (38 females and 25 males) with an average age of 8.38 years diagnosed with gallstones. The most prevalent clinical symptom observed among children was abdominal pain (74.6%), followed by nausea and vomiting (50.8%). Less frequent symptoms included jaundice (12.7%), weight loss (3.2%), loss of appetite (7.9%), constipation (6.3%), fatty stool (9.5%), and fever (4.8%). Sonographic assessments indicated that most children had one or two stones, with an average stone size of 4.36 millimeters. Laboratory results revealed mean hemoglobin levels of 12.2, AST 58.7, ALT 59.4, ALP 740, total bilirubin 1.16, and direct bilirubin 0.64. Common underlying factors associated with gallstones included prematurity (6.3%), prior ceftriaxone use (4.8%), thalassemia (4.8%), and parenteral nutrition (3.2%). Less prevalent yet notable causes comprised Wilson's disease (1.6%) and cystic fibrosis (1.6%). Discussion and Conclusion: The clinical course of cholelithiasis in children can range from asymptomatic to potentially life-threatening. Therefore, vigilance towards nonspecific symptoms and predisposing factors for gallstones is crucial for prompt diagnosis and appropriate management.

Keywords: Gallstones, pediatric patients, clinical manifestations, etiology

Hematology and Oncology

Gene Therapy in Hematologic and Non-hematologic disorders

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Abstract: Gene therapy is a cutting-edge approach that might potentially improve healthcare in the future. Most studies on gene therapy's many applications in treating inherited genetic illnesses and acquired disorders have been done. Gene treatments can function through two major mechanisms: replacing a disease-causing gene with a healthy copy of the gene and gene editing. In situ (focused on a specific site), ex vivo (cell removal, transport, and injection), and in vivo techniques have potential in the field of gene therapy. Developing a highly effective and secure gene-delivery technology is essential for the success of gene therapy. The target gene was expressed at high levels in various cells according to viral delivery mechanisms. Gene therapies for conditions like Duchenne muscular dystrophy, hemophilia A/B, cerebral adrenoleukodystrophy, β-thalassemia, retinal dystrophy, and spinal muscular atrophy have recently received FDA approval. A few gene therapy treatments based on viral transduction that have been authorized recently are CAR T cell therapy, Zynteglo, Zolgensma, and Roctavian. Safe vectors and novel biotechnologies allow gene therapy medications to be used more effectively in the treatment and prevention of hematologic and non-hematologic diseases in both adults and children. We anticipate more life-saving and life-improving medicines to emerge in the future since there are so many therapies being developed and undergoing clinical trials.

Hematology and Oncology

Novel therapies in pediatric leukemia

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Abstract: Although significant advancements in treatment of pediatric leukemia has occurred during recent years but Novel therapies are emerging, aimed at improving outcomes, reducing side effects, and offering hope for those with resistant or recurrent disease.The most important novel therapies are listed below A:CAR T-Cell Therapy:A type of immunotherapy where a patient's T-cells are genetically engineered to express a receptor specific to cancer cells mostly CD19.This therapy has shown remarkable success, particularly in treating relapsed or refractory B-cell acute lymphoblastic leukemia (ALL). Despite high efficacy, some patients relapse after CAR T-cell therapy. Cytokine release syndrome and neurotoxicity are significant risks, though these are often manageable with proper medical support. B:Bispecific T-Cell Engagers (BiTEs):BiTEs are antibodies engineered to bind both T-cells and cancer cells, bringing them into close proximity to enhance the immune response against the cancer. Blinatumomab, a BiTE that targets CD19, has been approved for use in pediatric ALL. It acts by engaging the patient's T-cells to recognize and destroy leukemia cells. BiTEs are less toxic than some traditional chemotherapies and can be effective in patients who do not respond to other therapie. C:Targeted Therapies:Targeted therapies focus on specific genetic mutations or proteins that drive cancer growth.1:Tyrosine Kinase Inhibitors (TKIs): Used in treating Philadelphia chromosome-positive ALL, TKIs like imatinib and dasatinib have transformed the management of this subtype.2:FLT3 Inhibitors: For acute myeloid leukemia with FLT3 mutations, inhibitors like midostaurin are being explored. D:Monoclonal antibodies:molecules that can target specific antigens on leukemia cells.Inozogamicin, an anti-CD22 antibody-drug conjugate, is used in pediatric ALL. It delivers a cytotoxic drug directly to leukemia cells, minimizing damage to healthy cells. The landscape of pediatric leukemia treatment is rapidly evolving, with these novel therapies offering new hope for patients and their families.There is the potential to significantly improve survival rates and quality of life for children with leukemia

Hematology and Oncology

Other Related Donor for HSCT: An Option For Pediatric Patients With Consanguine Marriage Parents

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Abstract: Introduction: Hematopoietic Stem Cell Transplantation (HSCT), which is more than 50 years old and helps to treat about 70 types of blood diseases, in the first step, requires a full-match donor in terms of HLA system. As well, in a family with consanguineous marriage, the probability of finding a fully compatible donor in relatives will be increases. In countries that consanguineous marriage is legal, a way to find a compatible donor is to search for relatives' members including uncles and aunts who are likely to have the patient's HLA haplotype. Also, in case of consanguine marriage between relative members, this possibility exists for their children as well. Methods: In this study, retrospectively we investigated 500 pediatric patients with different diseases that have been received HSCT more than 24 months that 375 patients with full-match donor have been transplanted. These patients have been compared for overall survival (OS) and GvHD severity in three groups, sibling(N=185), other related(n=110) and unrelated(n=80) full match- donor. The log-rank test was then applied to assess the statistical significance of the differences observed in the Kaplan-Meier survival curves between the groups. The survival analysis was conducted using R version 4.3.2 and the survival package. Results: The 2-year OS for patients with different donor relationship categories consisting of a sibling, other related, and unrelated were 75.7%, 74.8%, and 51.9% respectively. The log-rank test indicated a statistically significant difference in survival between the GvHD-grade groups (p0.001) as well as the donor relationship groups (p0.001). The patients with unrelated donors have a significantly higher hazard ratio of 2.357 (p0.001) compared to the sibling and other related donors after adjusting for GvHD grade. Conclusion: The other related donors can be used as an option in patients who are born in consanguine marriage that help the patient to be transplanted from a relative donor instead of using a unrelative donors, and the possibility of complications after transplantation will be decreased. In fact, it is as if the patient has been transplanted from his sibling.

Hematology and Oncology

Stem cell therapy for managing the graft-versus-host-disease

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Abstract: ***Graft versus host disease (GvHD) represents a potentially life-threatening complication following allogeneic hematopoietic stem cell transplantation, typically managed initially with high-dose corticosteroids. Approximately half of acute GvHD cases do not respond to steroid therapy, and more than 80% of non-responding patients will not survive beyond two years. Chronic GvHD often requires prolonged corticosteroid therapy, which may exhibit limited efficacy and undesirable side effects. There is no established optimal second-line treatment for acute or chronic GvHD; however, mesenchymal stromal cells (MSCs) have shown promise. MSCs create an immunosuppressive and immunoregulatory microenvironment through various mechanisms, including releasing bioactive molecules and transferring cellular components. Numerous clinical trials have evaluated MSC therapy from diverse sources for acute and chronic GvHD, with varying response rates but favorable safety profiles. Heterogeneity among MSC donors, manufacturing processes, dosing regimens, and study designs have contributed to diverse trial outcomes. It is widely acknowledged that variations in MSC properties and functional changes due to extensive in vitro culture expansion pose challenges. Recent advancements in manufacturing techniques hold promise for addressing these issues. Nevertheless, well-designed prospective trials with appropriate statistical power are warranted to elucidate the role of MSC therapy in GvHD management and confirm its efficacy.***

Immunology

A clinical approach to pediatric feeding disorders

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Abstract: BACKGROUND: Pediatric eating, feeding and swallowing difficulties are increasingly prevalent and often co-morbid with other conditions. For children with pediatric feeding disorder (PFD) and their families, it results in a major impairment to family life including: time commitment, financial expense, psychological distress, morbidity and risk of mortality. There is a strong need among families, healthcare, social services, and the education sectors to improve outcomes for this vulnerable population. PFD may present in infants and children at any age and can encompass all aspects of the child's development including feeding and swallowing, oral motor skills, and sensory processing, as well as nutritional requirements, and feeding relationships. PFD commonly develops as a result of a variety of circumstances, often complex, that may occur early in a child's life. Here ,We will describe what is currently regarded as a safe and appropriate approach to the screening, assessment and management of children with pediatric feeding disorder (PFD). As in any clinical situation, and due to the heterogeneous nature of PFD, there are factors that cannot be covered by a single guide. Clinicians need to assess and develop individual treatment plans tailored to the specific needs and circumstances of the child and family. A child's eating, feeding and swallowing abilities are influenced by a range of individual, physiological, social and environmental factors. Intervention and health service provision should be tailored according to the specific needs of the child, their family, and environment. The following key principles should underpin the practice of clinicians throughout the screening, assessment and management of children with PFD. Assessment and management of PFD in children is an ongoing, cyclical process that will show on presentation. The inner quadrants depict the four distinct, but interrelated steps in the Pediatric Feeding Care Cycle. 1-ASSESSMENT • Identify key issues that need addressing for each assessment question 2-DIAGNOSIS • Based on assessment results and key issues, make a diagnosis, severity statement, and prognosis 3-MONITORING AND EVALUATION • Monitor progress and identify key issues that need addressing 4-MANAGEMENT • Based on therapy goals, parental input, and recommended practice, identify management strategies• Deliver care and actions based

Immunology

Advanced Immunotherapies in the Treatment of Autoimmune Diseases in Children: A Review of New Immunotherapy Methods for Diseases such as Juvenile Rheumatoid Arthritis and Type 1 Diabetes

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Abstract: The treatment landscape for autoimmune diseases in children has witnessed significant advancements in recent years, particularly in the realm of immunotherapies. This review aims to provide a comprehensive overview of the latest immunotherapy methods for managing autoimmune conditions such as Juvenile Rheumatoid Arthritis (JRA) and Type 1 Diabetes (T1D) in pediatric patients. The discussion will encompass the emerging immunotherapeutic approaches, including biologics, cell-based therapies, and novel immunomodulatory agents, highlighting their mechanisms of action and potential benefits. Additionally, the review will address the challenges and opportunities associated with the application of these advanced immunotherapies in pediatric autoimmune disease management. By shedding light on the evolving landscape of immunotherapeutic interventions, this review seeks to contribute to the ongoing dialogue surrounding the optimization of treatment strategies for autoimmune diseases in children.

Immunology

An Analysis on Application of Artificial Intelligence Subfields in Pediatrics Nursing Care

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Abstract: In recent years, artificial intelligence has had several applications in the field of pediatrics nursing care. Task automation, remote patient monitoring, and telehealth availability are some examples of artificial intelligence in nursing. Early diagnosis of diseases in children such as autism spectrum disorder is one of the advancements of this science in the field of pediatrics. Artificial intelligence can also automatically identify and correct errors, which helps improve patients' conditions and notify the health care group. AI has six major subsets including Machine Learning (ML) [2], robotics [3], Natural Language Processing (NLP) [4], fuzzy logics [5], expert systems [6], and neural network [7]. Most of studies showed in health care, AI subsets focused on prediction, diagnosis, phenotyping, and risk stratification, respectively. In this paper, we identify and describe which AI subsets has been applied to improvement of pediatrics nursing care. From 132 form distributed and 105 responses submitted, the top six reported (n=105, 79/5%) research areas were as follows: Machine learning (n=50, 47/6%); Robotics (n=28, 26/7%); NLP research (n=14, 13/4%); Expert systems (n=11, 10/4%); and Neural Networks (n=2, 1/9%). This research provides a snapshot of current trends in AI subsets research in pediatrics nursing care and can be used to direct future research efforts. Current research shows Iranian nurses consider machine learning to be the most useful subfield of artificial intelligence in children's medical care. It should be noted that machine learning has the potential to transform pediatric nursing by preventing errors and refining care, and with the use of machine learning tools can reduce the incidence of nursing errors.

