

The management of suspected myocardial infarction by Scottish general practitioners with access to community hospital beds

ROBERT LIDDELL

JAMES GRANT

JOHN RAWLES

SUMMARY. General practitioners working in 20 community hospitals in Scotland participated in a survey of the management of myocardial infarction. During one year they suspected acute myocardial infarction in 451 patients. Of these patients, 278 (62%) were admitted to a community hospital, 125 (28%) to a district general hospital and 48 (11%) were kept at home. The main reasons given for admission to a community hospital were for monitoring and investigation, while the main reasons for admission to a district hospital rather than a community hospital were the relative youth of the patient and the severity of the illness. Acute myocardial infarction was confirmed in 323 (72%) cases, but in 26 (6%) cases the final diagnosis was other than ischaemic heart disease. Patients with acute myocardial infarction who entered a community hospital did so a median of two hours 25 minutes after the onset of symptoms. Among 18 patients admitted to a community hospital in whom resuscitation was attempted after cardiac arrest four (22%) were subsequently discharged from hospital. The mortality rate from acute myocardial infarction in the community studied was 171/418 (41%), of whom 95 died suddenly before coming under medical care.

It is concluded that in rural areas of Scotland an acceptable standard of care for patients with acute myocardial infarction, including the administration of thrombolytic therapy, could be provided rapidly by general practitioners working in community hospitals.

Introduction

THROMBOLYTIC therapy is rapidly being accepted as standard treatment for acute myocardial infarction, and there is evidence that the earlier it is given the greater the benefit.^{1,2} Hitherto, thrombolytic therapy has mostly been used in hospital coronary care units but such units treat only a fraction of the cases of acute myocardial infarction that occur in the community.^{3,4} Many patients are managed in general medical wards in district and community hospitals, and a small proportion are kept at home. The mortality rates of 10–13% among those given placebo in recent trials of thrombolytic therapy^{1,2,5,6} suggest that the patients selected for admission to a coronary care unit may be unrepresentative of all patients with myocardial infarction as mortality rates of 36–63% have been found in community studies.^{3,4,7} If the benefits of thrombolytic therapy are to be made more widely available then treatment will need to be instituted earlier and not confined to designated coronary care units.

R Liddell, MRCP, general practitioner, Turriff, Aberdeenshire. J A Grant, MRCP, MRCP, general practitioner, Auchterarder, Perthshire. J M Rawles, BSc, FRCP(Edin), senior lecturer, Department of Medicine and Therapeutics, University of Aberdeen.

Submitted: 10 October 1989; accepted: 18 January 1990.

© British Journal of General Practice, 1990, 40, 318–322.

Part of the reason for higher mortality rates in community studies is that deaths from myocardial infarction occur most commonly soon after the onset of symptoms. Since the median delay in admission to hospital in an urban area is three to five hours,^{8,9} patients who survive to be admitted to hospital have a lower mortality risk than those seen at an earlier stage in the community. Another reason is that admission to hospital is often restricted, in practice if not by policy, to younger patients, who have a lower mortality risk.^{10,11}

In rural areas a journey time must be added to the delay in hospital admission and in many areas in Scotland this may be more than an hour. However, many Scottish towns and villages that are a long way from a district general hospital have community hospitals in which general practitioners look after their own patients.¹² In 1987, before the benefits of thrombolytic therapy were fully appreciated, the Scottish Association of General Practitioner Community Hospitals commissioned a survey of the management of myocardial infarction by general practitioners with access to community hospital beds. In this paper the results of this survey are reported, and the implications for the provision of coronary care in rural areas discussed.

Method

General practitioners working in 20 community hospitals serving a population of 149 000 all over Scotland voluntarily participated in the survey which ran from 1 January to 31 December 1988. During that time a questionnaire was completed for every patient with suspected myocardial infarction, giving details of presentation, management and outcome, and reasons for admitting the patient to community or district hospital, or keeping the patient at home. It was not possible to apply an independent check on the occurrence of myocardial infarction so we cannot be certain that the returns from the general practitioners are complete. Not all parts of all the questionnaires were completed, so for some responses the total is not 100%.

The community hospitals, serving semi-rural and rural populations, were located in market towns a mean of 38 miles from a district general hospital (range four to 120 miles), and ranged in size from six to 43 beds (mean 16). Three hospitals were on islands from which the nearest district general hospital could only be reached by sea ferry or air ambulance. All the hospitals in the survey are equipped with defibrillators and electrocardiograph machines, and all had a 'cardiac arrest' trolley or box containing equipment for use in such an emergency. However, seven hospitals did not have an electrocardiograph monitor, and in 10 hospitals no formal tuition in cardiopulmonary resuscitation had been given to the nursing staff within the previous three years. In a few cases individual nurses took the responsibility for defibrillation if no doctor was present, but in none of the hospitals was defibrillation officially recognized as a nursing duty.

A record was also kept of cases of sudden death occurring in the participating communities where there was at least circumstantial evidence that the victim had ischaemic heart disease, and the final event was acute myocardial infarction. Postmortem confirmation of the diagnosis was sought and any attempts at resuscitation were noted.

Unpaired *t*-tests were used for comparison of means and chi-square tests for comparison of proportions.

Results

Over the study year acute myocardial infarction was suspected in 451 patients. Of these patients 62% were admitted to a community hospital, 28% to a district hospital, and 11% were kept at home (Table 1). Patients admitted to district hospitals were significantly younger than those treated in community hospitals or at home ($P<0.001$).

The commonest reasons given for admission of a patient to a community hospital were for diagnostic investigations, surveillance by electrocardiographic monitoring and because there were inadequate facilities at home (Table 2). Living alone was also an important factor. Among the 125 patients admitted to a district rather than a community hospital the commonest reasons cited for admission were the relative youth of the patient (48%) and the severity of the illness (41%). Lack of facilities at the community hospital was given as a reason in 26% of cases, and lack of beds in 18%. Only a minority of patients expressed a preference for admission to the district hospital (13%).

Forty eight patients with suspected myocardial infarction were kept at home. In some cases this was because the initial suspicion was not confirmed (19%), or the diagnosis was only made in retrospect when an electrocardiogram recorded later showed evidence of recent infarction or cardiac enzymes were found to be elevated when the results came back from the laboratory (15%). The commonest reasons, however, were that the patient was elderly (42%), or preferred to stay at home (29%).

In 72% of cases where myocardial infarction was suspected it was subsequently confirmed by electrocardiogram or measurement of cardiac enzymes (Table 3). There were no significant differences in the proportions of patients with confirmed infarction by place of treatment. Hereafter the results deal with confirmed cases of acute myocardial infarction only.

Table 1. Age and sex of patients by place of treatment.

	Community hospital	District general hospital	Home	All
Number (%) of patients	278 (62)	125 (28)	48 (11)	451 (100)
Mean age (SD) (years)	70.4 (10.8)	61.4 (11.2)	71.0 (9.1)	67.8 (11.4)
Age range (years)	30–103	26–83	50–86	26–103
Number (%) of men	162 (58)	81 (65)	24 (50)	267 (59)

SD = standard deviation.

Table 2. Reasons why patients were admitted to a community hospital (more than one reason could be given).

	Number (%) of patients (n = 278)
Investigation	173 (62)
Monitoring	124 (45)
Inadequate home facilities	71 (26)
Lives alone	66 (24)
Nursing	64 (23)
Special treatment	40 (14)
Pressure from relatives	24 (9)
Overcrowding	2 (1)
Other	5 (2)

n = total number of patients.

Presentation and prognosis of acute myocardial infarction

The mean age for the 323 patients with myocardial infarction was 68 years (range 32–103 years). Figure 1 shows the distribution of patients by age and by place of treatment. The modal age of myocardial infarction was 70 years; there was a tendency for younger patients to be admitted to a district hospital and older patients to be treated at home.

All but 8% of the 323 patients complained of chest pain when first seen. Most were seen at home; only 29 presented at the doctor's surgery or at the outpatient department of the community hospital. When first seen 11% had bradycardia, 30% tachycardia, 30% were hypotensive and 8% had an arrhythmia.

Doctors admitting patients to hospital were asked to assess the patients' prognosis as good and expected to survive, poor and expected to die, or intermediate. In Table 4 the outcome is compared with the prognosis. Only 8% of those with a good prognosis died, compared with 64% of those with a poor prognosis. However, the initial physical findings were not such good

Table 3. Final diagnosis for the 451 patients by place of treatment.

