

## عنوان مقاله:

Assessment of Patient Radiation Dose in Interventional Procedures at Shahid Madani Heart Center in Khorramabad, Iran

## محل انتشار:

مجله فیزیک پزشکی ایران, دوره 14, شماره 3 (سال: 1396)

تعداد صفحات اصل مقاله: 7

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## خلاصه مقاله:

**Introduction:** Coronary angiography is the most common angiographic procedure for diagnosis and treatment of the heart diseases. Herein, we aimed to evaluate the entrance surface dose (ESD), dose area product (DAP), as well as cancer risk in interventional cardiology procedures. **Materials and Methods:** This study was conducted during July-December 2015 at Shahid Madani Heart Center in Khorramabad, Iran. A total of 225 adult patients including 122 females and 103 males regardless of the risk factors for coronary diseases were participated. Of them, 199 and 26 patients underwent diagnostic coronary angiography (CA) and percutaneous transluminal coronary angioplasty (PTCA), respectively. Each patient underwent CA or PTCA separately. All the procedures were carried out using Siemens angiography system with the pulsed fluoroscopy of 10-30 pulses/s and cine frame rate of 15 frames/s. DAP, ESD, fluoroscopy time (FT), as well as the number of sequences and frames per sequence were collected for each 199 CA and 26 PTCA procedures. **Results:** The median values of DAP were  $19.77 \pm 14.88$  and  $57.11 \pm 33.36$  Gy.cm<sup>2</sup> in CA and PTCA, respectively. In addition, the median values of ESD were  $323.12 \pm 245.39$  and  $1145.22 \pm 594.42$  mGy in CA and PTCA, respectively. FTs were  $114.59 \pm 74.33$  s in CA and  $424.15 \pm 292.93$  s in PTCA. **Conclusion:** The average patient dose and cancer risk estimates in both CA and PTCA were consistent with the reference levels. However, in agreement with other interventional procedures, dose levels in the interventional cardiology are influenced by staff and clinical protocols, as well as the type of equipment.

## کلمات کلیدی:

Coronary Angiography Entrance Surface Dose, Dose Area Product, Effective Dose, Radiation risk

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