Coronary artery calcification on CTPA – review or ignore?

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Introduction

Cardiovascular disease is a leading cause of death with coronary artery disease (CAD) responsible for over 10% of UK deaths in 2017.[1]

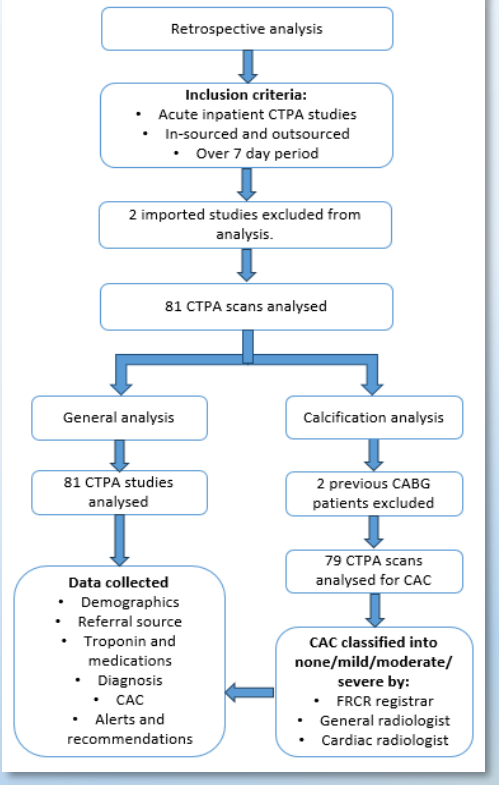
Early detection of CAD can reduce morbidity and mortality.[2]
Coronary artery calcification (CAC) is an established biomarker for atherosclerosis burden and cardiovascular event risk[3-4], and provides important prognostic information, even on non-gated CT scans.[5-6]

The BSCI/BSCCT/BSTI Consensus Statement recommends reporting all visualised coronary calcifications.[7] Reports should include management recommendations.

Aims

- To assess if we are identifying coronary calcification (CAC) on non-gated CTPA studies.
- To assess if we can visually stratify to mild, moderate, or severe categories consistently.
- To assess report comments and any recommendations suggested.

Method



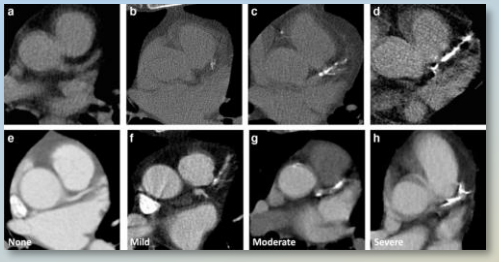


Figure 1. BSCI/BSTI guide on grading of Coronary artery calcification. [7]

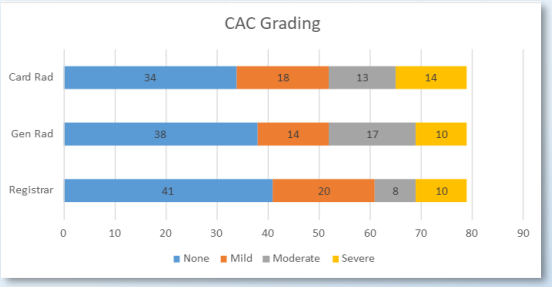


Figure 2. Good inter-observer agreement in assessment of CAC severity.

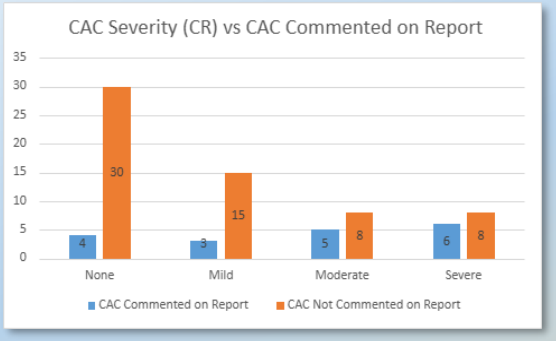


Figure 3. The severity of CAC separated by report comment or no comment.

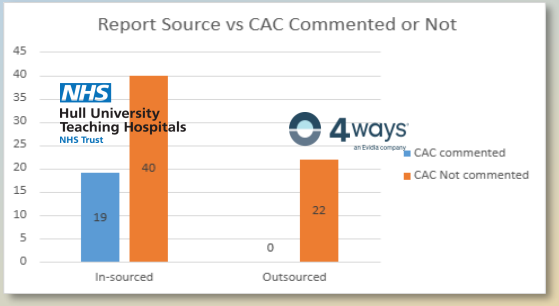


Figure 4. Insourced vs outsourced reporting of CAC.

Results

18 studies were positive for pulmonary emboli (22%). 45 studies had CAC on imaging, with 31 of these (69%) lacking any report comment.

This included 8 cases of severe and moderate CAC respectively. Incidentally, 6 of which were not on statin therapy, and 3 not on antiplatelet or anticoagulation.

22 studies were outsourced and 0% of these had comments on CAC.

Cardiac radiologists demonstrate increased sensitivity in CAC detection, with 45 positive cases compared to 41 for General Radiologist and 38 for Registrars (N=79).

Conclusions

- CAC is under-reported, even in severe cases which may alter patient management.
- We recommend CAC assessment as a review area for CTPA reporting.
- Inter-observer variability is generally good, but sensitivity increases with experience.

References: