Accuracy of coronary computed tomography angiography in detecting anatomically relevant coronary lesions compared to invasive angiography

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Objective

Coronary artery disease (CAD) is the most common chronic non-infectious disease in Lithuania. Early diagnosis and treatment of CAD prevents irreversible myocardial damage and CAD complications.

The aim of the study was to compare the accuracy of computed tomography angiography (CTA) in detecting anatomically significant (>50%) stenosis compared to interventional angiography (IA) and to describe clinical profile of this patients group.

Methods

A retrospective analysis included 137 patients who underwent CTA scan followed by IA scan no more than 50 days later. Results of the scans were classified as anatomically insignificant (<50%) and significant (≥50%). Modified 18 segment coronary segmentation scheme was used to evaluate the scans.

Results

Fig. 1: RIA stenosis seen in CTA and IA.
Fig. 2: ACD stenosis seen in CTA and IA.

Comparison of number of damaged coronary arteries seen in CTA and IA revealed that in 60 cases results match. Although in other cases one of these tests determined more damaged coronary arteries the difference was not significant (p=0.28).

Conclusions

Results of the study show that in a substantial number of patients anatomically significant coronary lesions (≥50%) in CTA were confirmed in IA, but CTA tends to overestimate coronary stenosis compared to IA.

Key words

Coronary stenosis, coronary computed tomography angiography, invasive angiography.