Updates in Paediatric MIBG Scintigraphy

M. Golvet (Le Blanc Mesnil); M. Adam (Paris)

123I-MIBG is the reference functional imaging tool in the characterization of primary tumor and the detection of distant metastases in neuroblastoma. Neuroblastoma is the most frequent tumor in young children, with a mean age at diagnosis of two years old (95% < 5 years old).

Management of 123I-MIBG scintigraphy requires a trained multidisciplinary team, in order to take into account the young age of the patients and specificity of the examination.

The aim of this presentation is to give an overview of the management of pediatric 1123-MIBG scintigraphy, based on our experience as a cancer institute.

We will discuss the role of MIBG planning, examination scheduling and radiopharmaceutical products according to the children specificity. Parent’s implication is crucial for the preparation of the child and thyroid blockage prior to the exam.

Nuclear medicine technologist plays an important role, in constant collaboration with nuclear medicine physician and radiopharmacy, and we will review the different steps needed for the achievement of MIBG scintigraphy.

A two day examination is needed for MIBG scintigraphy, the first day being dedicated to radiopharmaceutical injection, where the technologist establishes the first contact with the child. Image acquisitions are performed 24 h after injection.

Installation of the child, planar and SPECT/CT imaging protocols will be introduced.

Development of tomoscintigraphy in our clinical practice has shown important contribution for the physician’s report accuracy, and we will discuss the specificity of SPECT/CT and its limits. Radioprotection rules for parents and the care team are explained at the various stage of the exam.

During our practice, we have been able to develop a capacity of listening and helping in order to establish a sense of confidence and quality relationships with the children and their parents, all of which are necessary for the smooth running of the examination.

MIBG imaging in pediatric oncology is a feasible procedure, with skilled and trained nuclear medicine technologists, implication of both parents and children and a reassuring environment. High quality diagnostic images and development of SPECT/CT have shown important impact on the medical report and children management and treatment orientation.

References