	Number (%) of patients			
	Community hospital (n = 278)	District general hospital (n = 125)	Home (n = 48)	All (n = 451)
Myocardial infarction	194 (70)	92 (74)	37 (77)	323 (72)
Ischaemic heart disease	66 (24)	21 (17)	7 (15)	94 (21)
Chest pain not yet diagnosed	3 (1)	4 (3)	1 (2)	8 (2)
Other diagnosis	15 (5)	8 (6)	3 (6)	26 (6)

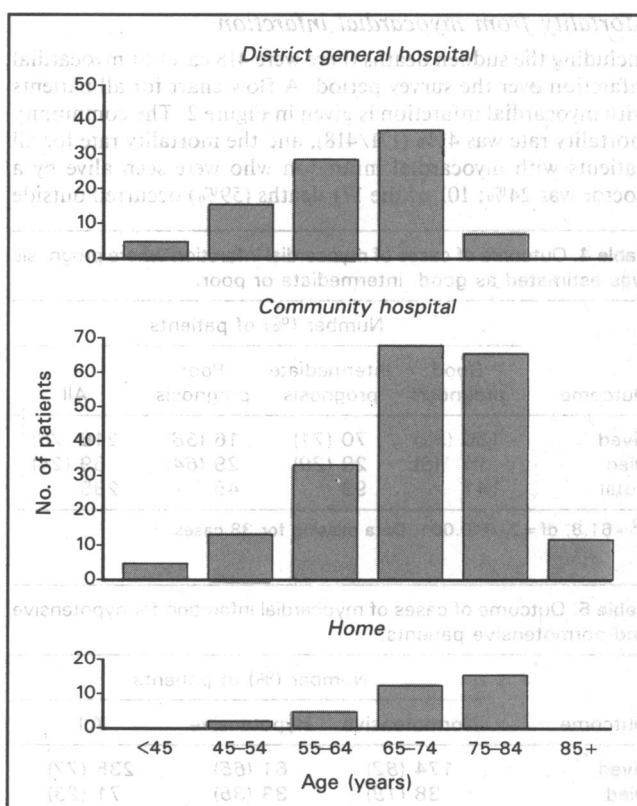


Figure 1. Age distribution of patients with acute myocardial infarction by place of treatment.

predictors of death: mortality rates were not significantly increased in those with initial bradycardia, tachycardia or an arrhythmia. The presence of hypotension when the patient was first seen was associated with increased mortality (Table 5), but this finding by itself was less discriminating than the doctor's overall assessment of prognosis.

Patient and doctor delay times

Separate patient and doctor delay times were not recorded, but the median time taken to be seen by a doctor in 311 cases where the data are available was two hours from the onset of symptoms. The median time then taken to enter a community hospital was 30 minutes, and 85% of patients were admitted within one hour; the median delay between the onset of symptoms and admission to a community hospital was two hours 25 minutes.

Most of the time from the onset of symptoms until the doctor arrived was taken by patients making up their mind to call. Total patient plus doctor delay times were very skewed with modal, median and mean values of one hour, two hours and 11 hours respectively. Delays were not significantly different in younger (less than 70 years) or older (70 plus years) patients and neither were different delay times associated with significantly different mortality rates.

Sudden cardiac death

In the participating communities during the period of the survey 95 sudden deaths from acute myocardial infarction were reported. Postmortem confirmation of the diagnosis was available in 28 cases. In only six cases were there any attempts at cardiopulmonary resuscitation by a bystander; in 11 cases a doctor attempted resuscitation, with defibrillation in six instances.

Mortality from myocardial infarction

Including the sudden deaths there were 418 cases of myocardial infarction over the survey period. A flow chart for all patients with myocardial infarction is given in Figure 2. The community mortality rate was 41% (171/418), and the mortality rate for all patients with myocardial infarction who were seen alive by a doctor was 24%; 101 of the 171 deaths (59%) occurred outside

