



EANM PRESS RELEASE

Paediatric nuclear imaging: Minimizing the dose – maintaining the diagnostic value

(July 13, 2015) The amount of radiation children are exposed to when undergoing nuclear medical examinations will be further reduced. This is due to new international guidelines that have been jointly set up by the European Association of Nuclear Medicine (EANM) and North American scientific societies.

For the diagnosis and follow-up of numerous paediatric disorders the techniques of nuclear medicine are essential as only they can provide accurate and reliable information on the nature of the condition and its developmental stage as well as on the effects of therapeutic measures. However, over the past years, there has been increasing concern among parents about potentially detrimental side-effects caused by the radiation that is being emitted through injections with radioactively marked tracers in the course of nuclear imaging procedures. Children are considered to be more prone to radiation risks than adults and the possibility cannot be completely excluded that later in life delayed carcinogenic effects might show up. It must be stressed, though, that nuclear medicine studies so far have not documented any risks to the patient stemming from the low doses of radiation.

“Nevertheless it is only prudent to perform nuclear medical examinations using the lowest possible amounts of radioactivity that still ensure the procedure’s diagnostic value. In order to enable doctors to apply radiopharmaceutical doses, that fulfill these conditions paediatric nuclear medicine experts from Europe and the USA have joined forces to develop guidelines recommending paediatric radiopharmaceutical administered activities,” says Prof Michael Lassmann who represented the EANM together with Dr. Mark Konijnenberg, Dr. Zvi Bar-Sever and Prof. Thomas Pfluger in the course of the development process.

Harmonizing the recommendations

In Europe, first recommendations of this kind were already published as early as 1990. In 2007 a new and completely revised version of the EANM dosage card was developed by the EANM dosimetry and paediatrics committees. On the other side of the Atlantic the corresponding North American Pediatric Administered Radiopharmaceutical Dose Guidelines approved by the Society of Nuclear Medicine and Molecular Imaging (SNMMI), the Society

for Pediatric Radiology (SPR) and the American College of Radiology (ACR) were published in 2010. The comparison of the European and the North American guidelines revealed that although most recommendations were almost equivalent, for some procedures the recommended activity and the effective dose differed considerably which induced the wish to achieve a closer agreement. During several meetings in 2012 and 2013 that were initiated at the EANM congresses a working group including members of both the EANM and SNMMI studied the possibility of harmonizing the guidelines published by the two societies. These meetings resulted in the development of a set of international guidelines, also referred to as “Paediatric Radiopharmaceutical Administration: Harmonization Guidelines“ that were published in 2014. These guidelines are based on input from many experts across the Atlantic. Twelve radiopharmaceuticals are included and others will follow in the near future. A modified version of the EANM dosage card incorporating the suggested changes is now available online here: http://www.eanm.org/publications/dosage_calculator.php?navId=285

Towards global standards

The harmonized guidelines aim to set a standard and to recommend the best practice. Appropriate selection of the administered radiopharmaceutical activity should relate to the patient population, available equipment, specific clinical requirements, and the physician's judgment. Therefore, deviation from the administered activities listed in these guidelines should be considered appropriate when clinically indicated. Individual practitioners may use lower administered activity if their equipment or software permits them to do so. Under special circumstances higher administered activities may be required in certain patients under the direction of the nuclear medicine physician. “This new approach will certainly lead to a broad optimization of paediatric radiopharmaceutical administered activities. By applying the guidelines many paediatric nuclear medicine patients will receive lower radiopharmaceutical doses than previously. We are equally confident that these harmonized dosage recommendations will soon result in a higher level of unification of the practice of paediatric nuclear medicine in Europe and in North America”, says Dr. Mark Koijnenberg.

For further information from EANM, please also visit <https://www.facebook.com/officialEANM>.

For an animated introduction to nuclear medicine, please visit the website

www.whatisnuclearmedicine.com

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