CME 8
Paediatrics Committee
Monday, October 19, 16:30-18:00

Session Title
Emergency Conditions in Paediatric Nuclear Medicine

Chairpersons
Catia Olianti (Florence, Italy)
Isabel Roca (Barcelona, Spain)

Programme
16:30 - 17:00  Arnon Yaari (Petah Tikva, Israel): Nuclear Medicine in Urgent Paediatric Conditions - A Clinical Perspective
17:00 - 17:30  Zvi Bar Sever (Petah Tikva, Israel): Nuclear Medicine Techniques in Urgent Paediatric Conditions - Part 1
17:30 - 18:00  Isabel Roca (Barcelona, Spain): Nuclear Medicine Techniques in Urgent Paediatric Conditions - Part 2

Educational Objectives
1. Identify the clinical requirements for Nuclear Medicine in Paediatric Emergency Conditions.
2. How to plan, perform and report the most frequent Nuclear Medicine procedure in Paediatric Emergency Conditions

Summary
The session will cover the clinical aspects of the most frequent Emergency Conditions in Paediatrics and offer an overview of the most suitable Nuclear Medicine techniques in this field. Nuclear medicine studies are most often used in conjunction with other imaging modalities and as problem-solving tool. The expanding request of diagnostic exams in paediatric pulmonary embolism is related to a longer-life cardio-pulmonary malformations, prematurity, malignancies, the use of central venous catheters (parenteral nutrition, chemotherapy) and thromboembolism-risk factors. Ventilation-Perfusion lung scans are easy and safe to perform and an appropriate procedure on children as a first imaging test in hemodynamically stable patients. Typical clinical scenarios for brain scintigraphic is brain death, it is considered accurate and has been favorably compared with other methods of detecting the presence or absence of cerebral blood flow. FDG-PET-CT technique replaced other imaging modalities in severe systemic infections/FUO with better sensitivity and less radiation exposure than gallium scan. FDG-PET-CT is also useful in pediatric Lymphomas and osteomyelitis. Bone scintigraphy also is sensitive and noninvasive technique in bone disorders as osteomyelitis and fracture. Acute pyelonephritis is an historical condition in paediatric Nuclear Medicine workup and under certain circumstances renal scintigraphy may be indicated as the first-line imaging modality for transplant dysfunction in the early post-operative period or in case of abnormal ultrasonography parameters. Hepatobiliary scintigraphy is the most accurate diagnostic imaging modality in biliary atresia and to evaluate Kasai porto-enterostomy complications, as recurrent acute cholecystitis and biliary reflux.
Gastro-enteric bleeding can be evaluated non-invasively using either Tc-labelled RBC in lower GI tract bleedings or Meckel’s scan, to establish the diagnosis of ectopic gastric mucosa in Meckel’s diverticulum. "Giant" hydronephrosis can be studied by renal dynamic scintigraphy, to assess drainage and separate renal function, particularly when interventions such as stent placement, percutaneous nephrostomy or surgery are been considered.

Key Words
Paediatrics Emergency Conditions