Immunology

Cervical Lymphadenitis as the First Presentation of Kawasaki Disease: A Case Report

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Abstract: Background and Objective: While Kawasaki disease (KD) is common in Asia, the incidence of lymph-node-first presentation of Kawasaki disease (NFKD) in infants is unusual. We present the case of a nine-month-old boy with NFKD. Case Report: A previously healthy nine-month-old boy presented with symptoms including fever, tenderness, erythema, and severe edema. Physical examination revealed neck swelling and restricted mobility due to lymph node enlargement on the left side of his neck. The initial diagnosis of antibiotic-resistant bacterial lymphadenitis was made. Additional signs and symptoms included bilateral non-exudative bulbar conjunctivitis, erythema of the oral and pharyngeal mucosa accompanied by a reddened tongue and lips, erythema of the hands and feet, and the progressive development of a maculopapular rash. Laboratory tests revealed elevated levels of C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). An echocardiogram indicated a coronary artery abnormality. The patient was diagnosed with NFKD after meeting the diagnostic criteria for KD. Treatment was initiated with intravenous immune globulin (IVIG), aspirin and methylprednisolone. Following IVIG administration, his fever subsided and his symptoms improved. Conclusions: KD should be considered as a differential diagnosis in febrile infants with cervical adenopathy; patients meeting these criteria should be evaluated for this condition.

Immunology

Complementary and Alternative Medicine use among children; A Cross Sectional Study

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Abstract: Introduction: Recently, the use of complementary and alternative medicine (CAM) methods is increasing in children worldwide. The present study was conducted to determine the prevalence, related factors, types, sources of information, and knowledge of mothers. Methods: This descriptive study was carried out within two months from August-September 2021 through oral interviews and questionnaires with 400 mothers of children referred to a pediatric clinic in Mofid Hospital, Tehran. Results: Of the 400 mothers who were interviewed, 319 (79.8%) believed in alternative medicine whereas 81 (20.3%) did not believe in it. 55.5% of mothers had used CAM as medication at least once for their children during the last year. Most common treatments included medicinal herbs (95%), oil rub (41%), and massage (13.5%). There was a correlation between using CAM for children with the increased level of mother's education and mother being as a housewife. 53.2% of mothers did not inform the pediatrician about using the CAM methods for their children. 91% of mothers received their information from relatives and neighbors, and physicians consist only 11% of the information source. CAM was used most often in children with respiratory tract and gastrointestinal symptoms. Conclusion: Since about one-half of mothers used CAM methods and physicians had the least maternal source of CAM information, it is highly recommended that physicians should learn about CAM methods.

Immunology

Complications of Spider Bites in a Child: A case report

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Abstract: Spider bites may cause severe local and systemic complications, but data regarding its bites in children is limited in Iran and has not been described in the literature to date. In this paper, we report a case of a boy bitten by a spider in Iran. According to the findings, acute persistent pain with local skin lesions appeared on the child's body after a few hours. During the next 24 hours, the skin lesions intensified, and inflammation and redness along with itching occurred around the bite site on the eye of the child. No generalized symptoms occurred. One day after the bites, the patient went to the local public health department, where he was given antihistamines and recommended the application of Calamine lotion to the area of the bite. Clinical signs recovered completely after 5 days of treatment. Physicians and health workers should be aware of the signs and symptoms of spider bites as well as their risks. Also, clinicians and health workers should be immediate management of spider bites to accelerate the treatment process.

Keywords: Spider Bites, Case Report, Iran

Immunology

Drug extravasation in a tertiary referral children hospital: A prospective cohort study

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Abstract: Background: Extravasation injuries are common in pediatric hospitals and can lead to tissue damage and longer hospital stays. However, limited information is available on the extravasation risk factors in children. This study aims to identify the risk factors for such injuries in children receiving intravenous (IV) therapy. Methods: The prospective cohort study was conducted at Imam Hossein Children's Hospital, Isfahan, Iran, from July 2020 to July 2021. The participants included children aged 1 month to 18 years with central/peripheral catheterization who were referred to the pediatric intensive care unit (PICU). Data on factors such as age, gender, duration of hospitalization, catheter specifics, instances of extravasation, types of drugs administered, and treatment methods were documented. Result: This study included 500 children and the median age was 36 months and approximately 56% were boys. Among the participants, the prevalence of extravasation was 9.8% (49 patients). Patients with female gender (p-value = 0.002), central venous catheterization (p-value=0.002), prolonged hospitalization (p-value0.001), decreased consciousness (p-value=0.012), and the use of only fabric adhesive bandages for fixation (p-value=0.004), were significantly prone to a higher risk for extravasation. Conclusion: The study emphasizes the importance of carefully considering extravasation risk factors in healthcare providers to prevent extravasation injuries, especially among children, who are considered vulnerable.

Immunology

Effect of air pollutants on the childhood asthma prevalence in Tehran, Iran

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Abstract: The purpose of this study is to investigate the effect of air pollutants on the childhood asthma prevalence in Tehran, Iran. The standardized questionnaire was fulfilled by one of the parents (6–7 years) or adolescents (13–14 years). The asthma prevalence in ages 6-7 and 13–14 was found to be 8.8% and 17.44%, respectively (P 0.001). A significant positive association was observed between wheezing ever and monoxide carbon (CO) concentration (OR = 1.84, 1.05-3.25 in 13–14 years), 4 to 12 times of wheezing attacks and sulfur dioxide (SO2) concentration (Odds Ratio (OR) = 1.39, 1.04-1.91) and particulate matter less than 2.5 micron (PM2.5) concentration (OR = 1.38, 1.05-1.98 and OR = 1.13, 0.98-1.39 in 6-7 and 13–14 years, respectively), one night per week of sleep disturbances and nitrogen dioxide (NO2) concentration (OR = 1.09, 1.03-1.16 in 6–7 years, respectively). Based on the findings, exposure to some outdoor air pollutants can affect prevalence of asthma symptoms in residence in Tehran. The simultaneous presence of air pollutants has an aggravating effect on the prevalence of asthma symptoms. Therefore, control sources of pollutants for reducing asthma symptoms is suggested.

Keyword: Air Pollutants; Environmental Stresses; Pediatric Asthma.

Immunology

Effect of BMI in outcom of severley ill patients

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Abstract: Introduction: It is still unknown how clinical outcomes and nutritional status at the time of admission to a pediatric intensive care unit relate to one another. We looked at the connection between clinical outcomes in the PICU and nutrition status, as measured by body mass index-for-age (BMI-for-age).Method: Records of 1015 critically ill children and adolescents, ages one month to eighteen, using the WHO growth charts as a reference, the BMI-for-age z-score was computed to ascertain the nutritional status at the time of admission. The participants' BMI-for-age z-score classified them as underweight. -2), normal weight (-2≤BMI-for-age z-score≤+1), and overweight/obese (BMI-for-age z-score +1). The association between malnutrition (being underweight and overweight/obese) and the odds of a prolonged PICU stay (≥7d) and PICU mortality was examined using multivariate odds ratios (OR) with 95 percent confidence intervals (CI). This was done after adjusting for descriptive characteristics, Glasgow Coma Scale score status, fluctuations in serum sodium, and acute kidney injury confoundersResult and Discussion: A total of 1126 patients were recorded during the study period. We excluded 102 patients with a length of stay in the unit of less than 24 hours, 9 patients with insufficient data to calculate a BMI. Finally, 1015 patients (including 441 girls and 574 boys) were entered to our analysis. Based on the BMI for age z-score categories, the proportions of patients with underweight, normal weight, and overweight/obese categories were 34.2% (n=347), 45.8% (n=465), and 20% (n=203) respectively. During the study period, 218 patients with prolonged PICU stay (21.5%) and 57 PICU mortality (5.6%) were recorded. Age-stratified analysis demonstrated that patients with underweight compared to normal weight aged 5-19 years old had higher odds off PICU mortality with corresponding values of OR and 95% CI in the crude model . In addition, no significant association between overweight or obesity (compared to normal nutrition status as the reference) and PICU mortality was found.In conclusion, our findings indicates that critically ill children and adolescents who are underweight have a higher odds of experiencing a prolonged stay n the PICU and PICU mortality compared to their normal-weight counterparts.

Immunology

Effectiveness of treatment with Brivaracetam in children with epilepsy: A systematic review

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Abstract: Brivaracetam is one of the newest drugs used in the treatment of epilepsy, which with very few drug interactions and inhibition of sodium channels, is a suitable option in the treatment of patients in whom previous AEDs have not been effective. The present study is a review conducted by searching the databases of Elsevier, PubMed, Springer, and Wiley, and with the keywords of Refractory Epilepsy, children, Brivaracetam, Seizures, and Efficacy. Evidence Acquisition: A total of 286 epileptic children aged 1 month to 20 years were studied in 8 studies and the findings showed that the use of BRV was associated with improved physical condition and reduced seizures in these children and its therapeutic role in children was significant. Results: The major side effects of this medication included nausea, drowsiness, dizziness, psycho-behavioral disorders, irritability, decreased or increased appetite, exacerbation of seizures. The highest rate of response(50% reduction in seizure frequency) to BRV was observed in studies by McGuire et al and Visa-Reñé et al. with 65% and 63.63%, respectively. On the other hand, the lowest response rate to this drug was seen in the study by Liu et al.; In this study, only 21% of children with epilepsy responded to treatment with BRV medication. Conclusions: In these 8 studies, the maximum follow-up period was 1 year and the minimum was 3 months. In addition to BRV, all children studied in these 8 studies used 1-3 concomitant antiepileptic drugs (AEDs). Despite the effect of this drug in controlling seizures, studies in this area are very limited, conduction of further research in this field is necessary. Also, identifying new drugs and their effectiveness can be an important step towards children's health.

Immunology

Examining the method of prescribing antibiotics in the pediatric department compared to standard methods in hospitals affiliated to the Islamic Azad University of Medical Sciences in Tehran 2021-2022

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Abstract: Background: Antibiotic prescription practices are crucial in pediatric departments to ensure effective treatment while minimizing resistance and side effects. This study examines the method of prescribing antibiotics in the pediatric department compared to standard methods in hospitals affiliated with the Islamic Azad University of Medical Sciences in Tehran during 2021-2022. Method: This cross-sectional descriptive study included 161 pediatric patients from hospitals affiliated with the Islamic Azad University of Medical Sciences in Tehran, selected using a non- random convenience sampling method. Data were collected through patient medical records and questionnaires, covering demographics, indications for antibiotic therapy, appropriateness of the chosen antibiotic, treatment duration, and drug dosage. Data were analyzed using SPSS version 26, with descriptive statistics and Chi-square tests employed to examine associations between variables. Results: The mean age of the patients was 4.85 ± 1.87 years. Of the patients, 42.2% were female and 57.8% male. Indications for antibiotic therapy were present in 60.2% of cases. The appropriateness of the antibiotic choice was confirmed in 65.2% of cases, with 70.2% receiving the correct treatment duration and 75.2% receiving the correct dosage. There were no significant differences based on age or gender regarding the appropriateness of antibiotic prescription, dosage, and treatment duration (p-values 0.05). Conclusion: The study found that antibiotic prescription practices in the pediatric departments of hospitals affiliated with the Islamic Azad University of Medical Sciences generally adhere to standard guidelines. However, some areas require improvement, particularly in ensuring the correct dosage and duration of therapy. Continuous monitoring and education are essential to maintain and improve antibiotic prescription practices.

