

Comparison Radiation Dose in Interventional Cardiology Between Iran and Other Countries: Evaluation Influencing Factors

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Abstract

Background: Interventional cardiology procedures result in substantial patient radiation doses due to prolonged fluoroscopy time and radiographic exposure. The procedures that are most frequently performed are coronary angiography (CA), percutaneous transluminal coronary angioplasty (PTCA), diagnostic electrophysiology studies and radiofrequency catheter ablation (RFA). When complex procedures are performed or procedures are repeated for the same patient, high-radiation dose levels can occur because procedures often require long fluoroscopy times and require high-quality images.

Objectives: The objective of the study is to review patient radiation doses from interventional cardiology procedures in the Iran and the world and comparison between them.

Methods: In this article we checked the derived data from 20 relevant studies published during the last 20 years in international scientific literature at other country except Iran and 10 studies from Iran. The variables dose-area product (DAP), fluoroscopy time, number of sequences and frames per sequence were collected for each CA, PTCA, RFA and diagnostic electrophysiology and then the obtained mean values, were compared.

Results: Published results indicate that patient radiation doses vary widely among the different interventional cardiology procedures but also among equivalent studies. By comparing the mean values of DAP and the fluoroscopy time obtained in the studies carried out in Iran with other studies in this field in other counties, it is revealed that these values in Iran were lower than the outcomes of other studies in the world.

Conclusions: This difference was due to the high knowledge and experience of the cardiologist in Iran and type of justify patient.

Keywords: Patient Dosimetry, Interventional Cardiology

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