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Clinical governance in action

Patients with suspected myocardial infarction presenting to accident and emergency: an audit of clinical descriptions given by ambulance crews

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ABSTRACT

Direct admission to coronary care is an important part of a strategy to increase the use of thrombolysis and to reduce door-to-needle time. The National Service Framework describes this approach as the optimal mode of care for thrombolysis treatment delivery. In trusts where such a strategy is adopted, reliance is placed on the referral agency to appropriately triage chest pain patients. We therefore conducted an audit over three consecutive months of ambulance report forms of patients brought to the accident and emergency department who were subsequently diagnosed, treated and transferred to coronary care as having had an acute myocardial infarction. Of 36 patients who formed the audit group, 11 patients could have been triaged to go directly to the coronary care unit. Review of the remainder revealed some of the difficulties faced by ambulance personnel in clinically assessing myocardial infarction patients. This audit confirms the need to reinforce adherence to the locally agreed protocol and to positively encourage ambulance personnel to admit directly to coronary care units.

Keywords: acute myocardial infarction, ambulance service, audit

Introduction

The *National Service Framework for Coronary Heart Disease* (NSF) as a 'care blueprint' has defined how services are best provided, to what standard, with a timeframe within which they should be achieved.[1] National Health Service (NHS) trusts are also charged with putting into place agreed protocols/systems of care so that people admitted to hospital with proven myocardial infarction (MI) are appropriately assessed and offered treatment of proven clinical and cost-effectiveness to reduce their risk of disability and death.

At the author's hospital, the accident and emergency department (A&E) and the coronary care unit (CCU) provide points of entry for patients thought to be suffering an acute MI. Both areas have the facility for administering thrombolysis. Direct admissions to CCU by ambulance personnel, of patients thought to be suffering an acute MI, are guided by a locally agreed protocol (see Box 1).

A review of the service after the direct admissions to CCU policy had been in operation for one year, noted that a significant number of patients diagnosed as having had an acute MI were being assessed and treated in A&E. We wanted to explore the reasons why patients with suspected MI were taken to A&E by ambulance crews, instead of direct admission to the CCU as this may reveal areas which could be developed to improve care provision.

Box 1 Admission criteria for ambulance crews

1	Central chest pain	Yes/No
2	Chest discomfort > 15 minutes	Yes/No
3	Age over 35 years	Yes/No
4	Clinical suspicion of MI	Yes/No

If the answer to all four questions is Yes; arrange direct admission to CCU.

Method

Patients presenting to the A&E department, diagnosed as having an acute MI, and transferred directly to CCU formed the audit group. The mode of patient presentation to the A&E department was noted. If the patient was brought to A&E by ambulance personnel the ambulance patient report form (PRF) was examined for the ambulance personnel's clinical description of the case by recording 'verbatim' the chief

