Influences on general practitioners’ use of pre-hospital thrombolysis: a qualitative study

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Abstract

Background The aim of the study was to determine factors influencing general practitioners’ (GPs’) decisions to provide pre-hospital thrombolysis for acute myocardial infarction.

Method Semi-structured, face-to-face interviews were carried out with 21 GPs in Grampian (10 rural; 11 urban).

Results The GPs believed that thrombolysis has an important role in the management of acute myocardial infarction, but urban practitioners were not convinced that time savings could be made by GP provision. Practical issues such as taking an electrocardiogram, ascertaining contra-indications in patients, maintaining skills, equipment, and workload were barriers preventing the provision of pre-hospital thrombolysis. There was a sense that primary care needed to feel that it is initiating change rather than having change thrust upon it.

Conclusion Decision-making processes in primary care are complex, even when the evidence supporting change is strong. Health service planners wishing to implement successful change need to consider other issues such as practical matters, support structures, current morale and practitioner perceptions of control.

Keywords: thrombolysis; general practice; myocardial infarction; community

Introduction

Of the 300 000 people in the United Kingdom who have a myocardial infarction every year, about 50 per cent die within 28 days,1 and 25 per cent within 2 h of the onset of symptoms. Prompt thrombolysis reduces this mortality.2 In 1994, the British Heart Foundation published consensus guidelines that emphasized the importance of rapid provision of basic and advanced life support; adequate analgesia; accurate diagnosis; and when indicated, thrombolytic treatment.3 The recent National Service Framework (NSF) for Coronary Heart Disease for England states that thrombolysis should be given within 60 min of calling for professional help.4

Little is known about what factors influence general practitioners (GPs) when deciding whether or not to provide thrombolysis. To explore these issues we undertook a qualitative study of GPs in rural and urban locations of Grampian. At the time of the study Grampian Health Board promoted pre-hospital thrombolysis using urokinase, an unlicensed preparation but with better administration and storage properties than the other thrombolytics then available (Tenecteplase, introduced since the study was conducted, is now the recommended product). An audit at that time revealed no use of thrombolysis by urban practitioners and 35 per cent use by rural practitioners.5 Five years after that study was conducted the debate continues about mechanisms to reduce ‘call-to-needle times’ to meet the NSF target.6,7

Method

A semi-structured interview schedule was designed covering management of chest pain and GP role, the use of evidence, safety and practicality of delivering pre-hospital thrombolysis, skills and workload. The interview schedule was piloted then used in a purposive sample of 20 GPs to include: doctors working in urban and rural settings; males and females; different levels of support for GP-administered thrombolysis.

Practitioners were identified in a two-step process. In rural areas there was an assumption that the practice’s use of urokinase, as indicated by prescribing data, demonstrated support of pre-hospital thrombolysis. As no urban practitioners were giving thrombolysis in the community, support for pre-hospital thrombolysis was identified by networking. From the identified cohorts, five supportive and five non-supportive practices were randomly selected in both rural and urban settings. A GP was then randomly selected from each practice and invited to participate in the study. No practitioner refused an interview. Face-to-face semi-structured interviews lasting 15–30 min were carried out in late 1998. Interviews were tape recorded and fully

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The transcripts were subjected to content analysis with themes identified by constant comparative analysis. These are reported below with illustrative quotes in the Table.

Results

Practice policies for managing patients with chest pain

Three practices had a written policy. Most practitioners targeted patients with ischaemic heart disease with advice about what to do if prolonged chest pain occurred. One practice leaflet included this advice. Most rural practitioners carried an electrocardiograph (ECG) and defibrillator when attending a patient with chest pain, compared with one urban practitioner.

Role of GPs in pre-hospital thrombolysis

All practitioners believed the evidence that pre-hospital thrombolysis is beneficial, although urban practitioners did not feel that community provision in urban areas resulted in time savings because hospital facilities could be accessed quickly. Some felt that many patients with chest pain by-passed them by contacting ambulance services directly. Delays in call-to-needle time were attributed by urban practitioners to delays after hospital admission. These practitioners felt that they were being asked to change their clinical practice because of deficiencies in the hospital sector. Suggested alternative means of provision included a cardiac ambulance manned by hospital staff and an ‘emergency’ general practice service.

