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Titel des Beitrags: Dose levels at coronary CT angiography--a comparison of Dual Energy-, Dual Source- and 16-slice CT.

Abstract: To compare the dose estimates and image quality of Dual Energy CT (DECT), Dual Source CT (DSCT) and 16-slice CT for coronary CT angiography (cCTA). Sixty-eight patients were examined with 16-slice MDCT (group 1), 68 patients with DSCT (group 2) and 68 patients using DSCT in dual energy mode (DECT group 3). CT dose index volume, dose length product, effective dose, signal-to-noise, and contrast-to-noise ratio were compared. Subjective image quality was rated by two observers, blinded to technique. The mean estimated radiation dose of all patients investigated on a 16-slice MDCT was 12 ± 3.59 mSv, for DSCT in single energy 9.8 ± 4.77 mSv and for DECT 4.54 ± 1.87 mSv. Dose for CTA was significantly lower in group 3 compared to group 1 and 2. The image noise was significantly lower in Group 2 in comparison to group 1 and group 3. There was no significant difference in diagnostic image quality comparing DECT and DSCT. cCTA shows better dose levels at both DECT and DSCT compared to 16-slice CT. Further, DECT delivers significantly less dose than regular DSCT or single source single energy cCTA while maintaining diagnostic image quality.

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