Keywords: Antibiotic Prescription, Pediatrics, Appropriateness of Antibiotic Therapy, Treatment Duration, Drug Dosage

Immunology

Factor Analysis and Latent Class Analysis of "Premature Infant Pain Profile-Revised" in preterm infants

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Abstract: Introduction: Preterm infants spend the early days of their lives in the Neonatal Intensive Care Units (NICU) in order to survive and receive intensive care, and during hospitalization they may undergo various painful procedures. Among these, the most important thing that is the right of the neonates is the effective management of pain, and the first step in the efficient management of pain, correct assessment with a reliable tool. Therefore, the present study aimed to evaluation of pain intensity in heel stick and related factors using premature infant pain profile- revised in selected hospitals of Esfahan University of Medical Sciences in 2022. Methods: The present study is a cross-sectional (descriptive-analytical) study, which was conducted on preterm infant's ≤37 weeks of gestational age admitted to the NICU of Al-Zahra, Shahid Beheshti and Amin hospitals and their mothers. Sampling in the present study was proportional to size and the highest number of samples was selected from Shahid Beheshti Hospital. Also, the selection of samples in each hospital was done by simple random in daily time blocks. In order to start sampling, written informed consent was first obtained from the parents, then the infant's pain 12 hours after hospitalization and according to the inclusion criteria, using the Premature Infant Pain Profile-Revised (PIPP-R) during the heel stick procedure during routine thyroid screening test. Data analysis was done using SPSS version 23 and Mplus version 8. Results: The results showed that the mean score of pain severity was higher in neonates with a gestational age more than 32 weeks (10.79±2.58). The gender of the majority infants was female (50.7%) and the procedure of venipuncture and heel stick was the most frequent procedure, which had a frequency of 167 and 201, respectively. Exploratory Factor Analysis (EFA) using the Principal Components Analysis (PCA) based on correlation matrix and varimax rotation showed two factors; "Behavioral" (eye squeeze, bro bulge, Nazo-labial furrow, gestational age) and "Physiological" (increased heart rate, decreased O2Sat and baseline behavioral) describes nearly 65% of the variance in the data. Also, the results of the Confirmatory Factor Analysis (CFA) also showed well agreement with the EFA

Immunology

Family centered care improvement in the neonatal intensive care unit: a participatory action research

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Abstract: Introduction: Family-centered care is an ideal standard care method that is emphasized as an important factor in promoting the health of neonates and families. Therefore, it is necessary to conduct research with a participatory action approach to enhance family-centered care in the neonatal intensive care unit. Method: This study is qualitative research based on the Kemmis model, conducted in the NICU of one referral hospital in Tehran. In the quantitative part, the average satisfaction and attitude of mothers towards participation in family-centered care, the average implementation of family-centered care indicators, the weight of discharge time, length of hospitalization, and neonatal infection were assessed before and after the action research. Change programs according to the confirmed problems (inappropriate attitude of the personnel, inappropriate and inadequate empowerment, lack of effective mutual communication between personnel and parents, and inappropriate and insufficient platform for implementing FCC) in three cycles of the proper platform, supervision of implementing FCC and coordination of the personnel and Parents of hospitalized neonates was designed with the participation of all stakeholders. It was implemented and evaluated for 11 months from 2022-2023. To analyze the qualitative and quantitative data, conventional content analysis; descriptive statistics (frequency), and paired t-tests were used respectively. Findings: Examining the experiences of the participants led to the concepts of "mentoring", "empowerment", "supervising" and "coordination" and the presentation of the model of "family-centered care based on mentoring". As in the quantitative findings, the level of satisfaction and attitude of mothers, indicators of family-centered care, the weight of discharge time, the duration of hospitalization, and the infection of neonates improved. and in the qualitative part, the categories "positive attitude of personnel towards FCC", "empowerment of personnel and parents to implement FCC", "Effective communication between personnel and parents" and "Appropriate platform for FCC implementation" were achieved. Conclusion: The operational model of "family-centered care based on mentoring" improved the implementation of FCC; the role of the medical team and parents; and the outcomes of the neonates and parents in the NICU. Therefore, this model is suggested for use in other hospitals to improve the implementation of FCC and the outcomes.

Immunology

Identifying the relationship between knowledge and clinical practice of nurses in pain management in children

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Abstract: Introduction: One of the common problems in children is that the pain cannot be controlled by the nurse. Pain is an unpleasant sensory and emotional state that is often underdiagnosed and undertreated in children. The reasons for this may include nurses' attitudes towards pain management and their lack of knowledge in key areas. The purpose of this review is to identify the relationship between knowledge and clinical practice of nurses in pain management in children. Keywords: pain management, nursing, children Methods: Electronic databases, including PubMed, Wiley, Science Direct, etc., were systematically searched. Findings: Pain relief in children is one of the essential aspects of child care. Nurses play an important role in pediatric pain management. For this reason, the nurse must have basic knowledge to identify the presence of pain in patients, measure its intensity and take the necessary measures for treatment. One of the main goals of nursing care is to relieve children's pain and improve their quality of life. Accurate nurse assessment, appropriate intervention, and assessment of pain relief measures are essential for positive patient outcomes. In one study, five important barriers to pain management were identified: inadequate physician orders, inadequate preoperative orders, insufficient time to pretreat patients before surgery, perceived low priority for pain management by medical staff, and unwillingness of parents to receive medication analgesic. In reviewing the evidence, the level of awareness about pain and its proper management in active pediatric nurses is very poor. Due to these deficiencies, pain in children is inadequately and poorly managed, leading to unnecessary suffering in the pediatric population. Therefore, training may be useful for pediatric nurses in pediatric pain management. Improving education and training of nursings can have a positive impact on pain management in children. In order to develop good knowledge about pediatric chronic pain, physicians, nurses, and other allied health professions must collaborate and recognize each other's specific role in pain education and management. Conclusion: The level of awareness of nurses is an important factor in effective pain management. There is an urgent need for continuing education on pain management aimed at nursing pediatrics.

Immunology

Inflammation and oxidative stress in epileptic children: From molecular mechanisms to clinical application of ketogenic diet

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Abstract: Childhood epilepsy affects up to 1% of children, with 30% of patients resistant to drug treatments. This highlights the need for exploring alternative treatment strategies. One promising option is the ketogenic diet (KD), which has shown potential benefits beyond current antiepileptic drugs. This study aims to examine the effects of KD on inflammation and oxidative stress, proposed mechanisms of neuroprotection, in children with epilepsy. This narrative review utilized the Medline and Google Scholar databases, searching keywords such as epilepsy, drug-resistant epilepsy, children, ketogenic diet, ketone bodies (BHB), PUFA, gut microbiota, inflammation, neuroinflammation, inflammatory markers, adenosine modulation, mitochondrial function, MTOR pathway, Nrf2 pathway, mitochondrial dysfunction, PPARɣ, oxidative stress, and ROS/RNS. Evidence highlights inflammation and oxidative stress as key factors in epilepsy, including genetic cases. The ketogenic diet (KD) effectively mitigates these issues by reducing reactive oxygen and nitrogen species, enhancing antioxidant defenses, improving mitochondrial function, and regulating inflammatory genes. Furthermore, KD lowers pro-inflammatory cytokine and chemokine production by inhibiting NF-κB activation, blocking the NLRP3 inflammasome, increasing brain adenosine levels, inhibiting the mTOR pathway, upregulating PPARɣ expression, and supporting a healthy gut microbiota through the consumption of healthy fats. KD is a promising therapeutic option for epilepsy, especially in drug-resistant cases, because of its targeted approach to oxidative stress and inflammation.

Keywords: diet; ketogenic; epilepsy; inflammation; oxidative stress

Immunology

Investigating the level of asthma management in mothers with children with newly diagnosed asthma

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Abstract: Asthma is one of the most common chronic childhood diseases that causes significant disability, low quality of life in children, mortality and increased financial burden on families and health service providers. Despite scientific and technological advances in the treatment of asthma, 260,000 people die every year due to this disease. If families, especially mothers, be sufficiently self-efficacious about the disease and have access to appropriate health care, they can play an effective role in improving the quality of life of their children, Therefore, the following cross-sectional study was conducted with the aim of Investigating the level of asthma management in mothers with children with newly diagnosed asthma in the selected super-specialized asthma and allergy clinic in Rasht city. The criteria for inclusion in the study include mothers with children aged 1-18 years, according to the mother's statements, the child has no history of other chronic diseases, the mother has no history of taking neuropsychiatric drugs, and is willing to cooperate. The exclusion criterion was mothers' unwillingness to continue cooperation until the end of the study, and the sample size of this study was 120 people. The tools of the current research are demographic information questionnaire and parental asthma self-efficacy management questionnaire.

Immunology

Investigating the validity, reliability and cultural compatibility of parental asthma management questionnaire

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Abstract: Asthma is one of the most common chronic childhood diseases that causes significant disability, mortality and increased financial burden on families and health service providers. the responsibility of managing asthma in children rests with the parents. considering the importance of investigating the asthma management of parents with asthmatic children, the present study was conducted with the aim of assessing the validity, reliability and cultural compatibility of the parental asthma management questionnaire with 120 samples in Rasht. Asthma Self-Efficacy Management Questionnaire was created by Brenda Bursha in 1999 and it includes three parts: the first part is the asthma management barriers questionnaire including 9 items; The second part of asthma self-efficacy belief, which includes two subscales of attacks prevention and parental asthma attacks management with 13 items, and the third part is the belief of efficacy of treatment with 5 items. The questionnaire was translated according to Beaton's method after getting permission from the main author. In this way, two translators with Persian native speaker separately translated the questionnaire into persian and two translations were reviewed and merged in a group of three experts, and again the merged translation was translated into persian by two native english translators separately and in The three-member group of experts was reviewed and integrated, and the integrated English version was sent to the main author of the questionnaire, and after the author's approval, the Persian version was verified and validated.To measure the validity of the questionnaire, a questionnaire was sent to 14 professors. The lowest CVR value was 0.71, which is based on the table Values above 0.51 are acceptable in the 14-member panel. The CVI value was 0.47±0.92, which is appropriate according to the Baltz and Basel method. Also, the Cronbach's alpha coefficient was used to check the reliability And the reliability level was good.

Immunology

Mehri baby hugs

Sanazmollashahi [1] ©, Mehripashafamiyan [2] ℗

[1] medical student
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Abstract: This innovative device is designed for neonatal care units, especially for premature babies who need to be held by their mothers. Recognizing the critical nature of the neonatal period, this device facilitates natural growth and development similar to the womb environment. It works automatically and uses a motorized mechanism that gently rocks the baby, simulating the soothing motion of a cradle. The device has two nests: the first nest, made of fiberglass, acts as a firm base, while the second, made of pure cotton and high-quality viscose fibers, covers the baby comfortably.Additionally, an integrated electric heating mat maintains optimal warmth, adjustable to baby's needs, and a music system plays soothing sounds to promote brain development. It is portable, rechargeable and safe for use in incubators, ensuring the right environment for vulnerable premature babies. By focusing on temperature control and comfort, this invention addresses the unique challenges of premature babies and increases their chances of healthy growth.

