A systematic review of the evidence for rapid access chest pain clinics

McManus RJ, Mant J, Davies MK, Davis RC, Deeks JJ, Oakes RA, Hobbs FD

Authors' objectives
To determine the impact of rapid access chest pain clinics (RACPC) on patient management. The specific objectives were to ascertain whether the provision of RACPC leads to fewer unnecessary admissions, better recognition of patients with acute coronary syndrome, earlier specialist assessment of patients with stable angina, and more rapid and accurate identification of patients with non-cardiac chest pain.

Searching
All published literature pertaining to out-patient chest pain assessment clinics between 1966 and 2000 was identified by searching electronic databases (MEDLINE, CINAHL, EMBASE and the Cochrane Library) and electronic international cardiology conference abstracts. The MeSH terms and textwords used consisted of morbidity terms (‘chest pain’, ‘angina pectoris’, ‘myocardial ischaemia’) combined with process terms (‘referral and consultation’, ‘ambulatory care facilities’, ‘hospital outpatient clinics’, ‘pain clinics’, ‘open access’). Secondary citations were collected from identified publications. Key journal references, grey literature and names of other workers in the field were identified from a questionnaire sent to experts from the National Research Register.

Study selection
Study designs of evaluations included in the review
Studies of any design were eligible for inclusion. Randomised controlled trials were sought first, then studies with a comparison and studies with follow-up data. Finally, studies with no comparison or follow-up were included if they contained data on the case-mix. However, only observational studies were found, none of which reported baseline data. The actual study designs included were two studies comparing clinic patients with hypothetical control groups (‘How would the GP have managed the patient if the clinic had not been available?’); one with a comparison of patients referred to cardiology over the same time period; three follow-up studies (one for 6 months, one for 8.5 months, one not stated); and three descriptive studies with no comparison group or follow-up.

Specific interventions included in the review
Studies assessing the impact of RACPC were eligible for inclusion. RACPC were defined as those assessing patients in a dedicated clinic by a specialist cardiology team. Studies of in-patient chest pain observation units and open access clinics that did not involve cardiological assessment (e.g. open access exercise testing) were excluded.

Participants included in the review
All of the participants in the included studies had recent non-specified onset chest or cardiac pain suggestive of myocardial ischaemia or palpitations. The participants’ ages (where given) ranged from greater than 29 years (male) or greater than 39 (female) to less than 70 years. Four of the included studies excluded patients with myocardial infarction; one study excluded those with acute symptoms likely to require admission, or long standing or established symptoms; three studies excluded those with acute coronary syndrome; two studies excluded those with a past medical history of known cardiac disease; and two studies excluded those with unstable angina.

Outcomes assessed in the review
The following outcomes were assessed: the admission rate of patients without acute coronary syndrome; the detection rate of acute coronary syndrome unrecognised by the general practitioner (GP); timing of specialist assessment of patients with stable angina; and speed and accuracy of detection of those with non-cardiac chest pain.

How were decisions on the relevance of primary studies made?
All of the papers were examined independently by two reviewers using a standard proforma. No further details were given.
Assessment of study quality
The study designs were ranked. Of the designs included, the order was: studies with a comparison group, studies with follow-up data and studies with neither a comparison nor follow-up. The authors do not state any other methods for assessing validity. All of the papers were examined independently by two reviewers using a standard proforma. No further details are given.

Data extraction
Two reviewers examined the papers using a standard proforma. Where available, the following data were extracted: admission rate of patients without coronary syndrome; detection rate of those with acute coronary syndrome unrecognised by the GP; timing of specialist assessment of patients with stable angina; and speed and accuracy of detection of those with non-cardiac chest pain.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review, which was structured around the categories stated in the data extraction information where possible.

How were differences between studies investigated?
The authors do not state how differences between the studies were investigated.

Results of the review
Nine studies (7,183 participants) were included. Three of the studies (1,236 participants) had a comparison group, one of these had follow-up of patients; three studies (1,400 participants) had follow-up of patients but no comparison group; three studies (4,547 participants) had neither comparison nor follow-up.

The included studies had methodological flaws. The limited number of studies included indicated that all the patients were reviewed within 24 hours of referral. The inclusion criteria with respect to referral diagnosis varied between the clinics. Investigation universally included an electrocardiogram, but the provision of exercise testing varied from 7 to 58% of clinic attendees. There was wide variation (25 to 75%) in the number of patients discharged back to their GP. The two studies with a hypothetical control group estimated that the RACPC prevented 213 (21% of those attending the clinic) unnecessary admissions over a 22-month period in one study and 66 (38%) such admissions over a 6-month period in the other. One study estimated that 62% of the patients with an acute coronary syndrome identified in the clinic would otherwise have been managed in the community. Overall, limited data were found for the four outcome measures, indicating possible benefits of RACPC. However, all findings could be explained by potential biases in the included studies.

Authors' conclusions
There is no compelling evidence to support the considerable investment planned in RACPC in the UK. The introduction of these clinics should include a randomised controlled prospective evaluation of their worth.

CRD commentary
The review addressed a specific appropriate question concerning the impact of RACPC on patient management. The search strategy seemed to be comprehensive, using a combination of electronic and manual searches. The selection process for inclusion, data extraction and quality assessment of the studies were performed in duplicate. The reviewed studies were clinically diverse; for example, the inclusion and exclusion criteria varied considerably in the primary studies, with one study including participants who were excluded in other studies. Details of the papers included in the review were tabulated and the narrative synthesis used was appropriate. Due acknowledgement is given to the possibility of potential biases leading to invalid results in the included papers, and the authors' cautious conclusions reflect this.
Implications of the review for practice and research

Practice: The authors state that limited data from statements of physician intent suggest that these clinics might reduce unnecessary admissions and identify patients with acute coronary syndrome who would otherwise not have been admitted. However, they acknowledge that comparison with a hypothetical statement of intent to admit or not admit is prone to bias.

Research: The authors state that the introduction of these clinics should include a randomised prospective evaluation of their worth.

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Other publications of related interest

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.