

## **Symposium: Hemophagocytic Lymphohistiocytosis (HLH) (Jun Mo, Director)**

### Clinical overview of HLH

Lisa Filipovich, MD

Objectives: After attending the lecture, the learner will be able to:

1. List the clinical features of HLH and the diagnostic roadmap for immunologic and genetic testing.
2. Describe the approaches to treatment and potential outcomes of HLH.
3. List the clinical features of HLH and the diagnostic roadmap for immunologic and genetic testing.
4. Describe the approaches to treatment and potential outcomes of HLH.

### Animal models of HLH

Michael Jordan, MD

Objectives: After attending the lecture, the learner will be able to:

1. Enumerate the steps by which abnormal T cell activation underlies HLH in animal models.
2. Describe the mechanisms by which hemophagocytosis develops in animal models.
3. Describe the mechanism of action of etoposide against HLH in animal models.

### Macrophage activation syndrome in rheumatology: Clinical and pathophysiologic overlap with HLH

Alexei Grom, MD

Objectives: After attending the lecture, the learner will be able to:

1. Itemize the signs and symptoms of macrophage activation syndrome (MAS) presenting as a complication of rheumatic disease.
2. Discuss the clinical and pathophysiologic overlap of MAS with HLH.
3. Explain why MAS is most strongly associated with systemic juvenile idiopathic arthritis and represents a wide spectrum in terms of severity.
4. Discuss clinical and pathologic findings in the early stages of MAS.

### Pathology of HLH

Marian Malone, MB BCh, FRCPath

Objectives: After attending the lecture, the learner will be able to:

1. Describe how the syndrome of HLH was first recognized by the medical community.
2. Discuss the distinguishing histopathological features of HLH as it affects different tissues.
3. Explain why the absence of hemophagocytosis does not exclude the diagnosis of HLH as the disease may run a fluctuating course
4. Enumerate the minimum dataset required for making the diagnosis of HLH in the post mortem setting.

## **Workshops-2011**

### **Peripheral Neuroblastic Tumors in Children: An Update (1/3)**

Hiroyuki Shimada, MD, PhD, Children's Hospital of Los Angeles, CA. Bruce R. Pawel, MD, Children's Hospital of Philadelphia, Philadelphia, PA.

Objectives: At the conclusion of this workshop, participants will be able to:

1. Diagnose peripheral neuroblastic tumors and describe morphologic features and ancillary techniques applicable to resolving questions of differential diagnosis.
2. Properly classify ganglioneuromas, ganglioneuroblastomas, and neuroblastomas, and assign a favorable or unfavorable histology according to the criteria of the International Neuroblastoma Pathology Classification.
3. Describe recent, molecular-genetic advances that show promise in improving our understanding of the etiology and natural history of neuroblastoma.

### **Pediatric Neuropathology Update (1/3)**

Brian Harding, MD, Alexander R. Judkins, MD, Mariarita Santi, MD, PhD, Children's Hospital of Philadelphia, Philadelphia, PA.

Objectives: At the conclusion of this workshop, participants will be able to:

#### **Neurometabolic disease (Dr. Harding):**

1. Describe the principal pathologic features of the main mitochondrial disorders affecting the CNS
2. Discuss the differential diagnosis of dysmyelinating disease in childhood
3. Diagnose CNS mitochondrial and pediatric dysmyelinating disease and discuss their pathogenic mechanisms to enable clinical teams to provide optimal genetic counseling to the family.

#### **CNS embryonal tumors (Dr. Judkins):**

1. Describe key developments in the molecular characterization of embryonal CNS tumors
2. Describe the histopathological features associated with these changes
3. Discuss the use of key molecular test or data relevant to embryonal CNS tumors

#### **Muscle diseases (Dr. Santi):**

1. List the techniques applied to muscle biopsy
2. Describe the characteristic morphological features of most common forms of congenital myopathies such as nemaline/rods myopathy.
3. List causative gene defects identified for most of the common forms of congenital myopathies
4. List appropriate molecular analyses workup upon combined clinical and pathological assessment.

### **Pediatric Thymus Pathology (2/3)**

Xiayuan Liang, MD and Mark A. Lovell, MD, The Children's Hospital, Denver, CO

Objectives: At the conclusion of this workshop, participants will be able to:

1. Discuss age-related changes in thymic histology and function.
2. Describe morphologic features of non-neoplastic lesions of the thymus and their underlying etiologies, mechanisms, and genetic defects.
3. Diagnose and subclassify thymic epithelial neoplasms, and distinguish epithelial neoplasms from neoplasms of other cell origin using immunohistochemical, flow cytometric, cytogenetic, and molecular techniques.

### **Molecular biology – an introduction to the conventional and new diagnostic tests (2/3)**

Luc Oligny, MSc, MD

CHU Sainte-Justine, Montreal, Quebec, Canada

Objectives: At the conclusion of this workshop, participants will be able to:

1. Describe each of these techniques;
2. Explain the utility of each of these techniques;
3. Choose the best technique, depending on the material received and the answers sought;
4. Explain the shortcomings of each of these techniques, including common artifacts.

### **Pediatric Transplantation Pathology (3/3)**

Aliya N. Husain, MD, U. Chicago Sarangarajan Ranganathan, MD, Children's Hospital of Pittsburgh

Objectives: At the conclusion of this workshop, participants will be able to:

1. List common indications for heart, lung, liver, and small bowel transplantation in children and contrast them with those used for adults.
2. Diagnose complications of organ transplantation including surgical, infectious, and rejection-associated complications.
3. Analyze the outcomes of transplantation, and cite the reasons leading to improved quality of life and survival of transplant recipients.

### **Non-tumoral Testicular Pathology in Children (3/3)**

Mariana Cajaiba, MD and Miguel Reyes-Mugica, MD Children's Hospital of Pittsburgh , Maria del Pilar et al, Universidad Autonoma de Marid, Espana

Objectives: At the conclusion of this workshop, participants will be able to:

1. Describe the different stages of testicular development and their biology, aiming at an individual approach of the different age groups evaluated in the perinatal/pediatric pathology practice.
2. Perform a systematic evaluation of the testis in pathological specimens, including morphometric studies.
3. Diagnose and establish anatomo-clinical correlations for the main pathological processes occurring in the prepubertal testis, including maldevelopment lesions, intersexual disorders, cryptorchidism and acquired lesions.