

Ultra low fluoroscopic dose protocol

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When working in interventional cardiology, protection measures against ionizing radiation must be implemented.¹ They are carried out by using protective equipment and reducing the level of radiation used during the procedure. We will focus on the use of small doses of radiation in chronic total occlusion (CTO) procedures („Ultra low fluoroscopic dose protocol“ - ULDR). The Ultra Low Dose Fluoroscopy (ULDR) protocol includes the use of 3.75 fps for fluoroscopy and 7.5 fps for imaging (CINE). In Interventional Cardiology Čakovec, this work protocol has been used since 2020 for all patients. A study was conducted by one operator on 88 patients with CTO PCI on the Shimadzu Trinius C8 device in the period from January 2021 to August 2022. The average duration of the procedure was 86.8 minutes, and the time of passing the wire through the lesion was 10.92 minutes. The results showed that the average AirKerma was 827.85 mGy; the success of the procedure is at a high level of 85.2% with no complications such as death, myocardial infarction, stroke, coronary perforation, bleeding. The average amount of applied contrast was 220 ml per patient. The approach used in procedures was through the radial or ulnar artery in 95.3% and transfemoral in 5.6%. We conclude that using the ULDR protocol as a new standard in CTO PCI achieves an average AirKerma of less than 1Gy. We conclude that the mentioned protocol does not affect the success of the procedure, does not increase the time of fluoroscopy, the use of contrast, and does not increase the number of complications. We recommend that interventional cardiologists should routinely adapt to this method as the new standard, even in complex interventions such as CTO interventions. This would reduce the radiation exposure of patients and staff without significant compromises in image quality and fluoroscopy time.

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LITERATURE

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