

Improving the quality of the CT Coronary Angiography (CTCA) service

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AIMS

- To review the current CTCA service and to establish the current rate for non-diagnostic CTCA scans
- To identify modifiable factors that led to non-diagnostic scans
- To look at the quality and turn around for reporting of CTCAs

METHOD

First cycle audit: CTCA data from November 2022 - 50 consecutive patients

Intervention

- present data at clinical governance
- circulate data and beta blocker Standard Operating Procedure (SOP) amongst relevant clinicians/reporters
- amend electronic CTCA request form (in progress)

Second cycle audit: CTCA data from April 2024 - 50 consecutive patients

RESULTS: FIRST CYCLE AUDIT DATA

Indications for CTCA

- Atypical chest pain – 44%
- Angina – 40%
- Pre-op valve disease (assessment of CAD) – 6%
- Other – 10%

Quality of scan

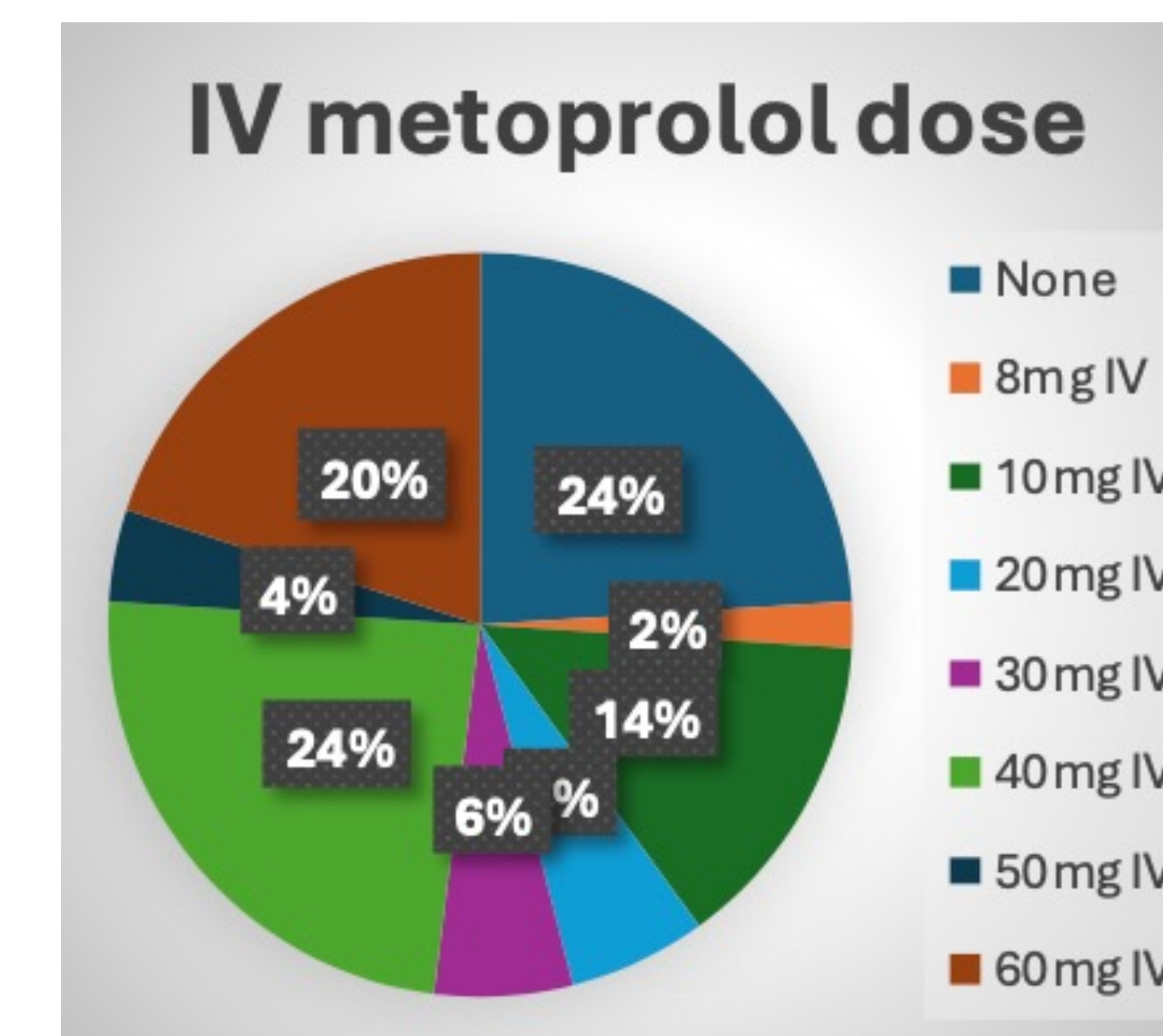
% diagnostic: **74%**

Of those that were non-diagnostic (N=13)

- **100% reports mentioned HR too high/step artefact**
- 46% had HR>80 at time of request
- 1/3 of these were **not started on oral beta blocker therapy at time of request**
- 15% reports additionally mentioned impaired quality due to **extensive calcification**

Report features

- Mean scan-report time: 4.82 days
- Reports mentioning radiation dose: 68%
- Reports mentioning calcium score: 90%
- Highly variable IV metoprolol dose during CTCA – no clear rationale behind dosing (hence our SOP)



RESULTS: RE-AUDIT DATA

After intervention:

- % diagnostic scans increased from 74% to **92%**
- % started on beta blocker therapy if HR>80 at time of request increased from 50% to 64%

Conclusions:

Strict heart rate control prior to CTCA is critical for good quality, diagnostic images.

Beta blocker therapy (both before and during the scan) is essential, assuming the patient does not have any contraindications.

IMPROVING DIAGNOSTIC RATE

- 1) Improved HR control before CTCA (initiation of oral beta blockers if HR>80 at time of scan request)
- 2) Introduction of beta blocker Standard Operating Procedure (SOP) to enable higher IV doses to be given with confidence during CTCA
- 3) Amend electronic CTCA request form – add mandatory field ‘is this patient suitable for IV beta blockers up to 60mg?’ – requesters to specifically consider beta blocker administration (this intervention is still in progress)