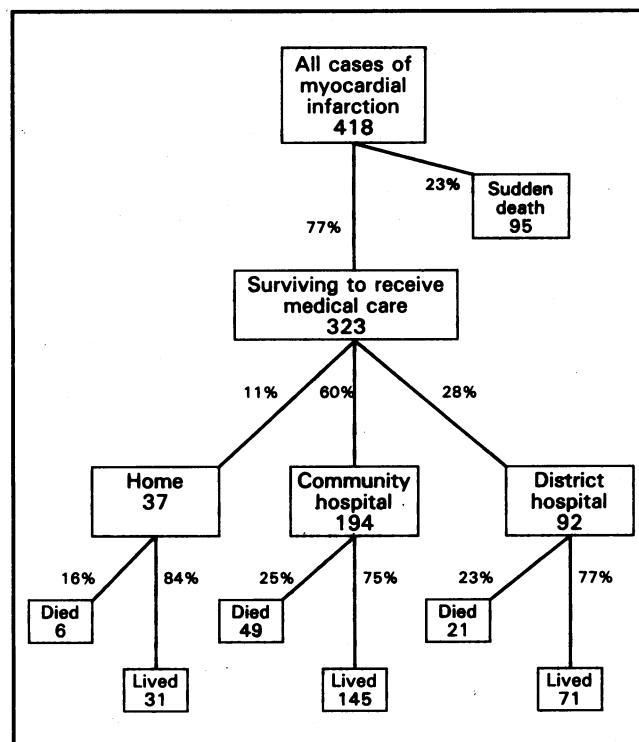


Figure 2. Flow diagram showing the initial place of treatment and final outcome in cases of acute myocardial infarction.

hospital. The mortality rates for patients treated at home, initially in a community hospital, or in a district general hospital were 16%, 25% and 23%, respectively. The incidence of myocardial infarction was 2.8 cases per 1000 population per year.

Management in a community hospital

Of the 194 patients with acute myocardial infarction admitted to a community hospital, 76 (39%) were recorded as having intravenous cannulation, 81 (42%) had electrocardiograph monitoring, 95% had an electrocardiograph recording and 80% had at least one measurement of cardiac enzymes; 16 patients (8%) received thrombolytic therapy.

Fifteen patients (mean age 64 years, range 43–78 years) were subsequently transferred to the district hospital. In four cases this was following resuscitation from cardiac arrest, and in three it was because of left ventricular failure or shock; there was one case each of heart block, aortic aneurysm, diabetes and chest infection. For four patients multiple diagnoses were made.

On admission to the community hospital, doctors were asked to decide whether a resuscitation attempt should be made in the event of a cardiac arrest — for 149 cases (77%) the answer was yes and for 42 (22%) no (no response for three cases). There were 19 reported cardiac arrests. Resuscitation was attempted for 18 patients including one for whom the decision had been taken not to resuscitate; no attempt was made for one patient even though the decision had been taken to resuscitate if necessary. Two patients survived and were discharged home from the community hospital. Four patients were transferred to the district hospital after resuscitation; two subsequently died and two lived to leave hospital. Thus, there were four survivors out of 18 resuscitation attempts (22%). Three of the patients who died in a community hospital were admitted while undergoing cardiopulmonary resuscitation for cardiac arrest.

Table 4. Outcome of cases of myocardial infarction where prognosis was estimated as good, intermediate or poor.

Outcome	Number (%) of patients			All
	Good prognosis	Intermediate prognosis	Poor prognosis	
Lived	130 (92)	70 (71)	16 (36)	216 (76)
Died	11 (8)	29 (29)	29 (64)	69 (24)
Total	141	99	45	285

$\chi^2 = 61.8$, $df = 2$, $P < 0.001$. Data missing for 38 cases.

Table 5. Outcome of cases of myocardial infarction for hypotensive and normotensive patients.

Outcome	Number (%) of patients		All
	Normotensive	Hypotensive	
Lived	174 (82)	61 (65)	235 (77)
Died	38 (18)	33 (35)	71 (23)
Total	212	94	306

$\chi^2 = 10.8$, $df = 1$, $P < 0.01$. Data missing for 17 cases.

None of the patients admitted to a community hospital died during the short journey to hospital, but two patients died in the ambulance going to a district hospital.

