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POSTER SECTIONS

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Local Diagnostic Reference Levels in Fluoroscopy Guided Procedures in Urology, Orthopedy and Neurosurgery

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Purpose

The use of imaging in the operating room, namely through fluoroscopy guided procedures, it's commonly used in several surgical practices. Is known that fluoroscopy is a source of ionizing radiation and therefore there's a need to keep the exposure levels on recommended values, as this type of radiation induces biological damages to cell atoms and therefore, it can cause deterministic and/or stochastic effects [1]. It's also worth mentioning that this kind of fluoroscopy guided interventional (FGI) procedures are performed at an operating room and therefore...

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Methods and materials

This study took place in an operating room of a public university hospital center from Portugal. A pre-study research was conducted to investigate which FGI procedures were most commonly performed on that operating room, in order to have a reliable sample. This sample was collected from the data storage of two mobile C-arm fluoroscopy equipments available at that department using a non-probability convenience method. DAP (in $cGy.cm^2$) and FT (in min) values were recorded, which are both cumulative and displayed on the equipment during the...

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Results

In figure 2, DAP was converted from $cGy.cm^2$ to $Gy.cm^2$, as this is the recommended unit by International Commission on Radiological Protection (ICRP) to establish DRL's for FGI procedures. The 3rd Quartile columns are also highlighted to show that those are the established DRL's for each procedure of this study. [Fig 2] Data regarding figure 2 (where it's shown the established DRL's for each procedure) was used to compare the DRL's obtained in this study from others obtained in literature. This comparison using DAP is...

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Conclusion

The main objective of this study was to establish DRL's for several FGI procedures performed at a current hospital. This objective was fulfilled and the proposed DRL's are 0.390 Gy.cm² and 00:12min for pigtail catheter placement and 0.557 Gy.cm² and 00:18 min for the percutaneous nephrostomy placement. For the area of orthopedics, a DRL of 0.485 Gy.cm² and 00:13 min is proposed for DHS placement, 0.710 Gy.cm² and 00:23 min for IHS placement, 0.045 Gy.cm² and 00:13 min for ORIF on bimalleolar and trimalleolar ankle...

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Personal information and conflict of interest

D. R. Cordeiro: Nothing to disclose S. I. Rodrigues: Nothing to disclose A. F. C. L. Abrantes: Nothing to disclose L. P. V. Ribeiro: Nothing to disclose R. P. P. Almeida: Nothing to disclose

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Fig 1: *Total Sample*

Fig 2: *Established DRL's for the present study*

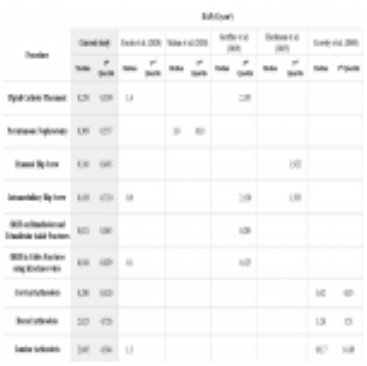

Fig 3: *Comparison of median and 3rd Quartile of DAP values from this study with others...*

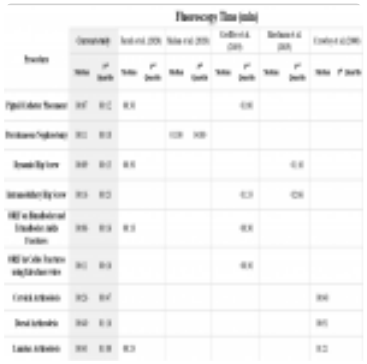

Fig 4: *Comparison of median and 3rd Quartile of FT values from this study with others...*