

Treadmill Stress Testing, an Exercise in Futility? Benefit of CT Coronary Angiography in Acute Chest Pain in Ireland

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Abstract

The European Society of Cardiology (ESC) chronic coronary syndrome guidelines give class 1.A. recommendation to CT coronary angiography (CTCA) over exercise stress test (EST) to investigate low-intermediate risk chest pain. NICE guidelines also advocate CTCA use when stable angina cannot be excluded by clinical assessment. CTCA is not routinely available in most Irish centres. National Health Service (NHS) figures show CTCA (£175 per scan) providing cost benefit over EST (£75) following reduction in invasive coronary angiograms (ICA) (£1173) and inpatient days. We investigated chest pain admissions in our centre to assess the role for CTCA.

613 patients were referred with chest pain in 2019. A representative sample, 106 patients (17%), were randomly selected and risk stratified via ESC HeartScore. Typicality of pain, investigations, outcomes, and admission duration were analysed. STEMI patients were excluded, 100 remained.

Low risk (n=22): 6 had coronary artery disease (CAD) clinically excluded and 15 underwent EST. Of those, 7 proceeded to ICA. 1 patient immediately proceeded to ICA. No lesions were found in this group. Table 1. Intermediate risk (n=63): 16 patients had CAD clinically excluded. 27 had EST with 23 (85%) subsequently followed by ICA. 23 patients had ICA as first line. Flow limiting stenoses were identified in 14 (30.4%). High-risk (15): 3 were managed conservatively with 12 proceeding to ICA. 11 required intervention (91.7%). Overall, 42 patients had EST, with 9 (21.4%) displaying equivocal results. Mean wait times for inpatient ICA was 6.67 bed-days.

Compared to ICA, EST had a sensitivity of 88.9% (95% C.I. 50.6%-99.4%) and specificity of 40% (95% C.I. 21.8%-61.1%). CTCA would be a preferable initial investigation in low-intermediate risk chest pain which cannot be clinically excluded and would provide significant savings in addition to reducing ICA wait times in rural Ireland.

Biography

James Mannion is a cardiology Senior House Officer, working in University Hospital Waterford, in the south-east of Ireland. He is currently enjoying his second year of his Basic Specialist Training programme and hopes to go onto Higher Specialist Training in cardiology. This is one of several risk factor modification projects he has conducted in the South East of Ireland to optimize healthcare resources.

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