

## REDUCING RADIATION IN CT ANGIOGRAPHY

Cardiac CT angiography (CCTA) is increasingly being used to diagnose coronary artery disease; however, radiation exposure carries risks, which increase with repeated scans. Now a study of worldwide CCTA practice has determined the size of radiation dose in daily practice and the factors that contribute to variations in dose.

Numerous studies have reported a range of effective doses for CCTA; however, clinicians are often unfamiliar with the magnitude of radiation, and practices and doses vary widely between clinics. Hausleiter and colleagues therefore set out to assess radiation doses in clinics across the world and determine whether these doses could be reduced in line with the 'ALARA' principle, which aims to maintain radiation exposure 'as low as reasonably achievable'.

Data from 1,965 patients in 50 clinics were assessed; the primary outcome measure was the dose-length product (DLP), which quantifies the total amount of radiation deposited over the patient's entire CT series. The median effective dose for CCTA (12 mSv) was comparable with that of other diagnostic techniques, but the actual dose was found to substantially vary between study sites. This variation resulted from a combination of factors, including scan length. Electrocardiographically controlled tube current modulation, reducing tube voltage, and sequential scanning all reduced the DLP without affecting image quality, whereas automated exposure control had no effect on DLP.

This study shows that radiation doses vary considerably between clinics and that exposure can be substantially reduced by applying currently available, yet infrequently used, strategies. The investigators call for improved education and awareness of radiation doses among physicians and technicians, and recommend that DLP be recorded in normal practice.

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