

**International Conference on Occupational Radiation Protection:
Strengthening Radiation Protection of Workers –Twenty Years of Progress
and the Way Forward**

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RADIATION PROTECTION FOR PATIENT AND STAFF IN INTERVENTIONAL PROCEDURES

BACKGROUND

Ionizing radiation is used extensively in cardiac diagnostic and interventional procedures. The radiation is associated with a small but definite stochastic risk of inducing a malignant disease. Low-dose radiation exposure has been shown to induce an increase in the number of circulating lymphocytes and chromosome aberrations, which represent surrogate biomarkers of cancer risk. The long-term cancer risk increases with increasing cumulative dose, there is no known threshold value. Deterministic risk of skin damage both to the patient and the operator, risk of eye injury to the operator, risk by radiation exposure to the operator as many procedures are carried out in a year over 700 interventional

The radiation dose received by cardiologists during interventional procedures and other cardiology procedures can vary by more than an order of magnitude for the same type of procedure and for similar patient doses.

This paper will analyze occupational radiation protection for physicians and other staff in the interventional suite.

MethodologyTo Assess the Performance of the Equipment in Terms of Kae and Air kerma rate**

Dose area product(DAP) meters are recommended techniques of dose measurement since exposure parameters vary throughout these tests and the X-ray beam moves across different regions of interest.

The DAP is especially useful for monitoring and comparing radiation dosage from screening procedures, and it provides a better indicator of overall patient exposure than surface dose measurements to specific organs. DAP mean values will be utilized in the investigations.

Simple methods for reducing or minimizing occupational radiation dose included minimizing fluoroscopy time and number of acquired images, using available patient dose reduction technologies, using good imaging-chain geometry, collimating; avoiding high-scatter areas, using protective shielding, using imaging equipment whose performance was controlled through a quality assurance program, and wearing personal dosimeters so you know your dose.

Radiation protection education and training for all interventional cardiology workers, as well as the availability of proper protective instruments and equipment, were essential for effective use of these procedures.

Regular review and investigation of personnel monitoring results, accompanied as appropriate by changes in how procedures are performed and equipment used, ensured continual improvement in the practice of radiation protection in the interventional suite

Conclusion

Reducing radiation exposure during interventional procedure is of paramount importance for both patients and staff safety

Advances in equipment and application of radiation safety protocols have significantly reduced patient doses and operator exposures

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