AUDIT OF RECORDING OF PRESCRIBED DRUG USE TO ENSURE PATIENT SAFETY IN COMPUTED TOMOGRAPHY CORONARY ANGIOGRAPHY (CTCA).

Battison S, Garfath-Cox KAG, Shambrook JS and Harden SP.
Department of Cardiothoracic Radiology, University Hospital Southampton NHS Foundation Trust.

Background to the audit

Computed tomography coronary angiography (CTCA) is a widely used imaging technique in the investigation of patients with chest pain and suspected coronary artery disease (1) with more centres across the UK establishing their CTCA imaging programmes. Pharmacological agents are used routinely in these centres to increase the arterial diameter and reduce cardiac motion artifact within the coronary arteries to ensure diagnostic images are acquired and to reduce overall radiation dose.

Beta-blockers are usually used as the first line drug in lowering the heart rate prior to CTCA. There are a number of both relative and absolute contraindications to beta-blocker use (Figure 3). Severe asthma and Verapamil are absolute contraindications to beta blockade. Severe asthma can result in life-threatening bronchospasm and concurrent use of Verapamil can result in asystole, severe hypotension and severe heart failure.

Glyceryl trinitrate (GTN) is administered to increase arterial diameter. GTN should be avoided in patients taking Sildenafil (‘Viagra’)(2) due to the possibility of potentially fatal profound hypotension. The use of these agents to optimise diagnostic quality therefore requires prior planning to ensure patient safety and to avoid these severe adverse events.

Standard

1. All patients should have documented whether they have recently taken Sildenafil (Viagra).
2. All patients should have documented whether they are receiving calcium channel blockers and specifically whether they are taking Verapamil.

Methods and Results

We reviewed the Radiology Information System (CRIS) for the CTCA patient safety questionnaire in use at University Hospital Southampton (Figure 1) to assess documentation of these contraindications prior to CT. Patients who underwent a calcium score alone were excluded from this audit.

Results of 1st audit round:

54 patients underwent CTCA between 12 January 2015 and 11 March 2015. There was no documentation on Viagra use, 42 patients (78%) had documentation of calcium channel blocker use but no specific documentation of Verapamil.

1st action plan:

Following the recommendations from the RCR standards document and the first audit, a new patient safety questionnaire (Figure 2) was created based on the recommendations from the RCR.

Results of 2nd audit round:

62 patients underwent CTCA between 13 January 2016 and 11 March 2016. 61 (98%) had documentation of Viagra administration, 62 (100%) had documentation of calcium channel blockers of which 62 (100%) specifically documented Verapamil use.

Discussion

Use of a patient safety checklist does improve the documentation of contraindications to pharmacological agents. The simple and easy to implement checklist can be completed by any member of the multidisciplinary team and confirmed by the Radiologist prior to the administration of medication. A second safety mechanism to be addressed in the future is to ensure referrers document the safe use of both these agents in the initial referral letter. These actions will help to safeguard against possible adverse events and improve patient safety during these scans.

References

2. www.euroradiology.com/euroradiology/diagnosis (last accessed 21/09/2016)