Immunology

Mortality status of children aged 1 to 59 months of Tehran University of Medical Sciences

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Abstract: Introduction: One of the important indicators of development and health in countries is the death rate of children under 5 years old. In recent years, the death rate of children under the age of 5 in our country has decreased, but it is still higher than in developing countries. Considering the serious sense of urgency with mobilized resources to progress in reducing the mortality rate, we decided to investigate the factors affecting the mortality of children aged 1-59 months of 1402 Tehran University of Medical Sciences. Method: This research was a descriptive-analytical study that was conducted in 1402. This research was conducted on 216 children aged 1 to 59 months by census method. The tool used in this research was the child mortality checklists of the Ministry of Health, Treatment and Medical Education, which information was collected by an expert and analyzed after data extraction. Findings: The results of this research showed that the number of deaths of children aged 1-59 months was 216.Most of the deaths were at the age of 1-12 months (48.6%) and of these, 65.3% were boys and 34.7% were girls, and 73.1% were urban and 26.9% were rural. And in terms of nationality, 61.1% were Iranian and 38.9% were non-Iranian. The most common causes of death were cardiovascular system diseases (17%), respiratory system diseases (12.5%) and nervous system diseases (8.3%). Conclusion: To reduce the death rate of children and improve the health level of this age group, increase the awareness of their parents by providing them with written training in the field of identifying risk factors and timely referring their children to medical centers to receive services.

Keywords: mortality, children, 1-59 months

Immunology

Navigating the Complexities and Pitfalls of Genetic Testing in Pediatric Diseases

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Abstract: Today, it is well-established that genetic factors are not only causally and/or associated with a variety of diseases but also significantly influence individual responses to pharmacologic agents. This growing understanding heralds a new era in clinical practice, where the integration of genetic information into patient care enables the development of targeted therapies. These personalized treatments aim to minimize adverse and unpredictable clinical outcomes, thereby enhancing therapeutic efficacy and reducing the incidence of medication errors. By tailoring medical interventions based on genetic profiles, clinicians can optimize patient outcomes, marking a pivotal shift towards precision medicine. In this landscape of knowledge, diagnostic genetic testing has become an integral part of the clinical work-up. At first glance, the selection process may appear straightforward, but there are several points of concern that may misguide clinicians and lead to incorrect diagnoses and inappropriate management plans. Therefore, clinicians must also be vigilant about potential traps of genetic tests and risk of misinterpretations of genetic reports. The fact is you can be being caught in this maze because of ordering wrong genetic tests or technical pitfalls associated with genetic tests. Several pitfalls must be skirted in the realm of genetic testing. How can we navigate these challenges, and what is the way forward? Who can provide comprehensive guidance on the nuances and potential pitfalls of each genetic diagnostic test? Who can assist clinicians in making informed decisions about genetic testing? We are currently experiencing a revolution in traditional genetic counseling, driven by high-throughput genetic technologies and the expertise of advanced geneticist teams. To achieve an informed decision-making about genetic tests and the nuances and potential pitfalls of each test, consulting with a geneticist is crucial. A geneticist, with expertise in the technical aspects of available genetic tests, can adeptly manage and interpret test findings.

Keywords: personalized medicine, genetic test results, high throughput genetic technology

Immunology

Prevalence of anaphylaxis in patients referred to the emergency department of hospitals under the auspices of Zahedan University of Medical Sciences in 2023

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Abstract: Introduction: Considering the high risks of new anaphylactic episodes, the epidemiological investigation of the factors leading to anaphylaxis is very important. Due to the lack of a similar study in Zahedan, this study was conducted with the aim of determining the clinical manifestations, causes, and how to manage and treat patients with anaphylaxis referred to the emergency department of Ali Bin Abi Taleb Hospital in Zahedan. Materials and methods: In this cross-sectional study, 78 patients with anaphylaxis referred to the emergency department of hospitals covered by Zahedan University of Medical Sciences in 1401 were examined. The data collection tool in this study was an information form including demographic variables and variables related to anaphylaxis conditions. The data was analyzed in SPSS version 26. Results: The average age of the patients was 26.6 ± 17.6 years. 41 people (52.6%) were women and 37 people (47.4%) were men. In most of the cases, i.e. 49 people (62.8%), anaphylaxis occurred at home. In terms of the cause, the highest frequency was related to medicine and insect bites in 24 people (32.9%). The most common symptom in patients was skin manifestations in 65 people (83.3%). 33% (42.3%) of the studied subjects recovered completely in the emergency department, and there was no report of death in the studied cases. Conclusion: Most cases of anaphylactic reaction occur at home and with insect bites, and people should be given the necessary information in this regard. All patients with skin manifestations and sudden discharge, including redness, itching, hives, and shortness of breath, should be evaluated for the possibility of an anaphylactic reaction, so that, if necessary, appropriate therapeutic interventions with epinephrine priority should be used in these patients. It is also suggested to carry out comprehensive and detailed studies with the aim of investigating regional factors that cause anaphylactic reactions. Keywords: anaphylaxis, anaphylactic reaction, emergency

Immunology

Prevalence of Long QT Syndrome in Children with Congenital Sensory-Neural Deafness

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Abstract: Background & objectives: Long QT syndrome (LQTS), congenital or acquired disorder, is characterized by a prolonged QT interval associated with syncope attacks and sudden death .Jervell and Lange-Nielsen first described LQTS in conjunction with sensory-neural congenital deafness. In long QT syndrome, the modified QT interval is greater than 440 msec and 460 msec men and in women respectively. Acquired forms of prolonged QT are the consequence of metabolic disorders and various medications .Since the number of people with congenital deafness in the society is not low and studies in Iran about this syndrome, especially in children are limited, therefore identification of these patients by performing an ECG and simple measures, may be useful in reducing sudden death among these patients. The aim of this study was to determine the prevalence of prolonged QT syndrome in children with congenital sensory-neural deafness which undergoing cochlear implant surgery. Methods: In this study, a single-center cross-sectional observational study, all children with congenital deafness which undergoing cochlear plantation at northwest of Iran were enrolled. Patients' heart rate and QT interval were calculated using Bazett's formula. The association of long QTc with syncope and sudden death, evaluated by using Schwartz's criteria in children with long QT syndrome. Results: Of the 357 studied patients, 204 (57.1%) were male and 153 (42.9%) were female. The mean±SD of the current age of the patients was 7.15±2.93 years with a mean of 7 years. The mean±SD of QT interval in the studied patients was 291.01±26.89 ms with a mean of 280 msec. the mean±SD of the QTc interval in the studied patients was 400.52±25.74 ms with a median of 404 ms. Frequency of Long QTc in the studied patients was 17 cases (4.8%) and long QT syndrome was 5 cases (1.4 %). Conclusion: The prevalence of prolonged QT syndrome in patients with congenital deafness in northwest of Iran in 2019 was 4.8%, and 2 cases had syncope and 3 cases had sudden death.

Keywords: Long QT Syndrome; Congenital Deafness; Children; Iran

Immunology

Systematic Review on the Exposure to Pesticides and Children Chronic Diseases: Leukemia, Brain Tumor, Autism and Asthma

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Abstract: Introduction: Children are more susceptible to the pesticides due to not fully develop their metabolic processes, more sensitive organ systems and not able to detoxify chemicals. This systematic review aimed to determine the association between exposures to pesticides and the risk of children chronic diseases including leukemia, brain tumor, autism and asthma. Methods: The electronic databases including Google Scholar, PubMed, Scopus, Science Direct and Web of Science were searched with the following keywords for relevant literatures up to 2024: "Pesticide Exposure" AND "Children" AND "Autism" AND "Asthma". Finally, papers that provided the association between pesticide exposure and children chronic diseases were included, screened and their results were extracted using data extraction sheets. Results: Totally, 64 papers were included in this systematic review. The number of papers in studied chronic diseases included leukemia (n=11), brain tumor (n=4), autism (n=24) and asthma (n=25) that met the inclusion/exclusion criteria. Most studies indicated that children exposure to the pesticides can increase the risk of children chronic diseases such as leukemia, brain tumor, autism and asthma. In addition, the findings indicated that, over than 30% of the global burden of children diseases is due to the environmental factors, including pesticides. According to the included studies, results can provid valuable evidences supporting the strong association between children chronic diseases such as leukemia, brain tumor, autism and asthma with exposure to the pesticides. Conclusion: Due to positive association between pesticides exposure and risk of children chronic diseases, public health policies should be applying the preventive strategies to minimize children exposure to pesticides in environment.

Keywords: Pesticides exposure, Children chronic diseases, Leukemia, Brain Tumor, Autism, Asthma.

Immunology

The effect of a probiotic containing lactobacillus reuteri on interleukin 13 and the respiratory function of patients with asthma

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Abstract: Introduction: Probiotics can mitigate clinical symptoms in asthma-suffering patients by inhibiting inflammation in the airways. In this regard, the present study was conducted to examine the effects of probiotics containing lactobacillus reuteri on interleukin 13 and the pulmonary function of patients with asthma. Method: In this double-blind clinical trial, 68 patients with moderate asthma were selected and divided into intervention and control group. In the next step, the intervention group underwent routine treatment as well as therapeutic intervention with 5 drops of lactobacillus reuteri per day for two months. During the same period, the control group underwent routine treatment but took placebos as well. Both groups took some tests before and after intervention for their forced expiratory volume (FEV1), forced vital capacity (FVC), FEV1/FVC ratio, peak expiratory flow (PEF), interleukin 13 (IL-13), blood eosinophil counts, and asthma control test (ACT). Results: Before intervention, there was no significant difference in terms of FEV1, FVC, FEV1/FVC ratio, PEF, IL-13, blood eosinophil counts, and asthma control test between the two groups (P 0.05). However, the mean scores of the two groups emerged to be significantly different for FEV1,FVC, FEV1/FVC ratio and asthma control test (P 0.05). In contrast, the two groups were not significantly different in terms of the mean values for PEF, eosinophil, and interleukin 13 (P 0.05). Conclusion: According to the results of this study, probiotics containing lactobacillus reuteri can lower the level of interleukin 13 and improve the pulmonary function in patients with asthma. Accordingly, those probiotics are recommended to be used as an additive therapy in the main therapeutic protocol of asthma. Keywords: Asthma, Probiotic, Lactobacillus reuteri

Immunology

The effect of expiratory volume techniques to oxygenation and expiratory volume in premature infants with respiratoy distress syndrome

Neda Maddadi Zadeh[1] © ℗

[1] **physiotherapist**

Abstract: Introduction (Background & Objectives) : Chest physiotherapy in premature infants reduces respiratory work, improving oxygenation, and increasing expiration volume. Therefore, this study aimed to determine the effect of expiratory volume techniques to oxygenation and expiratory volume in premature infants with respiratory distress syndrome.I Material & Methods : in this randomized clinical trial, 32 premature infants with respiratory distress syndrome were included. The subjects were randomly divided into a routine chest physiotherapy group, and expiratory volume techniques group. Intervention was conducted two times per day for five days. Overall, FiO2, PEEP, PIP, MAP, respiratory rate, O2sat, and expiratory volume were evaluated before and after intervention with the ventilator system. Data were analyzed with the paired sample and independent t-tests (p0.05). Results : In the expiratory volume techniques group, the overall expiratory volume changed from 8.05± 3.1 to17.50±7.3, the FiO2 significantly changed from 71.7±22.0 to 42.0±11.8, the PEEP significantly changed from 6.20±0.5 to 5.80±0.4, the PIP significantly changed from 15.40±3.03 to 11.60±2.9, and the MAP significantly changed from 8.6±1.4 to 7.7±0.9 (p0.05). There is no significant difference in the expiratory volume and FiO2 between routine chest physiotherapy and expiratory volume techniques groups (p0.05). Conclusion : According to the results of the study, the positive effects of expiratory volume techniques to oxygenation were shown, so we suggest that in addition to routine chest physiotherapy, expiratory volume techniques should also be considered in infants with respiratory distress syndrome.

