

# PRACTICE OBSERVED

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## *Practice Research*

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### **General practitioners' management of acute myocardial infarction and cardiac arrest: relevance to thrombolytic treatment**

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A questionnaire was sent to 61 general practitioners who had participated 18 months previously in a study of their experience of cardiopulmonary resuscitation and defibrillation in acute myocardial infarction. Fifty (82%) replies were received.

Only 16 of the 50 respondents thought that every general practitioner should have a defibrillator, but 46 thought that every group practice should have one. Most practitioners felt the need for more tuition and practice in advanced life support, but 15 did not have the practice defibrillator with them when on call. Only nine doctors normally had an electrocardiograph with them when on call, most relying on clinical acumen to make an operational diagnosis; there appeared to be reluctance to use any drugs other than opiates and atropine in the management of acute myocardial infarction.

This study highlights the difficulty of maintaining readiness to deal effectively with myocardial infarction in the community and the problems of relying on the electrocardiogram in deciding who should be given thrombolytic treatment.

#### **Introduction**

We have previously described a study of prehospital coronary care provided by general practitioners in Grampian.<sup>1</sup> Each group

practice participating in the study was equipped with a defibrillator, which was held by the doctor on call for emergencies each day. A general practitioner was the first medical contact in 92% of heart attacks, and on 80% of occasions the doctor had the practice defibrillator at hand. Resuscitation was undertaken by general practitioners in 5% of patients with heart attacks to whom they were called, the 28 day survival rate being 28%. Though these results compared very favourably with those reported by mobile coronary care units, we estimated that an individual general practitioner might be faced with attempting a resuscitation only once in two years, so would need to maintain a high level of readiness and proficiency to keep up this success rate. The following study was carried out because we suspected that general practitioners would be less likely to have the defibrillator with them once the novelty of possessing it had worn off and when data about its use were no longer being collected.

#### **Present study**

Eighteen months after the end of data collection in the original study 61 general practitioners who had taken part were sent a questionnaire asking about their management of acute myocardial infarction and cardiac arrest. Recent trials of thrombolytic treatment have shown that the reduction in mortality is greater with earlier use,<sup>2,3</sup> so we also wanted to know whether these general practitioners would consider giving this form of treatment to patients being seen a median of two hours after the onset of symptoms.

Thrombolytic treatment carries the risk of serious side effects and most trials therefore require electrocardiographic confirmation of the diagnosis before treatment is begun. It may be particularly hazardous for patients with non-infarct causes of chest pain such as pericarditis or aortic dissection. Questions about the general practitioners' reliance on the electrocardiogram for diagnosis were therefore included and their proficiency in reading electrocardiograms tested.

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## Results

Of the 61 general practitioners sent the questionnaire, 50 (82%) replied. All respondents said that they would initiate cardiopulmonary resuscitation if they witnessed a cardiac arrest and 42 were confident that they would perform it correctly. Nevertheless, 39 said that they would like additional practice and tuition in cardiopulmonary resuscitation.

When asked whether they usually had the practice defibrillator with them when on call 35 respondents replied affirmatively and 48 said that they would use it in a cardiac arrest; 41 were confident that they would do so correctly. Even so, 34 of the respondents said that they would like additional practice and tuition in using a defibrillator.

Only 16 respondents thought that every general practitioner should have a defibrillator, but 46 thought that every group practice should have one. Four doctors doubted that either a group practice or individual practitioners should have a defibrillator.

Of those who replied, only nine doctors usually had an electrocardiograph with them when on call, though 29 said that they would record a tracing in a patient suspected of having myocardial infarction. Thirty three respondents correctly identified a normal electrocardiogram, 37 an electrocardiogram showing acute myocardial infarction, 33 one showing left bundle branch block, 19 one showing left ventricular hypertrophy, and seven one showing acute pericarditis.

All respondents said that they carried morphine or diamorphine and would use it for pain relief in myocardial infarction, and 43 carried and would use atropine for a patient with bradycardia and hypotension. Only 28 respondents said that they would use lignocaine intravenously for a patient with a heart attack complicated by ventricular tachycardia.

The benefits and risks of intravenous thrombolytic treatment were set out in a letter accompanying the questionnaire; only 23 respondents said that they were prepared to give this treatment.

## Discussion

In a region with a good standard of general practice and no deputising service a self selected group of general practitioners were providing prehospital coronary care with commendably short response times and proved proficiency in resuscitation.<sup>1</sup> Eighteen months after the end of a study of the effectiveness of resuscitation there was evidence that some of the participants were less well prepared to deal with cardiac arrest, as they did not usually have the practice defibrillator with them when on call. This underlines a central problem in resuscitation from cardiac arrest in the

community: How can the necessary readiness to deal with a life and death situation be maintained when the event occurs so infrequently in any individual's experience?

