

Reducing the number of unnecessary coronary angiograms through analysis of referrals against guidelines

Ramesh Nadarajah, Ali Roomi, Balvinder Wasan
Cardiology Department, Queen Elizabeth Hospital Woolwich, London

Introduction

- Invasive coronary angiograms place the patient at risk of complications
- In patients with low pre-test probability new guidelines advocate non-invasive first line approach

Aim

- Investigate the proportion of coronary angiograms at a DGH which are normal
- Establish if these could be avoided through guidelines

Method

- Retrospective study over 8 months
- Review of all angiograms over 8 months
- Exclusion criteria for normal angiograms:
 - Previous surgical revascularisation
 - Pressure wire studies
 - Atheroma greater than moderate

Results

- Total number of angiograms - 797
- Patient demographics similar - high CV RF profile
- 302 normal (38%) which included:
 - 203 outpatients (87 RACPC)
 - 18% had preceding first-line test non-invasive imaging
 - 68 RACPC referrals could have been for CTCA or functional imaging
 - 7 normal angiograms from inpatient referrals which fit ESC criteria for non-invasive imaging
- 8 abnormal angiograms from inpatient referrals which fit ESC criteria
 - Only 4 required PCI, none required CABG
 - No deaths

Conclusion

- Applying guidelines could streamline cardiac services whilst maintaining patient safety, reducing the number of unnecessary angiograms and bed days
- Provision of CTCA required
- Teaching for clinical teams on ESC guidelines of unstable angina

Guidelines

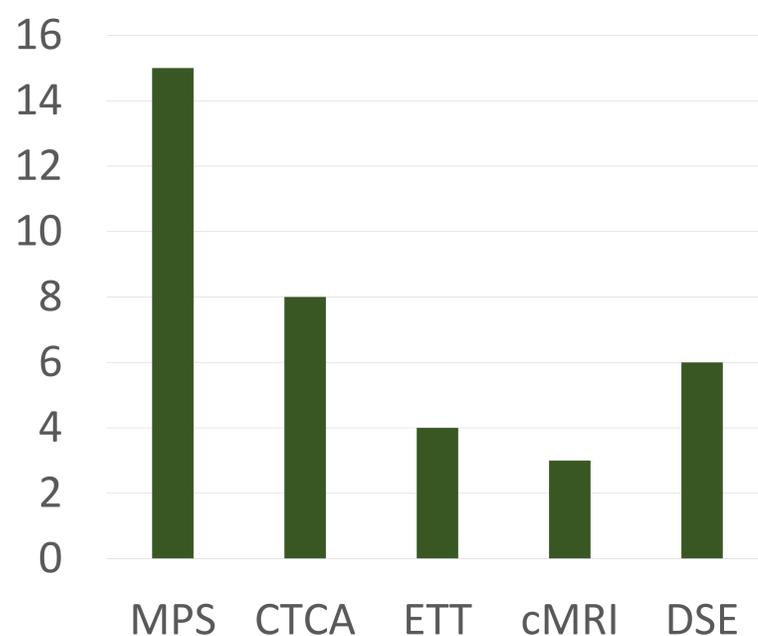
NICE: Stable Chest pain of recent onset (2016)¹

- If Stable angina/atypical angina/ECG changes:
 1. CTCA
 2. Functional Imaging (or if known CAD)
 3. Invasive Coronary Angiogram

ESC guidelines: ACS without ST elevation (2015)²

- Non-invasive imaging first line if:
 1. No rise or fall in troponin compatible with MI
 2. No dynamic ST- or T-wave changes
 3. GRACE score less than 108
 4. LVEF > 40%
 5. Not DM and eGFR >60 mL/min/1.73m²
 6. No history of previous revascularisation

Non-invasive tests which resulted in normal angiograms



Future Studies

- Preponderance to use MPS as first line non-invasive imaging due to local availability
- Ability of imaging modalities to discriminate significant CAD should be further scrutinised

References

1. NICE guidelines 2016: Chest pain of recent onset: assessment and diagnosis
2. Roffi M, Patrono C, Collet J-P, Mueller C, Valgimigli M, Andreotti F, et al. 2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. Eur Heart J. 2016;37(3)