Keywords : Chest physiotherapy, expiratory volume techniques

Immunology

The effect of happiness training on happiness, self-esteem, perceived stress and performance in the mothers of children with cleft lip and palate

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Abstract: Abstract Background: Facial deformities and aesthetic and functional anomaly in children cause an actual tension for family. Parents' problems in coping with child's anomaly make them troubled and bring about a much more severe response in them. Therefore, the present study was conducted to study the effect of happiness training on happiness in the mothers of children with cleft lip and palate. Methods: In this semi-experimental study, 64 mothers of children with cleft lip and palate were randomly assigned to two groups of intervention and control based on random number table. Then, the program of happiness training was implemented within 10 sessions of two hours each and the questionnaires of demographics and happiness, self-esteem, perceived stress and performance were filled out prior to and two months after the last session. The data were analyzed by independent t-test, paired t-test, and Pearson correlation in SPSS 20. Findings: Independent t-test indicated a significant difference in happiness, self-esteem, perceived stress and performance mean score after training in intervention and control groups (p0.05). Also paired t-test indicated a significant difference in happiness, self-esteem, perceived stress and performance mean score between before and after training in intervention group, but the difference was not statistically significant for control group (p0.05). Conclusion: In light of the efficacy of happiness program on promotion of happiness in the mothers of children with cleft lip and palate, this model is recommended as a healthcare intervention to decrease mental stresses of mothers at delivery of an infant with cleft lip and palate.

Keywords: Happiness training, performance, self-esteem, perceived stress, happiness, cleft lip and palate

Immunology

The effect of information therapy programs of smoking cessation with nicotine replacements on asthmatic Pediatrics

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Abstract: Objectives: The effects of passive smoking on The respiratory system of babies and children is known. This study aimed to investigate the positive effect of information therapy programs of parental smoking cessation with nicotine replacement on asthmatic pediatrics' health-related quality of life in Pediatrics Medical Center (PMC). Methods: A case-control study was conducted during one year period on the 100 asthmatic patients with smoking parents who referred to Allergy department of PMC. Half of them received nicotine replacements. Demographic information, including; daily cigarette consumption assessed by a questionnaire. Healthy children with same age and sex were entered to the study as the control group. Statistical analysis was performed to calculate odds ratio. HRQoL was measured twice by the beginning of the study and after three months using standard versions of Short Form (SF-12) in parents and St George's Respiratory Questionnaire (SGRQ) in children. Results: The mean score in asthmatic children who their parents get intervention were lower than asthmatic children who their parents didn't get intervention. This means that the quality of the life in asthmatic children who their parents get intervention become better ($p = 0.03$). The results showed that consumption of nicotine gum can improve some aspects of Health-Related Quality of Life in parents and children based on SF-12 and SGRQ, respectively. Physical function ($p = 0.007$) and School function($p = 0.002$) were two components that the intervention have the most effect on them. Conclusion: The main measure in clinical and research evaluations and quality of life clearly shows lower scores in smoking parents' children compared to non-smokers. Using nicotine gum by parents can be associated with improvement of HRQoL in them (SF-12) and their children (SGRQ).

Immunology

The Impact of an Educational Robotic Game Kit on Anxiety Levels in Hospitalized Preschool Children in Pediatric Hematology and Oncology Wards: A Non-Randomized Controlled Study

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Abstract: Background & Aim: Hospital stays can be daunting for children, leading to increased anxiety. To alleviate this distress, engaging in games and activities has been recommended. This study aimed to evaluate the effects of an educational robotic game kit (ERGK) on anxiety levels in preschoolers during hospitalization, exploring its potential as an effective intervention to enhance their emotional well-being. Methods & Materials: This non-randomized controlled clinical trial was conducted at a pediatric hospital in Iran from March to July 2022, involving 60 children divided into intervention (n=30) and control (n=30) groups through convenience sampling in Shahid Motahari Hospital affiliated Urmia University of Medical Sciences, Iran. Participants were children aged 3-6 years with ongoing hematological or oncological treatments who could comprehend simple instructions and communicate effectively. Exclusion criteria included children facing severe medical complications, diagnosed psychiatric disorders, unstable health conditions, recent involvement in similar studies, or those with language barriers affecting understanding. The ERGK intervention consisted of eight sessions held during at least seven consecutive days of hospitalization. Data were gathered using a demographic information form and the Pediatric Anxiety Scale (PAS). The analysis included descriptive statistics, chi-square tests, t-tests, one-way ANCOVA, and multivariate analysis of covariance (MANCOVA). Results: The demographic characteristics of both groups were found to be similar, with a p-value greater than 0.05 indicating no statistical significance. Before the intervention began, the intervention group had a mean PAS score of 46.33±15.81, while the control group had a mean score of 37.24±19.65, showing no significant difference (p=0.055). However, after the intervention, the intervention group reported a significantly reduced mean PAS score compared to the control group (p=0.030). Furthermore, the ERGK successfully alleviated anxiety related to separation and fears regarding physical injury, showing significance at p=0.034. Conclusion: The results suggest that RGKs may significantly impact pediatric hospital care. By incorporating ERGK-based strategies, healthcare providers can potentially elevate the quality of care for children who undergo the emotional strain of hospitalization. This approach could lead to better psychological outcomes, ultimately promoting the overall well-being of young patients during their hospital stays.

Immunology

The initial occurrence of GM2 gangliosidoses with symptoms of head dropping: A report of rare case

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Abstract: Background: GM2 gangliosidoses are a group of genetic disorders that are autosomal recessive. GM2 gangliosidosis is a condition that happens when there is too much ganglioside GM2 in the brain cells. GM2-activator protein deficiency is a rare type of GM2 gangliosidosis caused by a change in the GM2A gene. Less than ten confirmed cases of GM2 gangliosidosis (AB variant) exist. Case presentation: We are presenting the case of a young boy who exhibited hypotonicity and head dropping following a fever at 12 months old. It is important to consider GM2 Activator protein deficiency as a possible cause for children displaying symptoms of neuroregression and cherry red spots, but without hepatosplenomegaly. This condition can be misdiagnosed as Classical Tay-Sachs disease and should be included in the list of differential diagnoses. Conclusions: Tay-Sachs disease is a genetic disorder that primarily affects children and causes the progressive deterioration of their nervous system. Early detection and genetic counseling are crucial for prevention and support.

Immunology

Virtual Support for Breastfeeding in Premature Infants: Insights from Nurses' Experiences

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Abstract: The post-discharge period is critical for the development of breastfeeding in mothers of premature infants. Virtual consultation has emerged as a valuable tool in providing continuous support. This study aims to explore nurses' experiences with the development of breastfeeding in mothers of premature infants through virtual consultation during the post-discharge period. This qualitative content analysis was conducted by fifteen nurses with master's degrees, each maintaining educational pages on social networks, who were purposively sampled for this study. Data were collected through semi-structured interviews conducted over five months, from April to June 2024. The main interview question was: Can you describe your overall experience with providing virtual breastfeeding support to mothers of premature infants? After data saturation, the analysis process was performed according to Grenheim and Lundman's analytical method Three major themes emerged from the analysis, including Benefits of Virtual Support, Barriers to Effective Consultation and The Emotional Journey of Mothers. The findings highlighted that nurses emphasised the accessibility, convenience, and continuous nature of virtual consultations as significant benefits. They emphasized that virtual support allowed for timely intervention and consistent guidance, which is crucial for the success of breastfeeding in premature infants. Despite its benefits, several barriers were identified, including technological issues, lack of personal touch, and difficulties in building rapport with mothers. Nurses also mentioned the challenges related to the varying levels of digital literacy among mothers. Nurses observed that virtual consultations provided a platform for mothers to express their anxieties and receive emotional support. However, they also noted the emotional strain on mothers, who often felt overwhelmed by the dual challenge of caring for a premature infant and mastering breastfeeding. Virtual consultation plays a pivotal role in supporting breastfeeding among mothers of premature infants during the post-discharge period. Addressing technological and emotional barriers can enhance the effectiveness of virtual support, ultimately benefiting both mothers and their infants.

Infectious

Azithromycin in the Management of Pediatric Otitis Media Insights from: A Systematic Review

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Abstract: Introduction: Otitis media is a common pediatric condition that can lead to serious complications. Worldwide Otitis affects about 11% of people annually Given the increasing antibiotic resistance, it is crucial to assess the efficacy and safety of various treatments, including azithromycin. This study aimed to systematically review the role of azithromycin in the management of pediatric otitis media Methods and Materials:A systematic review was conducted independently by two researchers based on the PICO criteria and aligned with the research objectives. The review process utilized the PRISMA checklist and involved searches across databases including PubMed, CINAHL, Medline, Web of Science, SID, and the Google Scholar search engine. Boolean operators and MESH keywords such as "Otitis Media," "Children," and "Azithromycin" were employed to refine the search. The time frame for the search was set between 2018 and 2023. Following the application of inclusion and exclusion criteria, the quality of the selected articles was assessed using the JADAD scale Results: Azithromycin demonstrated favorable efficacy in cases where first-line treatments, such as amoxicillin, failed or when drug sensitivity was an issue. Also, the incidence of diarrhea in azithromycin users is lower than other antibiotics. However, prolonged use of azithromycin was associated with an increased risk of antibiotic resistance. Conclusion and Discussion: Azithromycin may serve as an alternative therapeutic option in managing pediatric otitis media but should be prescribed with caution under strict medical supervision to prevent the development of antibiotic resistance. Further research is recommended to more precisely determine the benefits and drawbacks of this medication. Key words: Otitis Media, Children, Azithromycin

Infectious

Protecting Our Future: The Vital Role of Vaccination in Preventing Pediatric Infectious Diseases

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Abstract: The Pediatric Congress is proud to present a symposium on "Protecting Our Future: The Vital Role of Vaccination in Preventing Pediatric Infectious Diseases." This symposium aims to highlight the critical importance of vaccination in safeguarding the health and well-being of children. With a focus on the prevention of pediatric infectious diseases, the symposium will feature discussions on the latest advancements in vaccine development, the impact of vaccination on public health, and strategies to overcome vaccine hesitancy. Experts in the field will share insights on the role of vaccination in reducing the burden of infectious diseases, promoting herd immunity, and ensuring a healthy future for our children. Through this symposium, we aim to foster a deeper understanding of the significance of vaccination and inspire collaborative efforts to protect the most vulnerable members of our society.

Infectious

Study on knowledge and attitude of mothers toward fever management of under 7 years' old children

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Abstract: Introduction Fever is the most common complaint and manifestation, especially of viral diseases in children. Correctly knowing the cause of fever, and how to manage it, is one of the most basic concerns of disease control, especially among families. Therefore, elevating knowledge and correcting the attitude of Parents about fever management will be very helpful in reducing worries and damage caused by fever. method This study included 300 mothers with children aged 0-7 years who visited the emergency room of Koh Kemari Hospital or the specialized clinic of the hospital during a period of 12 months (from May 1402 to May 1403). The data was collected using a questionnaire containing 32 open and multiple-choice questions and was statistically analyzed using SPSS software. Results: In this study, 59 mothers (19.6%), considered body temperature less than 37 degrees Celsius as fever. The mean score of mothers' knowledge about children's pain management was 9.7±2.1 (the complete score was 15). 240 people (80%) experienced fear and worry when their child had a fever. The most basic cause of their fear (83%) is convulsions caused by fever. Mothers with university education have stated less fear than mothers with lower education (P=0.001). 267 of the mothers (89%) stated that as soon as the temperature rises, they immediately start treatment with acetaminophen, and 147 of them (49%) admitted that they immediately start antibiotic treatment at home when the fever starts. 132 (44%) did not use the correct dose of acetaminophen. Discussion: Parents strong concern about the harmful effects of fever affected the use of high-dose antipyretic drugs to reduce fever or the indiscriminate and arbitrary use of antibiotics during pediatric fever. Therefore, educational interventions are needed to change mothers' attitudes. Reducing worries and correct management of fever patients can be effective.

key word: fever management, Knowledge, attitude, mother

Neonatology

Comparison the effect of maternal breast milk odor, facilitated tucking and non-nutritive sucking applied to preterm neonates during heel stick on pain and physiological parameters: A randomized controlled trial.