Discussion

Early management of suspected myocardial infarction

The management of suspected acute myocardial infarction is a matter of great urgency because of the high risk of cardiac arrest, the importance of pain relief and the necessity for early administration of thrombolytic therapy. Early management is not just a question of providing a technical facility for cardiopulmonary resuscitation and defibrillation, but one of total patient care, and as such is properly a medical responsibility. In rural areas of Scotland, where there is a strong tradition of family doctoring, general practitioners are in a very good position to provide effective community coronary care: they are the first medical contact, they can respond quickly, provide a proficient resuscitation service and relieve pain.⁴

After the initial treatment, remaining at home is not seriously considered for most patients and in urban areas most patients with myocardial infarction are admitted to a district hospital offering full diagnostic facilities, skilled nursing, effective pain relief, efficient resuscitation, and specialist treatment, advice and after care.¹³ In rural areas the general practitioner has to choose between the local community hospital, which has fewer facilities but may be reached rapidly, or the district hospital, with a journey time of an hour or more.

Delays in admission

In this survey, the median time from the onset of symptoms until the arrival of the doctor, about two hours, was very similar to that previously reported in Grampian.¹⁴ The median time taken to enter a community hospital after being seen by a doctor was 30 minutes, and most patients were admitted within an hour of being seen. At two hours 25 minutes the median time of admission to a community hospital is much shorter than that for entry into a district hospital in an urban area, where median times of three to five hours have been reported.^{8,9}

Deaths during the ambulance journey are particularly harrowing for the relatives: in this survey no patient died during the short journey to a community hospital, though a number of patients who died shortly after admission would probably have died in the ambulance had they been referred to a district hospital.

Management of myocardial infarction in community hospitals

The most serious deficiency in the provision of care in a community hospital is the absence of resident medical staff for defibrillation. Should a patient have a cardiac arrest in the absence of a doctor the nursing staff will start cardiopulmonary resuscitation but are generally unwilling to use a defibrillator.

In other respects the facilities in community hospitals seem adequate for the initial diagnosis and management of the patient with infarction, except for the treatment of heart block or complex arrhythmias. Thrombolytic therapy could be administered with no greater difficulty or risk than in a district hospital, and it seems likely that if the survey were repeated now a much higher proportion of patients would receive streptokinase.¹⁵

The ease of visiting patients in a community hospital is much appreciated by patients and their relatives, and few patients expressed a preference for admission to a district hospital.

Accuracy of clinical suspicion of infarction

One of the problems thrown up by the advent of thrombolytic therapy is the accurate diagnosis of myocardial infarction at an early stage. Hitherto, it has been sufficient for a general practitioner to make an operational diagnosis of suspected myocardial infarction, from which the decision to admit to hospital follows. Recording and interpreting an electrocardiogram takes valuable time and does not contribute greatly to the decision, so this is usually omitted.¹⁶ In this survey myocardial infarction was confirmed in 72% of the cases in which it was suspected, which is the same figure as that reported by Hill and colleagues in 2047 patients admitted to hospital with a suspected heart attack.¹¹ Most of the remaining patients were thought to have ischaemic heart disease, but in 6% an alternative diagnosis was made.

The general practitioners' index of suspicion for myocardial infarction was high, and the results show that the doctors were remarkably good at identifying patients with a good, intermediate or poor prognosis, based on an overall clinical impression.

If thrombolytic therapy is given to all patients in whom myocardial infarction is suspected on clinical grounds the risk to benefit ratio may be unacceptably high. On the other hand, if thrombolytic therapy is restricted to those in whom the electrocardiogram is diagnostically abnormal some patients with infarction but smaller electrocardiographic changes who might benefit would be denied treatment. Moreover, a greater reliance on the electrocardiogram for decision making would require general practitioners to alter their usual practice. In addition, a higher level of competence in interpretation of the cardiogram would be needed,¹⁶ though general practitioners with community hospital responsibilities may have more experience than others of the electrocardiogram in myocardial infarction. A compromise might be to administer treatment only to those patients with definite electrocardiographic changes of infarction, or those with good clinical evidence of infarction thought to have an intermediate or poor prognosis.

