A Service Evaluation of a Rapid Access Chest Pain Clinic to determine whether patients with coronary artery disease are being appropriately identified and treated

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Background

Rapid Access Chest Pain Clinics (RACPC) were introduced in 2000 as part of the NHS modernisation plan to improve diagnosis and treatment of coronary artery disease (CAD). The evidence supporting the proliferation of RACPC's has been challenged by some as not substantial enough to support the £20 million pound investment made by the NHS (McManus et al. 2002; Byrne et al. 2002). The RACPC aims to provides rapid assessment and treatment of patients with suspected angina within 2 weeks of referral. They have also been instrumental in the NHS Improvement Plan 18 week referral to treatment target. In order to pre-empt acute events the opportunity to promptly diagnose and treat coronary artery disease (CAD) is important, as a diagnosis of CAD significantly increases morbidity and mortality (Wood, Fox and Gibbs 2001). Conversely, previous studies have demonstrated that over eighty percent of patients referred to RACPC are diagnosed with non-cardiac chest pain (NCCP) (Dumville et al. 2007; Debney & Fox 2012). The local RACPC was established in 2005 as part of a Rapid Cardiology Service, which also assesses patients with broader cardiology conditions. Patients are seen by a General Practitioner with a special interest in cardiology (GPSi), or a Clinical Nurse Specialist (CNS) in Cardiology, and have a full cardiovascular assessment, appropriate diagnostic investigations, a diagnosis and a management plan.

Aim To identify whether current RACPC working practices meet the needs of the local population and are effectively identifying and treating patients with CAD.

Method

A quantitative methodology using a service evaluation design frame. Service evaluation is an applied form of research to assess or evaluate practice (Polit, Beck and Hungler 2001). Patient records, from a convenience sample of 154 consecutive referrals to the service between April 1st and 31st July 2015, were retrospectively reviewed using a data collection tool. Gay's (1996) rule of sample calculation was used. NICE standards and definitions were used to support validity and reliability of this tool (see Box 1). Descriptive analysis using SPSS was undertaken. Ethical approval was obtained from the University of Worcester, and R & D approval from the Trust.

Box 1. NICE Definition of Angina Pain.

Anginal pain is:
- Constricting discomfort in the front of the chest, or in the neck, shoulders, jaw or arm
- Precipitated by physical exertion
- Relieved by rest or GTN within 5 minutes

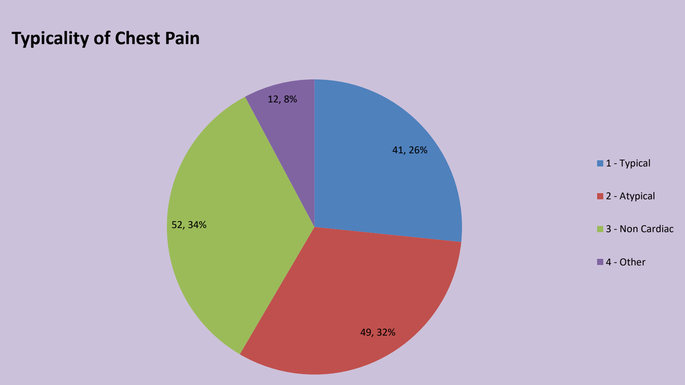
The presence of 3 of these features is defined as typical angina
The presence of 2 of these features is defined as atypical
The presence of one or none is defined as non-anginal pain
(NICE CG95 2010, p.14)

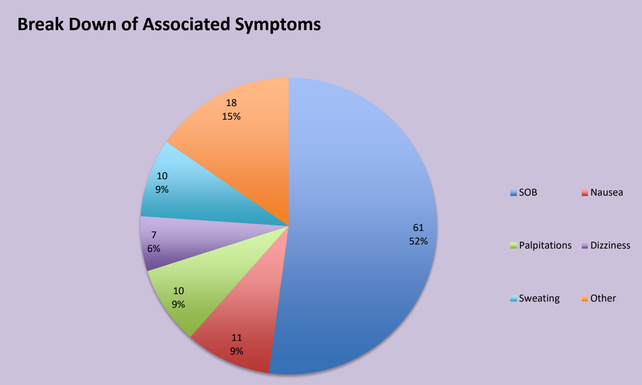
Table 1 Results (n=154)