Negarin Akbari [1] © ℗

[1] **Presenter**

Abstract: Background:While nonpharmacological approaches prove effective in mitigating heel stick-induced pain, only a few studies have delved into this aspect.None of the existing studies have simultaneously applied these nonpharmacological methods to alleviate heel stick pain.The objective of this study was to compare the effects of maternal breast milk odor, facilitated tucking, and non-nutritive sucking applied to preterm neonates before, during and after heel stick procedures on pain and physiological parameters. Methods: The study was a randomized controlled trial. 144 preterm infants (gestational age 31–36 weeks) requiring heel sticks were randomly assigned to four treatment conditions:control,non-nutritive sucking, facilitated tucking, and maternal breast milk odor.Pain and physiological parameters were measured by watching video recordings of infants undergoing heel-stick procedures and scoring pain at 1-min intervals with the Premature Infant Pain Profile and Data Evaluation Form.Data were collected over eight phases:baseline, 1,2,3 minutes before,during and 1,2 and 3 minutes after the heel stick. Results:There was a significant main effect of the intervention groups for physiological parameters and pain(heart rate:F=7.5,p0.001; oxygen saturation:F =16.39,p0.001; respiratory rate: F =6.56,p0.001;pain: F = 61.45, p0.001). Neonates receiving facilitated tucking had significantly lower pain profile scores during heel stick (6.61±1.44) than control (14.22±3.61), maternal breast milk odor (12.22± 3.08), non-nutritive sucking (10.41 ± 1.71) (p0.001). Conclusion:The facilitated tucking method is clinically better stability of physiological parameters and pain relief option for the heel stick.

Keywords:Maternal breast milk odor,Facilitated tucking,Non-nutritive sucking,Preterm neonates,Pain,Physiological parameters.

Neonatology

New NRP changes compared to the previous edition

Homayoon Bana Derakhshan [1] © ℗

[1] **Assistant Professor of Shahid Beheshti University of Medical Sciences**

Abstract: 1- The question of how many babies are on the way has been removed, and instead, the time management of the umbilical cord clamp has been taken into consideration. 2- What is the possible estimate of gestational age? 3- Is the amniotic fluid clear? 4- How many embryos does a pregnancy have? 5- Are there other risk factors? 2- In the initial steps of the changes given in the new NRP: heating, drying, stimulation, airway position, suction if needed (suction always precedes stimulation.) 3- Cardiac monitoring: whenever the work comes to an alternative airway, cardiac monitoring is recommended. 4- Normal volume of saline after epinephrine: In the new NRP, it is stated that regardless of GA, after intravenous or intraosseous epinephrine, 3 cc of normal saline should be flushed (before it was half to 1 cc). Dose of epinephrine: Intravenous is 0.2 ml/kg of a solution of one in ten thousand (before it was 0.1 to 0.3). Intratracheal: 1 ml/kg of a 1 in 1000 solution (previously it was half to 1) Time to cut off resuscitation: Stop resuscitation: stop resuscitation after 20 minutes of attempts and no response (the previous version was 10 minutes)

Neonatology

The epidemiologic study of prevalence and Associated Risk Factors of Congenital Heart Diseases among Neonates of Shahid Sadoughi Hospital, Yazd, Iran from 2022 to 2023: A Cross-Sectional Study

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Abstract: Background: Congenital heart defects (CHD) are one of the most common congenital malformations seen in newborns, resulting in structural and functional abnormalities of the heart. This study examined the prevalence of CHD and its different subtypes among newborns admitted to Shahid Sadoughi Hospital in Yazd, Iran, from 2022 to 2023. The study also aimed to assess the presence of risk factors in newborns diagnosed with CHD. Methods: This was a descriptive cross-sectional study, including all newborns diagnosed with CHD. Echocardiography was performed to classify the specific type of CHD, and a questionnaire was administered to parents of newborns with CHD to identify potential risk factors. Results: Of 1149 infants admitted to the hospital during one year, 29 (2.52%) were diagnosed with CHD and 9 of them died of the disease. The incidence of congenital heart defect and mortality were 2.5% and 0.78%, respectively. The most common defect was atrial septal defect (ASD), affecting 19 infants (65.5% of cases), and 15 infants had multiple defects in the congenital heart defect subtypes. Conclusion: Our study showed that the prevalence of congenital heart disease in newborns in our area was 2.52%, with a mortality rate of 0.78% over a one-year period. More than half of the congenital heart defect cases were detected in children of consanguineous couples, suggesting a potential risk factor in the Yazd community, possibly related to the prevalent of consanguineous marriage among the Yazd people.

Nephrology

Assessing difference between the number of Tcell CD3-20+ by flowcytometry in idiopathic nephrotic syndrome patients in relapse and remission period: a pilot study

fatemeh marzani [1] © ℗

[1] **aliasghar clinical research development center, department of Pediatrics, School of Medicine, Iran University of Medical Sciences, Tehran, Iran**

Abstract: Abstract Background: The pathogenesis of idiopathic nephrotic syndrome remains unclear. from years ago INS is assumed a T-cell-mediated disease; cytokines secreted from Th2 cells, reduced Tregs which lead to activation of Teff cells result into increase permeability of glomerulus and NS. The remedial influence of B-cell depletion by anti-CD20 factors suggests a role of B cells in the pathogenesis of the disease. but the exact mechanisms of action of these medications are unknown.one of these mechanisms is the effect on CD3-20+ Tcell. Methods: a total of 10 patients in relapse of idiopathic nephrotic syndrome and 10 patients in remission were included in the study. the number of CD3-20+ T cells was calculated by flow cytometry in these two groups. Results: in relapse group we found on average 1.10% of T cells were CD3-20+ cells and in remission group the same data was 0.41% Conclusions: we found that the mean number of CD3-20+ Tcells in remission group was lower than the relaps group but there wasn't any statistical difference between two groups.

Keywords: CD3-20+ Tcell,Idiopathic nephrotic syndrom,flow cytometry

Nephrology

Emphysematous Pyelonephritis in a Diabetic Child: A Case Report and Review of Literature

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Abstract: Introduction: Emphysematous pyelonephritis (EPN) is a life-threatening condition characterized by gas accumulation within the kidney and surrounding tissues, often leading to necrosis. While commonly reported in adults, EPN is extremely rare in children, with only a few cases documented in the literature. We present the case of a child with EPN initially admitted with a diagnosis of diabetic ketoacidosis (DKA). Case presentation: An 11-year-old girl with poorly controlled type 1 diabetes was referred to the Children's Medical Center with a CT scan confirming emphysematous pyelonephritis. The patient initially presented with abdominal and flank pain, fever, and fatigue, and was initially diagnosed with DKA. However, further evaluation ruled out DKA, and active urine analysis indicated a kidney pathology. Imaging confirmed the presence of gas in the pyelocaliceal system. The patient was treated with intravenous meropenem and vancomycin for seven days and was discharged with improved health and normal kidney function. Conclusion: This case highlights the importance of considering emphysematous pyelonephritis in children, particularly those with underlying conditions like diabetes, even when initial presentation suggests other diagnoses such as diabetic ketoacidosis.

Keywords: Emphysematous pyelonephritis, Diabetes Mellitus, Child

Nephrology

gitelman syndrome: a case report

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Abstract: Gitelman syndrome : a case report abstract Gitelman syndrome is a rare salt-losing tubulopathy due to mutations in the thiazide-sensitive Na-Cl cotransporter gene. It results to hypokalemic metabolic alkalosis, hypomagnesemia, and hypocalciuria In this case report, we describe a 6-years old female who presented with URI symptoms and frequent vomiting from 2-3 days before , at the time of blood sampling she experienced an episode of carpopedal spasm. She had a history of abdominal pain, morning nausea, fatigue and weakness from 2.5 years before. Additional biochemical studies showed mild hypokalemia and hypomagnesemia and acute respiratory alkalosis. Due to persistent hypokalemia, genetic test and WES was done and the result was SCL12A3 mutation. a pathogenic variant in homozygosity, which confirmed the Gitelman syndrome diagnosis was found. Treatment with potassium chloride and magnesium chloride oral supplementation was started.

Keywords: Gitelman syndrome, Hypokalemia, Hypomagnesemia, Hypocalciuria, SCL12A3 mutation

Nephrology

Systemic Lupus Erythematosus Presenting as Hemolytic Uremic Syndrome: A Case Report

Fatemeh Ghanbarian [1] ℗, Mastaneh Moghtaderi [1], Behnaz Bazargani [1] ©

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Abstract: Background: Systemic lupus erythematosus (SLE) is a rare autoimmune disorder in children and can present with atypical clinical features. Hemolytic uremic syndrome (HUS) is characterized by microangiopathic hemolytic anemia, thrombocytopenia, and renal impairment. This case report describes an unusual presentation of SLE mimicking HUS in a pediatric patient. Case Presentation: A 13-year-old boy presented with diarrhea and vomiting for 4 days, along with symptoms of headache, chest pain, shortness of breath, and hematuria. He had no oliguria or edema, and his blood pressure was normal. Initial laboratory findings showed bicytopenia with a white blood cell count (WBC) of 6200, hemoglobin (Hb) of 7.6 g/dL, platelets (Plt) of 11,000, blood urea nitrogen (BUN) of 28 mg/dL, creatinine (Cr) of 1 mg/dL, lactate dehydrogenase (LDH) of 3830 U/L, uric acid of 6.6 mg/dL, and glucose-6-phosphate dehydrogenase (G6PD) of 20 U/g Hb. A bone marrow aspiration was performed due to the bicytopenia, and the findings were suggestive of HUS. Despite initial treatment for HUS, the patient developed evening fevers, lethargy, vomiting, and worsening leukopenia and lymphopenia. Thrombocytopenia persisted for two weeks. Additional tests showed elevated ferritin (3980 ng/mL) and D-dimer (5744 ng/mL), suggestive of a cytokine storm. The patient was treated with corticosteroids and intravenous immunoglobulin (IVIG), and tests for lupus were performed. A diagnosis of SLE was confirmed, and treatment for lupus was initiated. The patient's clinical symptoms and laboratory abnormalities improved with ongoing treatment and follow-up. Conclusion: This case underscores the importance of considering systemic lupus erythematosus in pediatric patients with hemolytic uremic syndrome who present with atypical symptoms and laboratory findings. Early diagnosis and appropriate management of SLE are crucial for improving patient outcomes. Keywords: Systemic lupus erythematosus, hemolytic uremic syndrome, pediatric, atypical presentation, cytokine storm.

