
Reference levels in interventional radiology: a French retrospective survey on patient doses.

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Résumé

Objectives

A national retrospective survey on patient doses was performed by the French Society of Medical physicists to assess reference levels (RLs) in interventional radiology as required by the European Directive 2013/59/Euratom.

Methods

Fifteen interventional procedures in neuroradiology, vascular radiology and osteoarticular procedures were analysed. Kerma-area-product (KAP), fluoroscopy time (FT), reference air kerma and number of images were recorded for 10 to 30 patients per procedure. RLs were calculated as the 3rd quartiles of the distributions.

Results

Results on 4500 procedures from 36 departments confirmed the large variability in patient dose for the same procedure. RLs were proposed for the four dosimetric estimators and the fifteen procedures. RLs in terms of KAP and FT were 90 Gy.cm² and 11 minutes for cerebral angiography, 35 Gy.cm² and 16 minutes for biliary drainage, 70 Gy.cm² and 6 minutes for lower limbs arteriography and 70 Gy.cm² and 11 minutes for vertebroplasty. For these four procedures, RLs were defined according to the complexity of the procedure. For all the procedures, the results were lower than most of those already published.

Conclusions

This study reports RLs in interventional radiology, based on a national survey. Continual evolution of practices and technologies requires regular updates of RLs.

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