Practical issues around pre-hospital thrombolysis

In general, the practitioners felt that there were usually no major problems in diagnosing acute myocardial infarction on clinical grounds, although accuracy of ECG interpretation was a concern. Current recommendations stipulate an abnormal ECG as a prerequisite for thrombolysis. A high level of confidence was expressed regarding the ability to provide advanced cardiac life support. None of the practitioners without access to a defibrillator felt that they should bear the cost of purchasing this equipment. Pressure of time was not considered to be a problem by rural practitioners, unlike their city colleagues, who felt that the need to run routine or emergency surgeries whilst on-call could lead to tensions between meeting the needs of a patient with chest pain and others within the practice.

Table  Illustrative quotes of main themes identified

Role of general practitioners in pre-hospital thrombolysis

‘The evidence for use of thrombolysis is unequivocal. What hasn’t been studied is as to how it can be applied practicably. It’s, what a lot of people haven’t appreciated is that it’s very different, very different situations that pertain in rural practice and town practice’ Urban GP, male

‘It’s administering emergency treatment which is far as I’m aware we are not really contracted to do, you know, my job is to go and assess and transfer to the hospital, if I think it necessary’ Urban GP, female

‘I think there are concerns that this whole thing has been hospital driven rather than GP driven ... perhaps a lack of consultation with GPs as to ways round the practice difficulties.’ Rural GP, male

Practical issues around pre-hospital thrombolysis

‘You are never one hundred percent certain about it. It is a big decision to make. You have to be fairly accurate with your diagnosis but it still causes concern’ Rural GP, male

‘If you are talking about altering your whole working day and altering your whole structure on the basis of one or two patients then I think you may be giving a raw deal to other patients.’ Urban GP, female

Safety of thrombolysis

‘My major concern would be giving it to somebody who obviously shouldn’t be getting it and has a bleed’ Urban GP, male

‘Two of our patients have died as a result of having had thrombolysis ... I know that is not a scientifically valid sample, but it does cloud your clinical judgment, or it does, that’s wrong, it does make you a little bit uneasy, I know the evidence says that it’s in balance a good thing to do but if you seem to have a preponderance of bad results in your own practice you tend to be influenced by that.’ Rural GP, male

Keeping skills and knowledge up to date

‘Because an individual doctor would be putting his skills into practice one would hope on a pretty infrequent basis it would require very frequent updating and reinforcing to keep skills maintained.’ Urban GP, male

Use of an unlicensed product

‘I’m thoroughly of the opinion that it has a big role to play but I’m not happy with prescribing an unlicensed drug to someone who’s not in the best position to give informed consent ... but you know as a GP prescribing an unlicensed product I feel that we are on a bit of a hiding to nothing and there are potentially serious medico-legal sequelae from that, especially if something goes wrong’ Rural GP, male

General workload issues

‘If this were in isolation I think I’d be very enthusiastic and say yes go for it, ‘cause it’s quite exciting and potentially life saving and yes it’s obviously valid, but it’s just on top of umpteen things and there seems to be no end to them either’ Urban GP, female

‘It is a shift of workload, I don’t see why they can’t employ an SHO in cardiology to do the job’ Urban GP, female
Most urban practitioners felt that if pre-hospital thrombolysis were to become their responsibility, close collaboration with the ambulance service would overcome many practical issues such as provision of ECG and defibrillator, taking of an ECG, gaining intravenous access and calming anxious relatives.

**Safety of thrombolysis**

There was a general feeling that a favourable risk–benefit ratio supported the use of pre-hospital thrombolysis. Unwanted bleeding and the possibility of re-perfusion arrhythmias were reported as side effects. Two doctors had witnessed adverse events whilst giving thrombolysis, which had made them uneasy about further provision.