Another problem was highlighted by the questionnaire: most of the general practitioners who responded felt the need for more tuition and practice in both cardiopulmonary resuscitation and use of the defibrillator. Who should provide this training and retraining? Should proficiency in these skills be audited? If so, by whom?

In clinical trials of thrombolytic treatment the requirement of confirming myocardial infarction by electrocardiography is a safeguard which protects patients without myocardial infarction from the adverse effects of the treatment. In general practice, however, an operational diagnosis is usually made on clinical grounds alone and requiring an electrocardiogram would preclude many patients from early treatment, as most general practitioners do not have an electrocardiograph with them. Also, in the early stages of infarction the electrocardiogram is often equivocal. If more reliance was placed on the electrocardiogram probably myocardial infarction would be diagnosed less often and there would be more false positive diagnoses. If general practitioners are to give thrombolytic treatment the balance of advantage might well be in not recording an electrocardiogram at all but in relying, as at present, on clinical acumen to reach a diagnosis. Even so, some patients without infarction would receive thrombolytic treatment.

Finally, there appeared to be some reluctance on the part of these general practitioners to use any drugs other than opiates and atropine in acute myocardial infarction.

I am most grateful to the general practitioners who participated in the study and spared the time to reply to the questionnaire.

## References

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- 2 Gruppo Italiano per lo Studio della Streptochinasi nell'Infarto Miocardico (GISSI). Effectiveness of intravenous thrombolytic treatment in acute myocardial infarction. *Lancet* 1986;i:397-401.
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(Accepted 11 August 1987)

## 100 YEARS AGO

At a recent meeting of the Académie de Médecine, M. Vallin made some remarks relative to the addition of alcohol to wines. In his opinion, the committee was right in making no distinction between the kinds of alcohol employed, although he thought that the addition of a small quantity of perfectly pure alcohol was much less hurtful than the same quantity of an inferior quality of spirit made from cider and rotten apples. There were two reasons why he would vote against the adulteration. In the first place, in the present state of science, it was not possible to distinguish whether the alcohol so added was very pure ethylic alcohol, or whether it contained a notable proportion of those impurities and toxic principles among which the so-called higher alcohols were only one. It was the impurity, rather than the source of the alcohol, that constituted the danger of vinage. The second reason why vinage should not be tolerated was, that in limiting the addition to 2° to wines marking primitively less than 10°, it would be impossible to control its application. Chemists appeared to be unanimous in declaring that the exact quantity of alcohol so added could not be determined by analysis. Therefore, there would always be, in consequence of this difficulty, a toleration of from 1° to 2° of vinage, and care should be taken that this was not increased. To the conclusion of the committee that "in order to respond to certain exigencies of transport and of conservation, the addition of sugar to the must may be authorised," M. Vallin replied that this would, perhaps, compromise the Academy, which would be thus extolling a technical process, and affirming its hygienic value, on the strength of what were, in reality, only theories and presumptions. M. Vallin expressed his regret that the committee, through an exaggerated fear of touching on fiscal questions, should have suppressed the following sentence: "It is proposed to reduce from 15° to 12° the limit beyond which an additional tax may be imposed on wines of general consumption." According to M. Vallin, this was an excellent means of affirming the truth that, from a hygienic point of view,

there was everything to gain by encouraging the use of natural wines of low alcoholic strength, but possessing some alimentary value, and imposing a tax on wines of high alcoholic strength, which were a luxury, and often injurious. The increasing use for several years of adulterated wines, had produced a taste for strong wines in France, so that a light wine, marking 8° or 9°, was now considered to be insipid and flat. It was a duty to struggle against this corruption of taste. It could not be doubted that a wine was more capable of producing drunkenness, and even chronic alcoholism, when it marked 15°, than when it marked only 9° or 10°. M. Vallin could see no inconvenience in imposing a heavier tax on wines rich in alcohol, if the tax on natural wines mixed with the former was lowered in the same proportion. The French Under-Secretary of State for Finance had promised to exempt from additional tax the natural wines marking more than 12°, and to reserve this measure for foreign wines. Nearly the whole of the wines imported into France marking 16°, were adulterated with alcohol. In conclusion, M. Vallin said that the discussion at the Academy had demonstrated the insufficiency of our knowledge on two principal points: first, as to what were the toxic substances, besides amylic, propylic, butylic alcohol, found in badly purified alcohols, and what was their special action on the organism? and, secondly, how could these toxic principles be recognised, and their quantities determined, when the alcohol which contained them was mixed with wines and other complex liquids? If these two questions could be solved, then a great step would be taken in the direction of the prevention and suppression of alcoholism. He thought it was the duty of the Academy to hasten the solution of these problems by facilitating researches through subventions and prizes. A positive basis would thus be obtained for sanitary police measures, which were at present extremely difficult to enforce.

(*British Medical Journal* 1887;i:73.)