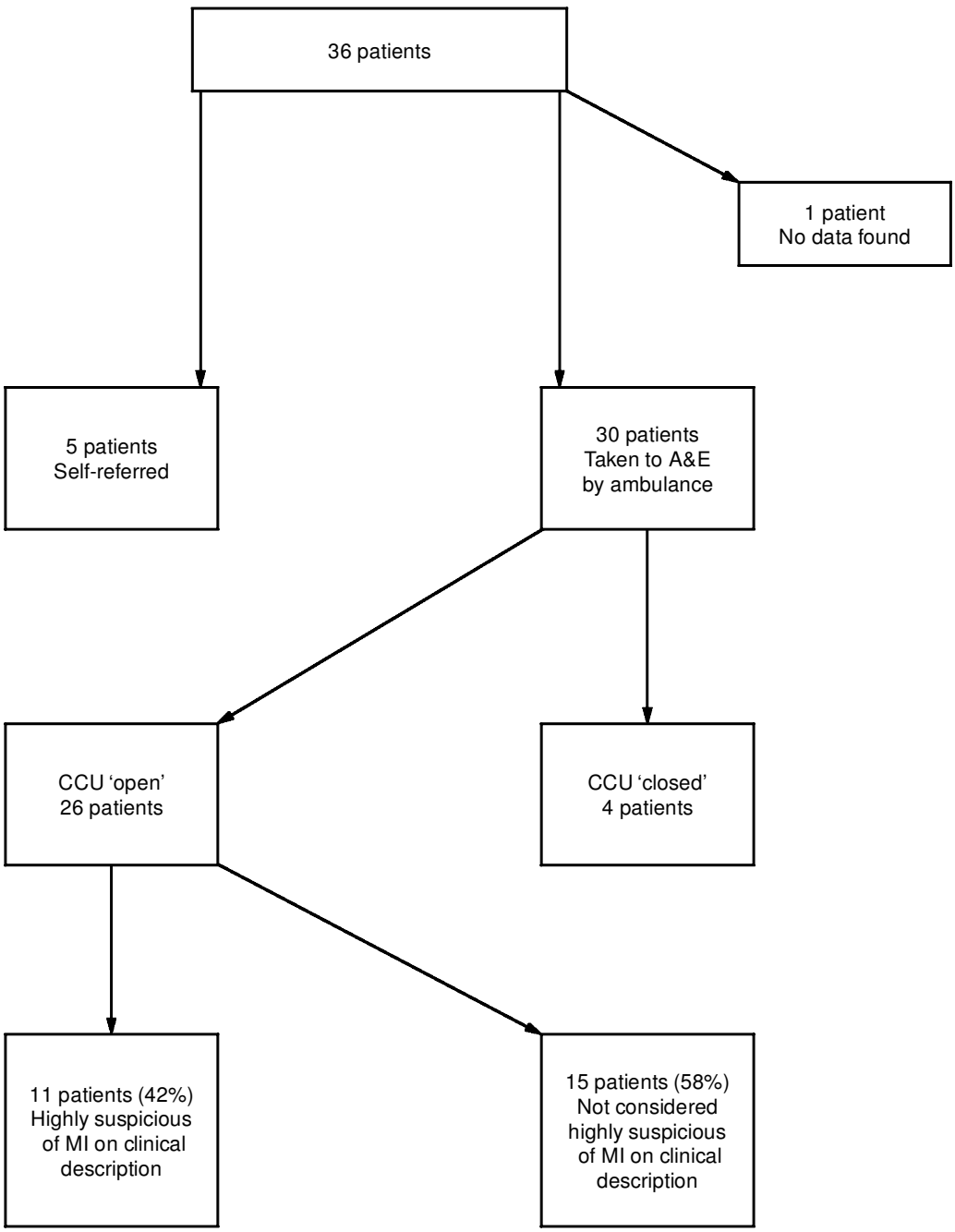

Figure 1 Patients diagnosed as having an MI presenting to A&E

complaint and history of the chief complaint. A record was made of the time of presentation and matched to records of whether the CCU was 'open' or 'closed' to direct admissions. The audit period consisted of three consecutive months. A cardiologist reviewed each of the clinical descriptions from the PRFs of patients who were taken to A&E by ambulance personnel when the CCU was 'open' and made a judgement of whether the descriptions given were considered highly suspicious or not highly suspicious of MI.

Results

During the audit period, 36 patients were diagnosed in A&E as having had an acute MI and transferred to CCU; five patients self-referred to A&E; 30 patients were brought into A&E by ambulance; one patient's ambulance PRF could not be located. Of the 30 patients brought into A&E, 26 could potentially have been taken to the CCU; 11 of these were judged to be highly suspicious of an MI on the PRF description, 15 were not considered highly suspicious of an MI on the PRF description (see Figure 1).

An analysis of the broad descriptive themes highlighted in the PRF gives an insight into the process of clinical decision making of the ambulance personnel in these particular interactions (see Figure 2).

Discussion

Organisational strategies designed to improve the care of MI patients by transmitting potential patients into a designated cardiac care facility rely heavily on collaboration and partnership with the referral agency. A locally agreed protocol and admission process at the authors' hospital resulted in a significant rise of patients being referred to CCU by ambulance crews. Direct admission to CCU rose

