

Is there a need for attenuation correction in  $^{99m}\text{Tc}$ -DMSA scans on pediatric patients?

F Nogueira<sup>1</sup>, J Lemos<sup>1</sup>, M Oliveira<sup>2</sup>, J Silva<sup>2</sup>, M C Sousa<sup>2</sup>, L Cunha<sup>1</sup> & L F Metello<sup>1</sup>

1Nuclear Medicine Department, High Institute for Allied Health Technologies,  
Polytechnic Institute of Porto (ESTSP.IPP),

VN Gaia, Portugal

2Nuclear Medicine Department, Santo António Hospital

Porto, Portugal

**Introduction:** The quantification of the differential renal function in adults can be difficult due to many factors - one of these is the variances in kidney depth and the attenuation related with all the tissues between the kidney and the camera. Some authors refer that the lower attenuation in pediatric patients makes unnecessary the use of attenuation correction algorithms.

This study will compare the values of differential renal function obtained with and without attenuation correction techniques.

**Material and Methods:** Images from a group consisting of 15 individuals (aged 3 years +/- 2) were used and two attenuation correction methods were applied – Tonnesen correction factors and the geometric mean method. The mean time of acquisition (time post  $^{99m}\text{Tc}$ -DMSA administration) was 3.5 hours +/- 0.8h.

**Results:** The absence of any method of attenuation correction apparently seems to lead to consistent values that seem to correlate well with the ones obtained with the incorporation of methods of attenuation correction. The differences found between the values obtained with and without attenuation correction were not significant.

**Conclusion:** The decision of not doing any kind of attenuation correction method can apparently be justified by the minor differences verified on the relative kidney uptake values. Nevertheless, if it is recognized that there is a need for a really accurate value of the relative kidney uptake, then an attenuation correction method should be used.

*Foi decidido que não será apresentada a versão integral deste documento.*

*Para obtenção de mais informações:*

*[www.nucmedonline.net](http://www.nucmedonline.net)*

*[cursomedicinanuclear@gmail.com](mailto:cursomedicinanuclear@gmail.com)*

*It has been decided that it would not be shown the entire version of this document.*

*To obtain more informations:*

*[www.nucmedonline.net](http://www.nucmedonline.net)*

*[cursomedicinanuclear@gmail.com](mailto:cursomedicinanuclear@gmail.com)*