Ekaterina Saukko et al., J Nucl Med Radiat Ther 2015, 6:4
http://dx.doi.org/10.4172/2155-9619.S1.002

OMICS International
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International Conference on
Medical Physics
August 03-05, 2015 Birmingham, UK

The establishment of local DRLs for ERCP – A practical tool for the optimization of patient radiation doses and for quality assurance management

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Endoscopic retrograde cholangiopancreatography (ERCP) has the potential for high patient dose, which is why attention is required regarding radiation protection. The first step towards patient dose optimization is to establish the diagnostic reference levels (DRLs) for ERCP. The establishment of DRLs might be beneficial in view of the large variation of dose area product (DAP) reported during ERCP. If national DRLs are not available, it is recommended that local ones be established and compared with more current patient dose levels regularly. Consequently, there was an essential need to establish local DRLs for ERCP in our hospital. A total of 105 patient radiation doses in ERCP were recorded during a 4-month period in 2010. For each procedure, DAP, fluoroscopy time, cumulative skin dose and number of images were collected. Patient body characteristics, such as age, sex, height, weight and body mass index (BMI) was registered as well. DRLs were set at the point of 75th percentile for both DAP and fluoroscopy time. According to the results, the 75th percentiles of DAP was 2.40 Gy·cm2 and fluoroscopy time 2.13 min, respectively. In 2015, the local DRLs for ERCP were reviewed by collecting the similar data of 20 procedures. The effect on the radiation dose level requires further studies. The collection of such patient exposure data will increase awareness of the level of exposure involved in ERCP and the settled local DRLs could serve as a baseline for further studies concerning patient dose optimization with regard to avoiding and minimizing unnecessary radiation risks.

Biography

Ekaterina Saukko has completed her Master's degree in 2014 at the University of Oulu in the Finland and applied for PhD program to the University of Oulu Graduate School in 2015. She is working as a Research Coordinator in The Medical Imaging Centre of Southwest Finland at Turku University Hospital, Finland. Her research interests include interventional radiology, radiography, fluoroscopy, ERCP, radiation protection, pediatric imaging and evidence-based radiography. She has published a scientific article "Ondosimetry in interventional radiology" and participated in many international conferences in oral presentations and posters.

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