Nephrology

Urinary Interleukin 13 Level in Steroid Sensitive and Resistant Nephrotic Syndrome: A Cross-Sectional Single Center Study

Noosha Samieefar [1] ℗, Behnam Ermian [2], Mastaneh Moghtaderi [1] ©

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Abstract: Introduction: Nephrotic syndrome, the most common glomerular disease in pediatric population, is classified into two groups of steroid sensitive (SSNS) and resistant (SSRS). There is growing evidence on the role of T cells cytokines, including Interleukin-13, in pathophysiology of nephrotic syndrome and steroid response. This study aims to evaluate the diagnostic power of urinary IL-13 in distinguishing between these two type. Method: This study was a cross-sectional study conducted at Children's Medical Center Hospitals. All children (1 to 15 years) referred from January 2021 to January 2022 diagnosed with nephrotic syndrome were included (Census). Urine samples were collected during the initial phase or relapse of nephrotic syndrome, before the initiation of steroid or alternative treatments. Interleukin-13 levels in the urine were measured using the ELISA method. Data were then entered into statistical software for analysis. The collected data were analyzed using SPSS Statistics version 27. Cross-tabulation and Fisher's Exact Test were used to examine the relationship between qualitative variables and to determine the P-value. McNemar's test was used to evaluate the differences between SSNS and SRNS groups. A P-value of 0.05 was considered statistically significant. Result: In this study, 83 cases of nephrotic syndrome were enrolled, of whom 31 (37%) were girls and 53 (63%) were boys. The age of the patients ranged from 3 to 8 years (Mean=4.46, SD = 1.307). Out of the 83 cases, 62 (73.8%) were identified as SSNS and 20 (23.8%) as SRNS. There was no report regarding one case. There was no significant difference between the urinary Interleukin-13 levels between SSNS and SRNS groups (P-value: 0.84). Sex (P-value: 0.598) and age (P-value: 0.704) also had no association with Interleukin-13 levels. Conclusion: We found no significant difference in IL-13 levels in two groups of response to corticosteroid therapy. Further studies in larger population are recommended to establish potential diagnostic biomarker to predict response to therapy.

Neurology and Psychology and Physical Medicine and Rehabilitation

A rare case of Syntelencephaly in a child with developmental delay

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Abstract: Syntelencephaly is middle interhemispheric variant of Holoprosencephaly which can present with seizure , spasticity and developmental delay. Classic MRI findings are single ventricular cavity , mid-dorsal fused cortex and azygous ACA. Here we introduce A 5 year old boy with developmental delay who has been referred to radiology department for more evaluation with MRI. On MRI single ventricular cavity , fusion of high frontoparietal lobes , Azygous ACA and dysplastic corpus callosum was noted which are typical findings in syntelencephaly

Neurology and Psychology and Physical Medicine and Rehabilitation

A review of the legal challenges faced by pediatricians in dealing with suspected cases of child abuse in treatment centers

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Abstract: Child abuse within the family is a crime that is severely punished in many countries including Iran where it has been criminalized. There are various types of child abuse such as physical abuse through assault, sexual harassment, and psychological harassment. Child abuse can also be caused by neglectful acts such as intentionally ignoring a child's health and hygiene needs. Pediatricians often encounter sick children where the possibility of child abuse is a concern. The doctor's duties and responsibilities from the perspectives of ethics, legality, negligence and correct actions should be considered. It is important for the doctor not to wait for definitive proof or diagnosis and any doubts should be thoroughly investigated. The child should receive a physical examination in the presence of parents, a companion and a member of the medical staff. Any traces of old and new assaults should be documented in the file. Photography should be taken by the hospital unit, and it should be prohibited to take pictures with personal mobile phones and store them. Parents should be identified and required to present their identification as mere claims will not suffice Psychiatric consultation should be arranged for the child and parents. If necessary, toxicology samples should be collected. the hospital's social work unit should be informed to contact social emergency services in critical cases. Any discharge without the patient's personal consent should be prohibited. Care should also be taken to ensure the presence of the patient's companion, during the discharge process. Additionally, the patient's bed should be placed next to the nursing station and within view of the staff to prevent any potential problems. If there is a risk of the patient running away this should be reported to security immediately. Performing a physical examination, recording the impacts of injuries and conducting any required consultations are crucial steps for proper follow-up care. It is essential to establish a comprehensive national system to monitor data on children's referral to medical facilities nationwide. This system will provide valuable information to the treating physician.

Neurology and Psychology and Physical Medicine and Rehabilitation

Atypical presentations in an RTD patient and report of novel SLC52A3 and SLC52A2 mutations

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Abstract: Background: Riboflavin Transporter Deficiency (RTD) is a rare neurological disorder characterized by pontobulbar palsy, hearing loss, and motor cranial nerve involvement. SLC52A3 and SLC52A2 mutations are causes of RTD. SLC52A2 mutations are usually found in childhood onset cases. Fifteen Iranian RTD diagnosed patients without SLC52A2 mutations have been described. Objectives: We aimed to identify causative mutations in two childhood cases. Methods: We recruited patients with diagnosis of BVVL. Comprehensive clinical evaluations were performed on the patients. SLC52A3 and SLC52A2 genes were PCR-amplified and Sanger sequenced. Candidate disease causing variations were screened for segregation with disease status in the respective families and control individuals. Results: A novel homozygous SLC52A3 mutation (p.Met1Val) and a heterozygous SLC52A2 mutation (p.Ala288Val) were both observed in one proband with typical RTD presentations. The aggregate of presentations in the early stages of disease in the second patient that included weakness in the lower extremities, absence of bulbar or hearing defects, prominent sensory polyneuropathy as evidenced in electrodiagnostic studies, and absence of sensory symptoms including sensory ataxia did not prompt immediate RTD diagnosis. Dysarthria and decreased hearing manifested later in the disease course. A novel homozygous SLC52A2 (p.Val314Met) mutation was identified. Discussion: A literature search found recent reports of other atypical RTD presentations. These include MRI findings, speech understanding difficulties accompanied by normal hearing, anemia, and left ventricular non-compaction. Knowledge of unusual presentations lessens the chance of misdiagnosis or delayed RTD diagnosis which, in light of favorable effects of riboflavin supplementation, is of immense importance.

Neurology and Psychology and Physical Medicine and Rehabilitation

Neuro developmental outcome of very low birth weight children aged three to five years old born in (2017) in Tehran

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Abstract: Introduction: With progress in medical care in the field of newborns, the rate of premature birth has increased and the mortality rate of very low birth weight babies has decreased. However, there is an increased incidence of disabilities in survivors, including neurodevelopmental delay, particularly in infants born very prematurely. For better understanding of the prevalence and patterns of adverse outcomes of developmental delay in this group of children is important for their care and family counseling and research. In this research, the developmental status of children aged 3 to 5 years who weigh less than 1500 grams or the mother's pregnancy period is less than 32 weeks from the beginning to the end of2017, who were born in one of the hospitals in Tehran and are still alive today (est. 340 children) were evaluated by Ages and Stages Questionnaires (ASQ). The type of study was cross-sectional and the sampling was done non-randomly. The data were entered into the computer and analyzed by SPSS-22 software. Analytical statistical methods were reported by independent T-TEST and checking the effect of variables on the amount of areas using chi-square test. Results: Out of the total number of births, 220 children were eligible to enter the study and their parents answered the phone call. 12 children (5.7 percent) had at least one developmental disorder in the five investigated field. There was a significant difference between the rehabilitation status of VLBW children and developmental delay (P001). 4.2% of the children under investigation were neurological developmental delayed in the field of communication, 2.4% in the field of gross motor, 2.4% in the field of fine motor, 2.8% in the field of problem solving and 2.8% in the personal-social field. Conclusion: VLBW children are at high risk of neurodevelopmental and behavioral disorders, therefore it is recommended that these children undergo physical, neurological and developmental evaluations at different ages, so that if there is a problem for the child, it should be diagnosed earlier and rehabilitation should be carried out at early age.

Keywords: Neurodevelopmental delay, very low birth weight children, Ages and Stages Questionnaire (ASQ)

Neurology and Psychology and Physical Medicine and Rehabilitation

Neurofibromatosis and learning disability in children

Narjes mohammadi [1], Fatemeh Mehravar [1], Leila jouybari [1] © ℗

[1] Golestan University of Medical Sciences

Abstract: Introduction: Neurofibromatosis (NF) is a genetic disorder that causes the development of multiple tumors in neural tissues. One of the common manifestations of this disease is cognitive disorders. Cognitive disorders include deficiencies in reading and spelling, writing, mathematics, spatial functioning, and social cognition, leading to a noticeable academic decline in children and adolescents with the disease. The objective of the present study was to determine the association between NF and learning disabilities in children. Method: This cross-sectional, was conducted in 2024 with a sample of 46 children diagnosed with NF as the "case group" and another group of 46 non-affected peers from the same family/first-degree relatives/neighbors as the "control group," selected through convenience sampling. Data collection tools included a demographic information form and the Colorado Learning Disabilities Questionnaire, ranging from 20 to 100 points. Data were analyzed using Independent T-test and ANOVA. Results: 48.9% of the participants had NF, and 51.1% were non-affected. The average score for learning disabilities in the total sample was 42.11±18.88, with 50.00±19.48 in the case group and 34.54±14.42 in the control group. The T-Test showed a significant association between the average score for learning disabilities in the case and control groups (P=0.00). Additionally, ANOVA indicated a significant association between the average score for learning disabilities and the type of neurofibromatosis in the case group (P=0.038). Conclusion: The study demonstrates a significant association between neurofibromatosis and learning disabilities in children, highlighting the need for appropriate educational support and early intervention strategies to address the cognitive challenges faced by these young patients.

Keywords: Adolescent, Child, Case-Control Studies, Learning Disabilities, Neurofibromatoses

Neurology and Psychology and Physical Medicine and Rehabilitation

Pediatric Idiopathic Intracranial Hypertension: Clinical Presentations, Risk Factors, and Prognostic Indicator

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Abstract: Abstract Background: Idiopathic intracranial hypertension (IIH) is characterized by elevated cerebrospinal fluid pressure without space-occupying lesions, infections, or alterations in brain parenchyma. Diagnosing IIH in children poses a significant challenge for pediatricians, given the often nonspecific nature of clinical signs and symptoms. Objectives: Our study aims to evaluate the clinical presentations and potential risk factors among pediatric individuals diagnosed with IIH, considering the limited research in this particular domain. Methods: Clinical data from pediatric patients diagnosed with IIH who sought care at Tehran's primary referral children's hospitals were collected from 2013 to 2021, spanning eight years. These patients were subsequently contacted to follow up on the presence of persistent headaches and visual problems. Detailed records of their initial signs and symptoms were documented. To identify prognostic factors associated with persistent headaches and visual problems in pediatric IIH patients, binary logistic regression analysis was conducted. Results: A total of 81 pediatric patients were included in the study, with a mean age of 13.56 ± 4.404 years at the time of their IIH diagnosis. The most frequently reported clinical symptom among these patients was headache, observed in 85.2% of cases, followed by diplopia (50.6%), visual impairment (46.9%), and nausea with/without vomiting (44.4%). Furthermore, a substantial proportion of the patients were underweight (weight percentiles 3). Our analysis showed that male patients and those without strabismus experienced significantly more recurrent episodes of IIH (P = 0.013 and P = 0.013, respectively). Notably, recurrent episodes and higher weight percentiles emerged as predictive factors for future persistent visual problems within our study population (P = 0.032 and P = 0.045, respectively). Conclusions: Recurrence of IIH was significantly less in female patients and those with strabismus. Additionally, we found that both lower and higher weight percentiles, as well as the occurrence of recurrent episodes, served as predictive factors for the development of persistent visual problems. However, our model could not predict persistent headaches.