Outcome of care in community and district hospitals

In this study the mortality rates for patients admitted to community and district hospitals were 25% and 23% respectively, while in previously reported studies the mortality rates were 21–24%,^{4,11} and 16%,¹⁷ respectively. It has been shown that selection of patients by age, history of heart failure, and coexisting illness largely explains the variations in mortality rates for patients with myocardial infarction treated in different types of hospital and ward.¹⁸ In an Australian study no difference in mortality was observed between teaching hospitals and community hospitals staffed by general practitioners.¹⁹

In only 18 out of 194 cases (9%) managed in community hospitals in this study were attempts made at resuscitation. This contrasts with 18% in patients admitted to a district general hospital.¹¹ However, this may reflect a more discriminating application of cardiopulmonary resuscitation in community hospitals, based on the general practitioners' knowledge of the patients and their families, and their wishes regarding resuscitation. The survival rate after resuscitation found in this study was not appreciably different from that reported from general medical wards of a district hospital (22% versus 20%).¹¹

Conclusion

For patients with acute myocardial infarction in rural areas the median time of admission to a community hospital is two hours 25 minutes after the onset of symptoms, at least an hour less

than admission to a district hospital. The outcome for patients with myocardial infarction treated in a community hospital compares satisfactorily with that for treatment in a district hospital. The most serious deficiency of community hospitals is the unwillingness of nursing staff to undertake defibrillation in the absence of a doctor. Timely administration of thrombolytic therapy in community hospitals is perfectly feasible. Younger patients, initially admitted to a community hospital for thrombolytic therapy, could be referred to a district hospital at a later stage for exercise cardiography and coronary angiography.

References

1. Gruppo Italiano per lo studio della streptochinasi nell'infarto miocardico (GISSI). Effectiveness of intravenous thrombolytic treatment in acute myocardial infarction. *Lancet* 1986; 1: 397-401.
2. Second international study of infarct survival collaborative group. Randomised trial of intravenous streptokinase, oral aspirin, both, or neither among 17 187 cases of suspected acute myocardial infarction: ISIS-2. *Lancet* 1988; 2: 349-360.
3. Colling A, Dellipiani AW, Donaldson RJ, MacCormack P. Teesside coronary survey: an epidemiological study of acute attacks of myocardial infarction. *Br Med J* 1976; 2: 1169-1172.
4. Pai GR, Hailes NE, Rawles JM. One thousand heart attacks in Grampian: the place of cardiopulmonary resuscitation in general practice. *Br Med J* 1987; 294: 352-354.
5. AIMS trial study group. Effect of intravenous APSAC on mortality after acute myocardial infarction: preliminary report of a placebo-controlled clinical trial. *Lancet* 1988; 1: 545-549.
6. Wilcox RG, von der Lippe G, Olsson CG, et al. Trial of tissue plasminogen activator for mortality reduction in acute myocardial infarction. *Lancet* 1988; 2: 525-530.
7. Mathewson ZM, McCloskey BG, Evans AE, et al. Mobile coronary care and community mortality from myocardial infarction. *Lancet* 1985; 1: 441-444.
8. Armstrong A, Duncan B, Oliver MF, et al. Natural history of acute coronary heart attacks. A community study. *Br Heart J* 1972; 34: 67-80.
9. Burns JMA, Hogg KJ, Rae AP, et al. Impact of a policy of direct admission to a coronary care unit on use of thrombolytic treatment. *Br Heart J* 1989; 61: 322-325.
10. Rawls JM, Hailes NE. Loss of life from heart attacks at various ages. *Lancet* 1987; 2: 694-695.
11. Hill JD, Holdstock G, Hampton JR. Comparison of mortality of patients with heart attacks admitted to a coronary care unit and an ordinary medical ward. *Br Med J* 1977; 2: 81-83.
12. Grant JA. Contribution of general practitioner hospitals in Scotland. *Br Med J* 1984; 288: 1366-1368.
13. Rawles JM. Home or hospital for acute myocardial infarction? The argument reconsidered. *Cardiology Management* 1988; 1: 41-43.
14. Rawles JM, Hailes NE. Patient and general practitioner delays in acute myocardial infarction. *Br Med J* 1988; 296: 882-884.
15. Gordon I. Streptokinase used in general practice. *J R Coll Gen Pract* 1989; 39: 49-51.
16. Rawles JM. General practitioners' management of acute myocardial infarction and cardiac arrest: relevance to thrombolytic treatment. *Br Med J* 1987; 295: 639-640.
17. Davies A. Coronary care in a general practitioner hospital. *Br Med J* 1982; 285: 1469-1470.
18. Reznik R, Ring I, Fletcher P, Siskind V. Differences in mortality from acute myocardial infarction between coronary care unit and medical ward: treatment or bias? *Br Med J* 1987; 295: 1437-1440.
19. Reznik R, Ring I, Fletcher P, Berry G. Mortality from myocardial infarction in different types of hospitals. *Br Med J* 1987; 294: 1121-1125.

