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**NUTRITIONAL ANEMIA**

*Thilagavathi V*

**Abstract:** Nutritional anemia in children is a common deficiency disorder and iron deficiency is the most common cause manifesting as either isolated or combined deficiency. Iron plays an essential role in hemoglobin synthesis and B12 and folate in DNA synthesis. Inadequate intake of foods rich in iron, B12 and folate, malabsorption, infections and inflammation cause the state of deficiency. It is important to identify the specific cause of anemia and treat appropriately.

**Keywords:** Anemia, Nutritional, Iron, Folate, B12, Child.

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**Points to Remember**

- Iron deficiency is the most common cause of nutritional anemia both as isolated or as combined deficiency.
- Serum ferritin along with C-reactive protein serves as the best indicator of body iron stores.
- Iron deficiency anemia is treated with oral iron supplements in appropriate form, dose and duration.
- Folate and B12 deficiency during infancy have adverse impact on the developing brain.
- Oral vitamin B12 is as effective as parenteral B12.

**References**


PREVENTIVE STRATEGIES FOR THALASSEMA

*Anupam Sachdeva

**Arun S Danewa

Abstract: Thalassemias are group of autosomal recessive disorders of hemoglobin chain production. This inherited disorder requires life-long management in the form of regular blood transfusions and chelation therapy imposing a great burden on the family as well as the country. Various strategies for thalassemia prevention including genetic counselling, carrier detection and prenatal diagnosis have decreased the burden of disease but there is a need to increase awareness about the preventive strategies with special focus on pregnant women.

Keywords: Prenatal diagnosis, Preventive strategies, Thalassemia

Points to Remember

- Thalassemias are a group of autosomal recessive disorders with defective or absent hemoglobin chain synthesis.
- Management includes life-long packed red cell transfusions, chelation therapy and management of complications with iron overload.
- Prenatal diagnosis should be advised when both partners are carriers of β-thalassemia which includes chorionic villus sampling, amniocentesis and fetal cord blood sampling.
- More efforts are needed to increase awareness about the preventive strategies.

References


**HEMATO ONCOLOGY**

**APPROACH TO A BLEEDING CHILD**

*Nitin Shah*

**Abstract:** Hemostasis is a perfect balance between fluidity of flowing blood on one hand and clotting when required on other hand. Vessel wall, platelets, coagulation factors and their regulators as well as fibrinolytic processes play a role in this balance. While approaching a child with bleeding, systematic approach starting with clinical history, detailed examination, screening laboratory tests and at the end confirmatory test is essential. Clinical clues also at times help to clinch the diagnosis. Newer laboratory tests have helped further diagnosis of rare bleeding disorders.

**Keywords:** Bleeding child, Approach, Screening tests, Confirmatory tests

**Points to remember**

- Ascertain whether bleeding is due to local cause or systemic cause, inherited cause or acquired cause, vascular/platelet defect or coagulation defect.
- Clinical clues at times help clinch the diagnosis in a syndromic child with bleeding.
- Bleeding time is rarely required and clotting time is given up as a screening test.
- CBC, PS, PT, aPTT and TCT form the screening tests in a bleeding child.
- Prolonged aPTT can be also due to presence of inhibitors.
- Normal screening tests for bleeding do not rule out bleeding disorders always.
- Keep battered baby or fictitious purpura as a cause of bleeding in mind in a given clinical background.

**References**


HEMATO ONCOLOGY

HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS

*Balasubramanian S

Abstract: Hemophagocytic lymphohistiocytosis (HLH) is a life threatening illness often associated with malignancy, rheumatologic and infectious diseases. HLH presents with fever and involvement of many organ systems with hepatosplenomegaly, lymphadenopathy, rash and neurologic manifestations. Anemia and thrombocytopenia along with elevated ferritin, abnormal liver enzymes level and deranged coagulation profile should point towards HLH. Though hemophagocytosis on bone marrow examination is not seen in all cases, infiltration of the bone marrow by activated macrophages is consistent with the diagnosis. Immunological investigations are not essential for initiation of therapy. Treatment aim is to interrupt the amplification cascades of cytokines and suppress the hyperinflammation.