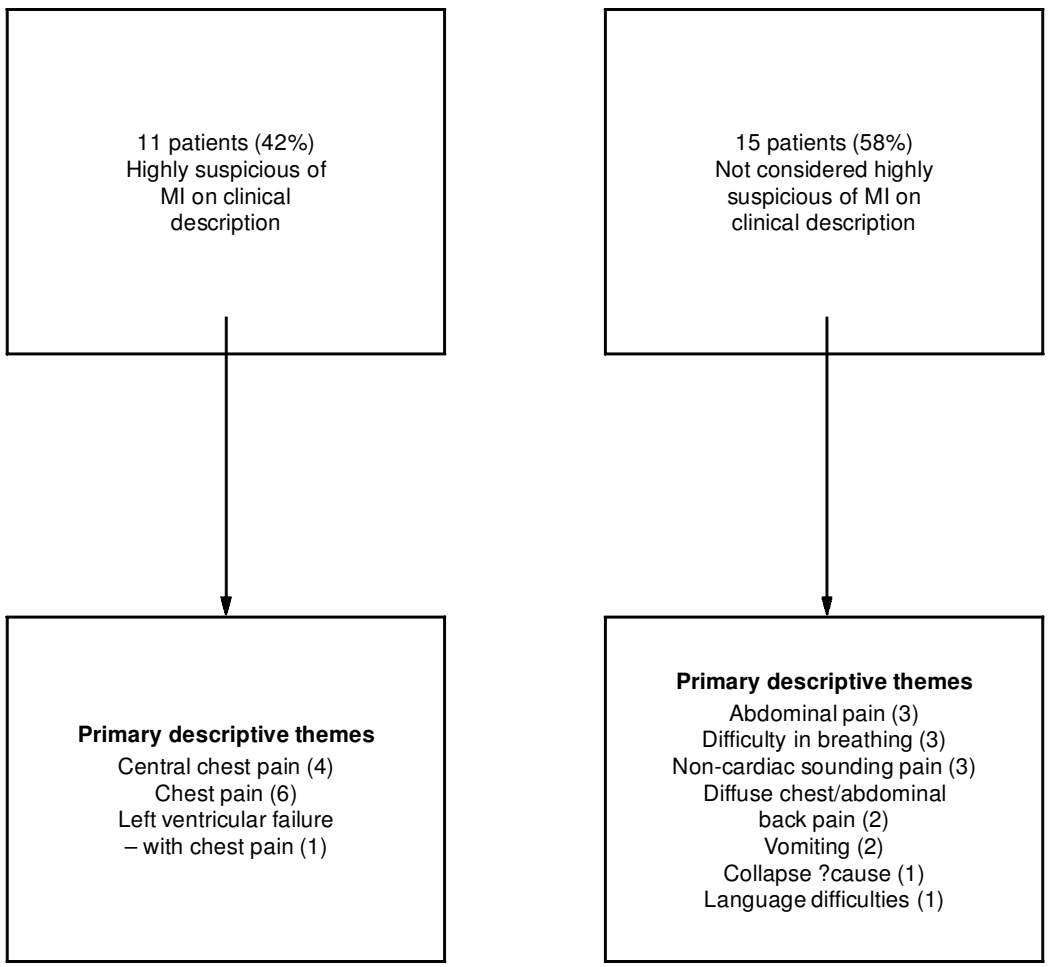

Figure 2 Descriptive themes given by ambulance personnel

from an average of six patients per month in the five months prior to implementation of the locally agreed protocol and admission process, to an average of 31 patients per month in the six months following. In these six months, 175 patients were admitted directly to CCU by the ambulance staff, 54 (31%) were proven to have had an MI by troponin I analysis and sequential electrocardiograms, 28 (16%) had thrombolysis.[2] Refining the referral process onto the CCU by the ambulance service in order to increase the numbers of MI patients, without the addition of new technology could prove taxing. This audit demonstrates some of the factors that can influence care provision.

A majority of patients (58%) taken to A&E by ambulance personnel, who were subsequently transferred to CCU with the diagnosis of acute MI, had a written clinical description on the ambulance service PRF which was not considered highly suspicious of an MI. Therefore direct admission to CCU would not have been deemed appropriate. This highlights the difficulty ambulance personnel are presented with in interpreting the spectrum of clinical manifestations that acute MI can present with, and the importance of thrombolysis availability in an A&E department.

A significant minority (42%) of patients taken to A&E by ambulance personnel had a clinical description on the PRF which was considered highly suspicious of MI and direct admission to CCU could have been considered.

Reasons why A&E may be preferred to CCU as a portal of entry are multifactorial, but waning enthusiasm on behalf of a referral agency, requiring reinforcement of an agreed policy, has been noted in a previous study.[3]

The results of this audit were presented at a multidisciplinary liaison meeting between ambulance and hospital staff. A number of recommendations have been made, in particular a reminder to all ambulance crews regarding the criteria for admission to CCU. To positively encourage ambulance personnel to engage with this care strategy, nursing and medical staff attempt immediate feedback on an individual basis when a patient is referred onto CCU via the direct admission process, an approach that seems to be appreciated by the ambulance personnel.

REFERENCES

1 Department of Health (2000) *National Service Framework for Coronary Heart Disease: modern standard and service models*. The Stationery Office: London.

2 Smallwood A, Horton R, Pidgeon J *et al.* (2002) *Direct Admissions to Coronary Care: impact on door-to-needle times*. Unpublished Report. New Cross Hospital.

3 Burns JMA, Hogg KJ, Rae AP, Hillis WS and Dunn FG (1989) Impact of a policy of direct admission to a coronary care unit on use of thrombolytic treatment. *British Heart Journal* **61**: 322–5.

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