

DENTAL AND INTERVENTIONAL DOSIMETRIC DATA AS ROUTINELY COLLECTED IN AN ITALIAN HOSPITAL

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Within the SENTINEL Project our attention has been devoted to the analysis of dental and interventional dosimetric data. We have taken into account the questionnaires proposed by leaders of Work Package 2 (Efficacy and safety in digital radiology, dentistry and nuclear medicine) and 4 (Efficacy and Safety in Interventional Radiology).

Regarding dentistry, as requested by Italian quality control protocols, we have analyzed X-ray equipment performances as follows: in terms of kVp, mAs and exposure time accuracy measurements, radiation output, half value layer, tube output at cone tip for adult mandibular molar setting, irradiated field size and measured focal spot for intra-oral X-ray units; in terms of kVp, mAs and exposure time accuracy measurements, dose, irradiated beam width and irradiated beam length (panoramic study) and entrance surface dose and measured field size (ceph study) for extra-oral X-ray units.

Concerning interventional radiology we have analyzed the protocol for dosimetric measurements followed in our hospital (IEC 61223-3-3, *Evaluation and routine testing in medical imaging departments - Part 3-3: Acceptance tests – Imaging performance of X-ray equipment for digital subtraction angiography*, 1996; AAPM n. 15, *Performance Evaluation and Quality Assurance in Digital Subtraction Angiography*; DIN 6868-8, *Konstanzprüfung bei Einrichtungen zur Digitalen Subtraktions-Angiographie*) which includes measurements for air kerma rate at the entrance phantom (5 cm PMMA) surface and its relative variation with respect to the reference value obtained during the acceptance test, but does not include checks on DAP calibration. We also present some patient dose data. We analyze the possibility to introduce in the protocol further measurements such as the DAP calibration also in relation to new technology.

Moreover we present a discussion on the real impact of quality index figures (as suggested by international quality assurance protocols or as adopted by local quality assurance routine) on the clinical image quality.

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