Keywords: Hemophagocytic lymphohistiocytosis, Children, Pathogenesis, Management

Points to Remember

- Hemophagocytic lymphohistiocytosis (HLH) is a frequently fatal but underdiagnosed condition.
- Clinical features mimic many illnesses.
- Fever, lymphadenopathy, hepatosplenomegaly, rash along with bicytopenia, elevated liver enzymes and ferritin should make one suspect HLH.
- Well defined criteria help in making a definitive diagnosis of HLH.
- Corticosteroids, etoposide and cyclosporine A form the basis of the treatment.
- Hematopoietic stem cell transplant will be needed in primary cases to correct the underlying immune defect and to prevent recurrence.
- Supportive care is essential.

References


ATYPICAL PRESENTATION OF PEDIATRIC MALIGNANCIES IN OFFICE PRACTICE

*Aruna Rajendran

Abstract: Pediatric malignancies have a variable presentation. These may be in the form of proptosis, lytic bone lesions, testicular swelling endocrine dysfunction or simply as pyrexia of unknown origin. The diagnosis may get delayed with the use of corticosteriods and concomitant severe infection. A through knowledge of these unusual presentations and continued observation and follow up will help in arriving at the correct diagnosis. Sometimes repeating the tests like bone marrow examination on strong clinical suspicion will yield the diagnosis. Some of the variations in clinical presentation of pediatric malignancies are discussed with illustrative cases.

Keywords: Atypical presentation, malignancies, childhood

Points to Remember

• Pediatric malignancies may present with clinical features of other common childhood problems, such as infection, endocrine problems, rheumatologic disorders etc.
• The diagnosis may also get delayed due to iatrogenic factors such as even a single dose of steroids.
• In clinically suspected cases, continuous reexamination and repeating the tests like bone marrow examination will help in the diagnosis.
• Appropriate tissue should be sampled for accurate diagnosis.
• Knowledge about the atypical presentation will help the pediatrician to suspect malignancy in the appropriate clinical circumstances.

References


MANAGEMENT OF COMMON PROBLEMS DURING LEUKEMIA TREATMENT

*Anupama Borker
**Pooja Balasubramanian

Abstract: Leukemia is the most common and curable of childhood cancers. The treatment of acute leukemia in children is intense and prolonged. Chemotherapy-induced myelosuppression leads to anemia, neutropenia and thrombocytopenia. The prompt treatment of bacterial and fungal infections, rational use of blood components and the availability of potent anti-emetics and analgesics have made leukemia treatment safer. Malnutrition, depression and physical disability during leukemia therapy can be effectively treated with nutritional rehabilitation, physiotherapy and psychosocial support respectively.

Keywords: Leukemia, Chemotherapy, Neutropenia, Anemia.

Points to Remember

- Febrile neutropenia is an oncological emergency requiring timely action with antibacterial and antifungal therapy to avoid mortality.
- Transfusion with leucodepleted and irradiated blood products helps to prevent alloimmunisation and transfusion associated graft versus host disease in children with leukemia.
- Aggressive nutritional rehabilitation must be initiated from the time of diagnosis to withstand chemotherapy and reduce morbidity and mortality.
- Along with physical problems, emotional and social needs of the child must also be addressed with establishment of a normal routine with age appropriate activities.

References


RECENT ADVANCES IN THE MANAGEMENT OF PEDIATRIC SOLID TUMORS

*Prakash Agarwal

Abstract: Solid tumors make up about 30% of all pediatric cancers. The most common types of solid tumors in children include brain tumors, neuroblastoma, rhabdomyosarcoma, Wilms’ tumor and osteosarcoma. In the last decade substantial progress has been made in the treatment of pediatric solid tumors. Better understanding of the natural history of the various tumors, improved histologic classifications, new techniques to define extent of disease accurately, effective chemotherapy and improved radiation, surgical and supportive therapies have contributed to improved survival. This article reviews some of the common childhood tumors, emphasizing on current management and future directions.