Acknowledgements

We are grateful to Carole Shirreffs for her help with data processing, to Mrs C McWilliams for her secretarial help and to the medical and nursing staff of the hospitals that participated in the study. This study was undertaken with the aid of a grant from the Scientific Foundation Board of the Royal College of General Practitioners.

Address for correspondence

Dr R Liddell, Health Centre, Balmellie Road, Turriff AB5 7DQ.

INFORMATION FOR AUTHORS AND READERS

Papers submitted for publication should not have been published before or be currently submitted to any other journal. They should be typed, on one side of the paper only, in double spacing and with generous margins. A4 is preferred paper size. The first page should contain the title only. To assist in sending out papers blind to referees, the name(s) of author(s) (maximum of eight), degrees, position, town of residence, address for correspondence and acknowledgements should be on a sheet separate from the main text.

Original articles should normally be no longer than 4000 words, arranged in the usual order of summary, introduction, method, results, discussion and references. Letters to the Editor should be brief — 400 words maximum — and should be typed in double spacing.

Illustrations of all kinds, including photographs, are welcomed. Graphs and other line drawings need not be submitted as finished artwork — rough drawings are sufficient, provided they are clear and adequately annotated.

Metric units, SI units and the 24-hour clock are preferred. Numerals up to 10 should be spelt, 10 and over as figures. Use the approved names of drugs, though proprietary names may follow in brackets. Avoid abbreviations.

References should be in the Vancouver style as used in the *Journal*. Their accuracy must be checked before submission. The title page, figures, tables, legends and references should all be on separate sheets of paper.

Three copies of each article should be submitted, with a small stamped addressed envelope (for acknowledgement), and the author should keep a copy. One copy will be returned if the paper is rejected.

All articles and letters are subject to editing.

Papers are refereed before a decision is made.

Correspondence and enquiries to the Editor

All correspondence to the Editor should be addressed to: The British Journal of General Practice, Royal College of General Practitioners, 12 Queen Street, Edinburgh EH2 1JE. Telephone (office hours; 24 hour answering service): 031-225 7629. Fax (24 hours): 031-220 6750.

Copyright

Copyright of all material in the *Journal* is vested in the *Journal* itself. However, authors may use minor parts (up to 15%) of their own work after publication without seeking written permission provided they acknowledge the original source. The *Journal* would, however, be grateful to receive notice of when and where such material has been reproduced. Authors may not reproduce substantial parts of their own material without written consent. However, requests to reproduce material are welcomed and consent is usually given. Individuals may photocopy articles for educational purposes without obtaining permission up to a maximum of 25 copies in total over any period of time. Permission should be sought from the Editor to reproduce an article for any other purpose.

Advertising enquiries

Display and classified advertising enquiries should be addressed to: Iain McGhie and Associates, 7a Portland Road, Hythe, Kent CT21 6EG. Telephone 0303 264803/262272. Fax: 0303 262269.

Circulation and subscriptions

The *British Journal of General Practice* is published monthly and is circulated to all Fellows, Members and Associates of the Royal College of General Practitioners, and to private subscribers. All subscribers receive *Policy statements* and *Reports from general practice* free of charge with the *Journal* when these are published. The annual subscription is £80 post free (£90 outside the UK, £100 by air mail). Non-members' subscription enquiries should be made to: Bailey Bros and Swinfen Ltd, Warner House, Folkestone, Kent CT19 6PH. Telephone: Folkestone (0303) 850501. Members' enquiries should continue to be made to: The Royal College of General Practitioners, 14 Princes Gate, Hyde Park, London SW7 1PU. Telephone: 071-581 3232.

Notice to readers

Opinions expressed in the *British Journal of General Practice* and the supplements should not be taken to represent the policy of the Royal College of General Practitioners unless this is specifically stated.

RCGP Connection

Correspondence concerning the news magazine, *RCGP Connection*, should be addressed to: RCGP Connection Editor, Royal College of General Practitioners, 14 Princes Gate, Hyde Park, London SW7 1PU. Telephone: 071-581 3232.