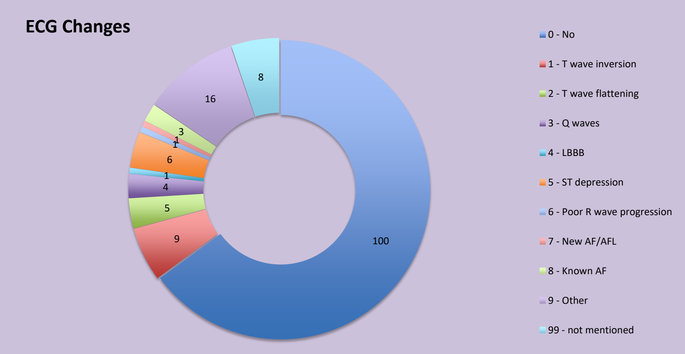
Age range	21-91 (mean 65)
Sex	
• Male	85 (55.2%)
• Female	69 (44.8%)
Employment status:	
• Employed	53 (34%)
• Unemployed	6 (4%)
• Retired	82 (53%)
• Sick leave	1 (0.65%)
• Not mentioned	12 (8%)
Clinician:	
• CNS	123 (80%)
• GPSi	31 (20%)
Chest Pain:	
• Typical	41 (26.6%)
• Atypical	49 (31.8%)
• Non Cardiac	52 (33.8%)
• Other	12 (7.8%)
ECG No Changes	100 (65%)
Associated symptoms - Shortness of breath	61 (52%)
Clinical signs - hypertension	18 (12%)
Previous CVD History	32 (21%)
Risk Factors	136 (87%)
Diagnostics	
• Coronary Angiogram	24 (15.6%)
• Myocardial Perfusion Scan	71 (46%)
• Echocardiogram	70 (45.5%)
Medication Advised	52 (33.7%)
Discharged as non-cardiac after initial assessment	29 (19 %)
Final Diagnosis:	
• Coronary Artery Disease	61 (39.6%)
• Non Cardiac Chest Pain	79 (51.3%)
• Aortic Stenosis	4 (2.6%)
• Other	10 (6.5%)
12 month outcomes:	
▪ PCI	10 (6.49%)
▪ CABG	6 (3.89%)
▪ Valve Surgery	4 (2.59%)
▪ Medical management	48 (31.2%)
▪ Admission cardiac	14 (9.1%)
▪ Death	1 (0.65%)
▪ Cardiology Follow up	28 (18.2%)

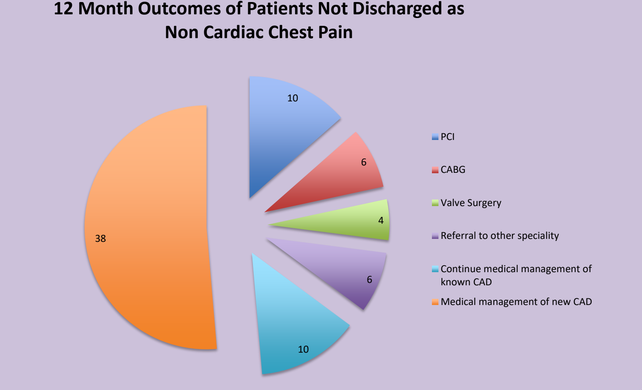
Results

40% of patients were diagnosed with CAD, 64% male and 36% female.
28% (n=17) of men had severe CAD and 88% (n=15) of these had revascularisation.
Three patients with critical LMS disease were also appropriately referred for coronary angiography. This compares with other studies that have demonstrated RACPC's appropriately risk stratify patients and accelerate the pathway to diagnosis and treatment (Sekhri 2007).
9% were diagnosed with other cardiac conditions including valve disease, arrhythmias and heart failure.
51% were diagnosed with non-cardiac chest pain, 48% male and 52% female.
19% were discharged following initial assessment.
No patients discharged with a diagnosis of non-cardiac chest pain died or had readmission with acute coronary syndrome in the 12 months following RACPC assessment.









Conclusion

This service is successful in identifying and managing patients with CAD in line with other published literature on RACPC outcomes. Patients are appropriately risk stratified and those diagnosed as low risk non-cardiac chest pain have not demonstrated significant cardiac events in the 12 months post discharge.

Recommendations

More could be done to support patients with a non-cardiac diagnosis; the literature demonstrate positive associations between chest pain and psychological distress and GORD. There were a significant number of normal results following echocardiogram and myocardial perfusion scans, and false positive myocardial perfusions results, further analysis of these could help refine this service. Feedback from service users would add to a more comprehensive evaluation.

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