Keywords: Pediatric solid tumors, Recent advances.

Points to Remember

- Improved understanding of the molecular genetic basis of tumorigenesis has translated into diagnostic assays to identify abnormalities of gene or chromosome structure in patient tissues and as a means of supporting standard histopathologic and immunohistochemical diagnostic methods.
- Advances in imaging have helped in better diagnosis and prognostication of pediatric solid tumors.
- Targeted chemotherapy including monoclonal antibodies and adjuvant chemotherapy has revolutionized the treatment.
- Advent of central venous lines to administer chemotherapy has made care of the child easier.

References


PRIMARY IMMUNODEFICIENCY DISORDERS - WHEN TO SUSPECT AND HOW TO DIAGNOSE

*Revathi Raj

Abstract: Primary immune deficiency disorders are not as rare as thought and can affect about 1 in 10,000 live births. The diagnosis is often missed due to lack of awareness and can be made at any age starting from the newborn period to adulthood. Any child with recurrent infections, atypical organisms, unusual sites and refractory autoimmune disorder can have an underlying defect in their immune system. The introduction of flow cytometry based evaluation for these disorders has made rapid diagnosis a reality and has also given us good insight into the phenotype and genotype correlation. Awareness leads to early diagnosis and intervention with improved outcomes.

Keywords: Primary immunodeficiency, Recurrent infections, Flow cytometry, Atypical organisms, Autoimmunity.

Points to Remember

• Primary immune deficiency disorders can manifest at any age from the newborn period to adulthood and diagnosis is feasible only if there is adequate awareness.

• Any child with recurrent or unusual infections or refractory autoimmunity should be evaluated for a defect in the immune system.

• Flow cytometry based evaluation for T and B cell markers and serum immunoglobulins form a basic screening test for these children.

• Hematopoietic stem cell transplantation (HSCT) is the main curative option in many of the primary immune deficiency disorders.

References


GENERAL ARTICLE

CHIKUNGUNYA IN CHILDREN

*Pravakar Mishra  
**Rashmi Ranjan Das

Abstract: Chikungunya is a viral infection spread by the mosquito belonging to the Aedes species. The disease has been occurring in epidemic forms in our country over the past two decades. Unlike adults, the affected children have less of musculoskeletal involvement, but more of fever with skin rash and may also present with febrile seizures. Children also may have neurological manifestations, which are rare but severe, with sequelae. Perinatal chikungunya due to maternal infection can result in neonatal fever, rash, edema, neurologic problems and multiorgan failure. Treatment of chikungunya is symptomatic. Preventive strategies include control of mosquito breeding and personal protection against mosquito bites.

Keywords: Chikungunya, Children, Neurological, Mother-to-child transmission.

Points to Remember

- Chikungunya is a re-emerging viral infection spread by Aedes mosquitoes.
- Like other mosquito-borne diseases, it is difficult to predict when an outbreak is going to occur in a particular location.
- Children present commonly with fever and rashes. Musculoskeletal manifestations are rare compared to adults.
- Mother-to-child transmission can occur with neonates presenting with fever, rash, edema and neurological problems.
- Management is entirely symptomatic.
- Mosquito breeding control and prevention of mosquito bites are the only currently available preventive strategies.

References


SUPPOSITORIES IN PEDIATRIC THERAPEUTICS

* Jeeson C Unni
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Abstract: Generally, oral administration is the route of choice for medicating children. However, suppositories are considered as a practical alternative when oral administration is either impractical or impossible, when there is vomiting, convulsions, non-cooperation, unconsciousness and in perioperative period. This article reviews the mechanism of absorption of suppositories, various formulations available and the advantages and disadvantages of some of the medications.