Keywords Pseudotumor Cerebri Intracranial Hypertension Idiopathic Pediatrics Headache Vision Disorders

Neurology and Psychology and Physical Medicine and Rehabilitation

The Effect of Everolimus on Subependymal Giant Cell Astrocytoma (SEGA) in Children with Tuberous Sclerosis Complex

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Abstract: Abstract Objective Subependymal Giant Cell Astrocytomas (SEGAs) are slow-growing glioneuronal tumors typically found around the ventricles of the brain, particularly near the foramen of Monro in 15%-20% of patients with tuberous sclerosis complex (TSC). Surgical resection is the standard treatment for these symptomatic tumors. The mTOR inhibitor everolimus can be regarded as an alternative treatment for SEGAs due to the complications of surgery. The present study primarily aimed to specify the effect of everolimus on SEGA volume change before and after treatment. The secondary objective was to determine the effect of this drug on renal angiomyolipoma (AML), skin lesions, and seizures in TSC patients. Materials & Methods This pre- and post-treatment clinical trial was performed on 14 children (eight females and six males with a mean age of 10 years) previously diagnosed with TSC based on the diagnostic criteria. The subjects received oral everolimus at a dose of 3 mg/m2 for at least six months. Results Half of the patients had more than 30% of volume loss in SEGA, and in 28.5% of them, a ≥ 50% reduction in SEGA volume was observed (P=0.01). Moreover, 92.9% of the patients had a ≥ 50% decrease in the frequency of seizures (P=0.000). The response rate in AML and skin lesions was 14.2% and 50%, respectively. Conclusion Everolimus significantly reduced the seizure frequency and SEGA volume in the subjects; hence, it can be used as a potential alternative treatment for symptomatic SEGA in TSC patients.

Keywords: Everolimus; Subependymal Giant Cell Astrocytoma; Tuberous Sclerosis Complex

Neurology and Psychology and Physical Medicine and Rehabilitation

The power of Animation: Easing children's Dental Anxiety

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Abstract: Introduction: Fear and anxiety associated with dental pain, the dental environment, and its repercussions pose significant obstacles to oral and dental care in children. It is imperative to explore ways to alleviate this anxiety and enhance children's oral and dental health. This study aims to investigate the impact of educational animation on children's dental anxiety. Materials and Methods: This randomized clinical trial enrolled 88 girls and boys aged between 4-6 years, referred to the Tadayyon dental center in Semnan city for surface restoration of decayed teeth. The children were randomly assigned to either the control or intervention (educational animation) groups. In the intervention group, a three-minute educational animation was presented, while the control group received no intervention. Anxiety levels were assessed using Venham's imaginary anxiety scale, with a minimum and maximum score of 4 and 8, respectively. Results: The mean age of parents did not significantly differ between the two groups (P0.05). Similarly, no significant differences were observed in parents' occupation, family history of anxiety, and number of siblings (P0.05). Anxiety levels (P0.001), heart rate (P0.001), and respiratory rate (P0.027) significantly decreased in the animation group compared to the control group (P0.05). Conclusion: The study results demonstrate the effectiveness of educational animation in reducing children's dental anxiety.

Keywords: Anxiety, dentistry, child, educational animation, Venham's imaginary anxiety scale, randomized clinical trial

Neurology and Psychology and Physical Medicine and Rehabilitation

Treatment of acute migraine in adolescents and children

nahideh.khosroshahi [1] © ℗

[1] **associate prof of pediatric neurology**

Abstract: Migraine is a common disease in children and adolescents. Migraine causes considerable individual suffering and impaired quality of life. Therefore, appropriate management is essential Migraines can be treated with two types of drugs: abortive and preventive. The abortive (symptomatic) therapy of migraine ranges from the use of simple analgesics such as nonsteroidal anti-inflammatory drugs (NSAIDs) or acetaminophen to triptans, antiemetics, calcitonin gene-related peptide (CGRP) antagonists , and dihydroergotamine. Acetaminophen (15 mg/kg) and nonsteroidal anti-inflammatory drugs are first-line treatments for mild to moderate migraines, whereas triptans are first-line treatments for moderate to severe migraines. NSAIDs include , ibuprofen, , naproxen sodium , diclofenac, piroxicam, and ketorolac. The NSAIDs that inhibit prostaglandin E2 synthesis are effective in treating acute migraine attacks. Ibuprofen (7.5-10 mg/kg)is the most commonly used abortive treatment In hospital and severe cases following drugs are used for nausea related to migraine headaches, in addition to migraine treatment. Antidopaminergic medications such as Chlorpromazine ,Metoclopramide (0.13-0.15 mg/kg) , Prochlorperazine (0.15 mg/kg) Triptans are medications for severe and intractable forms of migraine and included: Almotriptan , Eletriptan , Frovatriptan , Naratriptan , Rizatripan , Sumatriptan and Zolmitriptan . Three triptans that approved by FDA for treatment of episodic migraine in the pediatric population are Almotriptan (ages 12-17 years), Rizatriptan (as young as 6 years) and intranasal formulation of Zolmitriptan in children ages 12 and over. The combination of naproxen sodium and sumatriptan has been studied and may be effective in children. In status migrainosus Dihydroergotamine (DHE) is a medication used as a vasoconstrictor to abort the vascular phase of migraine headache. Both triptans and ergotamine are contraindicated in hemiplegic migraines. Sodium valproate (15 mg/kg) is used when DHE is contraindicated or has been ineffective. Atogepant is a new type of anti-calcitonin gene-related peptide (CGRP) drug, which is specifically designed to treat migraines. They work by blocking the receptor of the CGRP protein.this new agent are approved for patients 18 and older for acute headache treatment.

Key words: migraine , children , abortive therapy

Pulmonology

How to work with AMBU(BVM) for neonates

Homayoon Bana Derakhshan [1] © Ⓟ

[1] **Assistant Professor of Shahid Beheshti University of Medical Sciences**

Abstract: As you know, infant CPR has a special place in medical science. One of the devices that is widely used to save neonates from death in this process is AMBU. This device plays an important role in infant CPR. In this speech, the intention is to first of all explain about this efficient medical tool; Then, how to work and use it in a practical way. In this regard, the things that are taught briefly include the following: Abbreviation of AMBU and the correct and recommended name of AMBU, types of breathing bags, its structure, pop of valve and its specifications, the percentage of oxygen output in different situations with the oxygen connection pipe or with the oxygen reservoir bag with closed end, method And the rhythm of pressing, types of masks and how to determine the appropriate size, how to put it on the neonate's face, how to hold the mask and how to press it on the neonate's face...

Poisoning and Pharmacology

A Case Report of Suicidal Drug Toxicity: Medicolegal Aspects

Farhoud Toutounchian [1] © ℗

[1] **Forensic Medicine and Clinical Toxicology Department, Children's Medical Center, Tehran University of Medical Sciences**

Abstract: A 14 years old girl with positive mood disturbances followed by her deceased mother that she was treated with mood stabilizers. She poisoned with multiple drugs mostly Acetaminophen (17 gr), ASA and others that admitted in a general hospital in North of Iran. she had suicidal mission. NG washing and NAC administered and after 48 hr. She was shifted to our center from another center. At first, in our center she had stable clinical situation. Nausea and epigastric pain and tenderness was her chief complain. Liver function test is disturbed as AST:12080→372, ALT:11240→171, INR:7.18→3.21, Cr: 1.0→2.3. Hepatic encephalopathy due to hepatic failure was presented and then gradually regressed. Hemodialysis and plasmapheresis done according clinical indications. Liver transplantation indications evaluated during hospitalization, finally she was not candidate to that. Neurologic assessments were normal condition. Cardiac assessment showed any cardiac arrhythmia (Junctional) that hypotension and bradycardia, so the patient received catecholamine drip and external pacemaker. Urinary fungal infection presented during hospitalization that antifungals prescribed. Sodium and potassium disturbances treated with Potassium running and hypertonic serum. She arrested in thirteenth day of hospitalization and CPR was not successful. As Iranian legal rules and academical aspects every patient died due to suicidal activity it is necessary to autopsy, so despite refraction of patient father we refer the cadaver to autopsy hall.

Radiology

Indications and types of imaging in pediatric urogenital emergencies

Sheida Javadi [1] © Ⓟ

[1] **Sheida Javadi, MD, Radiologist, assistant professor, Department of radiology, Tehran University of Medical Sciences**

Abstract: Indications and types of imaging in pediatric genitourinary emergencies Emergent genitourinary conditions are common among children and require timely diagnosis and treatment to prevent morbidities such as infertility and mortality. The most common emergent genitourinary conditions are urinary tract obstruction, pyelonephritis, trauma, epididymo-orchitis, and testicular and ovarian torsion. In these emergencies, a definite diagnosis can often be reached using appropriate imaging and clinical diagnosis. Ultrasonography is an accessible modality that is usually the first modality of choice in genitourinary emergencies, in some cases; a CT scan can be used as a complementary modality. This speech aims to summarize the role of imaging in diagnosing acute and emergent genitourinary conditions using a case-based approach and to show how imaging can aid in the diagnosis of common clinical entities presenting to the pediatric emergency department. Sheida Javadi MD- Radiologist

Radiology

Pediatric head and neck neoplasms

Sam Mirfendereski [1] © ℗

[1] **Isfahan university of medical sciences /department of Radiology**

Abstract: A variety of benign and malignant Head and neck neoplasms can involve children. it is necessary for a pediatric radiologist , oncologist and head and neck surgeon to be familiar with imaging of such lesions. Here we have an overview of imaging findings of these lesions.

Sleep Disorders

Sleep Practice in Occupational Therapy: An Educational Program to Improve Sleep Quality for Cerebral Palsy Children

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Abstract: Intrudaction: Sleep is an essential occupation that supports and promotes individuals' occupational performance in all participants. It builds the basis for cognitive development, learning in children, and regulation of their daytime activity level. Sleep problems in cerebral palsy children are several times greater than normal children. Occupational therapy practitioners (OTPs) recognize the importance of sleep as an essential building block for development. The objective of the Sleep Practice in Occupational Therapy (SPOT) program is to extend sleep assessment, intervention, interprofessional collaboration, and family partnership within this population. Methods and materials: In this RCT study, 20 cerebral palsy children aged 4-7 years were selected using the available sampling method in Hamadan city in 2022. Data were collected by demographic information questionnaire and the Children's Sleep Habits Questionnaire (CSHQ). The questionnaires were completed as a self-report by the parents (mother or father). Data were analyzed using descriptive statistics methods and independent t-tests. This four-week online educational course consists of minilectures on the neurobiological evidence in sleep in cerebral palsy children, multiple group discussions regarding sleep health education, and individual work projects to build competence in sleep assessment and intervention. Results: OTP participants were equipped with evidence-based sleep hygiene resources and sleep health educational presentation materials generated by the program author. After the intervention, the mean score of the students' sleep habits was in girls 76.87 ± 17.24 and in boys 73.99± 17.99. Sleep duration in girls is 9.42 9± 1.40 hours and sleep duration in boys was 9.53± 1.22 hours. Conclusion: The findings of this study showed that The Sleep Practice in Occupational Therapy (SPOT) program improves sleep habits disorders in Cerebral Palsy Children.

Key words: Sleep, Occupational Therapy, Cerebral Palsy, Children

Sleep Disorders

The role of children playing in dream sleep: interesting or dangerous?

Khatereh Khamenehpour [1] © Ⓟ

[1] **Qazvin university of medical science, Qazvin, Iran**

Abstract: REM sleep is a very important phase of sleep in childhood and plays a crucial role in a child's memory and learning. During REM sleep, after infancy, the body is completely atonic, with slow breathing and heart rate, while only the eyes move. Children can start to describe their dreams after the age of three, but they do not exhibit any movement while dreaming.If there is no REM sleep present and the child acts out their dreams like an actor, this indicates a REM sleep behavior disorder, which is rare in children. Diagnosis is made through a sleep study. If confirmed, secondary types should be considered, particularly in relation to neurodegenerative brain disorders and brain tumors, which are much more common.The diagnosis of this disease is carried out through an online polysomnography test. After diagnosis, the underlying factors that contribute to it in children must be examined. Therefore, the role of children's play in sleep is dangerous, and this issue should be taken seriously.