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Assessing the reliability of the rapid access chest pain clinic in the diagnosis of patients with coronary artery disease

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Introduction: Rapid Access Chest Pain Clinic (RACPC) is a concept that has been common place all across the UK for the best part of two decades. The service is primarily aimed at facilitating the assessment of patients with a low to medium risk of coronary heart disease. Exercise tolerance testing (ETT) is deployed in this setting and is thought to be an easy and inexpensive way to investigate those not known to have coronary artery disease previously. Though not a perfect test in comparison to gold-standard angiography, it is thought to be cost-effective in early detection. The aim of this project is to assess the reliability of the service at a district general hospital.

Aim: Aim of this study is to critically analyse and assess how effective and reliable the rapid access chest pain clinic is in identifying patients with coronary heart disease.

Methods: A retrospective analysis was performed which reviewed all patients who were referred to our rapid access chest pain clinic over a six-month period, between the 1st of January to the 30th of June 2016. Individual patient journeys were then followed up to see what further tests and treatments were done. This entailed seeing which patients had angiography on the back of what sort of ETT (positive/negative/equivocal) and what the angiography showed. In the event of significant coronary artery disease, a patient's timeline was traced forward even further to assess whether or not they underwent percutaneous intervention or bypass surgery.

Results: A total of 487 patients attended the RACPC in the time period specified. 40 (8%) of these patients were thought to have a positive test in view of significant ST segment deviation on ETT. Each of these patients was then referred to a cardiologist and subsequently had coronary angiography. 331 (67%) patients had a negative ETT and were discharged back to the referring primary care doctor. 77 (16%) patients had an inconclusive test and were referred to a cardiology clinic for further evaluation and consideration of alternative investigation for coronary ischemia in the form of a myocardial perfusion scan or coronary angiogram. Of the 40 positive tests, normal coronary arteries were seen on angiography in seven cases and this equates to a false positive rate of 17.5%. Of the 331 negatives, only five ultimately had a coronary angiogram having made their way back to cardiology clinic after re-referral. Three of these patients had a significant degree of coronary artery disease whilst the remaining two didn't. This represents a false negative rate of <1% which is not bad! The majority of patients with angiographically-demonstrated CAD underwent revascularization (PCI/CABG).

Conclusion: RACPC is a hugely cost-effective service in helping filter patients with suspected coronary artery disease. It perhaps holds a superior negative predictive value considering a much lower false negative percentage on the basis of our small study. Nonetheless, the relatively high false positive rate shouldn't be too alarming considering that positive ETTs are far outnumbered by negative ones. As an initial measure to streamline coronary patients, the service is exceedingly simple and cost-effective.

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