Keywords: Suppositories, Formulation, Rectal drug delivery, Children

Points to Remember

- Suppositories are not superior to oral medications in terms of rapidity of onset of action.
- It should be considered only in conditions where there is practical difficulty in giving the oral medications or when there is specific indication.
- Many of the rectal formulations which are available elsewhere are not currently available in India.

References


**DERMATOLOGY**

**CUTANEOUS ADVERSE DRUG REACTIONS**

*Madhu R*

**Abstract:** Cutaneous adverse drug reactions (CADR) form a spectrum ranging from benign conditions to serious life-threatening reactions such as Steven Johnson syndrome, toxic epidermal necrolysis and drug hypersensitivity syndromes. In the latter conditions, skin manifestations do not occur in isolation and present as a systemic reaction. Various mechanisms, both immunological and non-immunological have been postulated to explain CADR. Antimicrobials, nonsteroidal anti-inflammatory drugs and anticonvulsants are the most common agents implicated in CADR. Exanthematous type which is the most common of CADR, often poses a diagnostic dilemma due to its close resemblance to viral exanthems. The most important step in the management is to withhold the offending agent and all the non-essential drugs. Early diagnosis and prompt treatment of severe cutaneous drug reactions pave the way to reduce the morbidity and improve the quality of life of these children.

**Keywords:** Cutaneous adverse drug reaction, Sulfonamides, Anticonvulsants, Steven Johnson syndrome, Toxic epidermal necrolysis.

**Points to Remember**

- Cutaneous adverse drug reactions are the most common adverse drug reactions seen in hospitalized children.
- Drugs with a tendency to produce reactive intermediates or toxins, low therapeutic indices and high levels of drug interactions are more prone to result in drug reactions.
- Dose, time and susceptibility (DoTS) classification provides a complete evaluation of the ADR and is ideal for pharmacovigilance studies.
- Detailed history regarding the drug and evolution of the eruption and astute clinical examination will help in correct diagnosis and appropriate management.

**References**


INTESTINAL STRONGYLOIDIASIS IN AN IMMUNOCOMPETENT BOY

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Abstract: Strongyloides stercoralis is endemic in tropical and sub-tropical regions and is often reported in immunocompromised children. Creeping eruption due to dermal entry of larva, rather than the gastrointestinal route, is a common manifestation in chronic strongyloidiasis. Peripheral eosinophilia is often seen; however, its absence does not rule out the disease. Consecutive stool examinations for larva is diagnostic, but may be negative at times. Small bowel biopsy may help in diagnosis in children with chronic gastrointestinal symptoms. Treatment with ivermectin is rewarding. We report an immunocompetent boy presenting with chronic diarrhea, hypoproteinemia, anemia and cachexia due to intestinal strongyloidiasis, diagnosed by duodenal biopsy.

Keywords: Duodenal strongyloidiasis, Hypoproteinemia, Malabsorption, Chronic Diarrhea, Immunocompetent, Children.

References


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CASE REPORT

TRACHEOMALACIA DUE TO VASCULAR ANOMALY IN A YOUNG CHILD

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*Sumant Prabhudesai  
**Bala Ramachandran  
***Balakrishnan KR

Abstract: Tracheomalacia persisting beyond infancy is uncommon. We report a 3-year-old boy with persistent stridor who required endotracheal intubation and mechanical ventilation due to severe airway obstruction. He was found to have severe tracheomalacia. Imaging showed an anomalous innominate artery causing tracheal compression, which was relieved after aortopexy. Tracheomalacia is common in infancy, but its persistence through early childhood should prompt further investigation to rule out correctable secondary causes.

Keywords: Tracheomalacia, Anomalous innominate artery, Aortopexy

Points to Remember

- Persistence of tracheomalacia beyond infancy is uncommon.
- Such persistence warrants investigation for a correctable cause.

References