**Keeping skills and knowledge up-to-date**

Continuing professional development was reported as essential, especially with respect to: ECG use and interpretation; defibrillation and advanced cardiac life support; intravenous cannulation; indications and contra-indications of thrombolysis. Rural practitioners (especially those who work in community hospitals), who may be using their skills more often than their urban counterparts, were less concerned about maintaining skills.

**Use of an unlicensed product**

Concerns about using an unlicensed product, and differing interpretations of related medicolegal advice, resulted in some doctors not using urokinase, or any other thrombolytic.

**General workload issues**

Some practitioners felt that primary care was under increasing pressure as a result of a general increase in demand and a shift of services from secondary to primary care. Pre-hospital thrombolysis was seen as a further increase in workload and possibly outside the current NHS contract. Resentment was expressed about the manner in which local policy to encourage pre-hospital thrombolysis had been managed. Change was seen as being introduced without appropriate consultation.

These negative feelings, however, were not universally held, and some welcomed the translation of research into primary care practice.

**Discussion**

The study used semi-structured individual interviews to explore both clinical and attitudinal aspects of GP administration of thrombolysis. The approach ensured that key topics were covered whilst allowing the interviewer to explore in depth other issues, which emerged during the interview. There were difficulties in selecting the purposive sample of practitioners supportive, or otherwise, of pre-hospital thrombolysis. In rural locations, prescription data about urokinase use were used to indicate favourable or unfavourable attitudes, but it found that these data were not always a good indicator. Practitioners who supported the use of thrombolysis and who were using another agent would have been excluded from our sampling frame. A different method of selecting GPs in urban areas had to be used, as none provided pre-hospital thrombolysis. The chosen method was based pragmatically on informed opinion. One practitioner was incorrectly categorized, and was replaced. Despite these limitations, we believe that we have captured the key issues arising from the interviews.

There is unequivocal acceptance that early thrombolysis has a central role in the effective management of acute myocardial infarction, but the role of GPs was controversial. This was polarized across the urban–rural divide. Urban practitioners highlighted their practical, clinical and ethical concerns, which they did not perceive to impede the achievement of ‘gold standard’ call-to-needle times because of their location near the main hospital. Rural practitioners, possibly because of longer transportation times to hospital, were more prepared to provide thrombolysis. In addition, although sharing many of the concerns expressed by their urban colleagues, rural practitioners did not seem to allow these to influence their clinical practice. This urban–rural split may reflect a fundamental difference in the spectrum of clinical responsibilities and tasks accepted as the norm by the two groups, which in turn will reflect the type of practitioners choosing to work in the different settings.

Another underlying issue was a feeling that the GPs’ role was to get patients to hospital quickly, with subsequent care the hospital’s responsibility. Some GPs felt resentful that they were being asked to change their clinical practice in order to address perceived problems within the hospital. Individuals may be more likely to change their practice, if they feel a sense of ownership in the decision to change, or if key opinion leaders encouraging change identify with their concerns.

Change in practice is less likely to occur when morale is low. Many practitioners (from both urban and rural areas) felt that primary care workload is increasing, and that thrombolysis was an additional task. All practitioners agreed that they should not bear any of the costs associated with the purchase of equipment for thrombolysis, especially if seen to be just to meet Health Board targets. Several practitioners admitted to being influenced by anecdotal evidence. It remains a very difficult component of the decision-making process to rationalize between experience and evidence.

General practitioners consider many factors when interpreting evidence: was previous research conducted in the same working environment as their own; are they properly equipped to implement new evidence-based methods; is the process being initiated by GPs themselves or by others? Implementation of change involves more than simply understanding scientific evidence. Our study provides a reminder that co-operation between all relevant parties is needed if change is to occur.

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Contributors
The work was conducted while P.W. was a final year elective student attached to the Department of General Practice and Primary Care. C.B., P.H. and L.R., who had the original idea for the study and who designed the study, jointly supervised P.W. P.W. and C.B. were involved in the analysis. P.W., C.B., P.H. and L.R. were responsible for writing the paper. C.B. and P.H. will act as guarantors for the paper.

References

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