Current opinion concerning the treatment of heart disease

Report of a postal survey among Tayside general practitioners

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SUMMARY. Using a postal questionnaire method of investigation, the views of Tayside general practitioners were examined with respect to the management of three hypothetical patients with ischaemic heart disease. In the case of a man showing symptoms suggestive of infarction, hospital care was preferred by the majority of doctors. Of three categories of employment, the person in a manual occupation would be advised by most doctors to change his job after a second serious infarction. The advice given to patients was orientated towards the risk factors associated with ischaemic heart disease. Such advice was general rather than specific and emphasized restriction of activities rather than return to normal life. Commonly held social stereotypes appeared to affect the advice which practitioners said they would offer. The implications of these findings are discussed.

Method

A questionnaire with introductory letter was sent to all of the general practitioners registered as practising in the Tayside Region. Those doctors who did not respond to the first questionnaire were sent a reminder and second questionnaire. Those who still did not respond were contacted personally.

The questionnaire consisted of descriptions of three hypothetical patients. Two had suffered a definite myocardial infarction, the third patient was showing symptoms of having done so. The case descriptions were written in consultation with a number of cardiologists and general practitioners who were not taking part in the study. Questions were attached to each hypothetical case and space was provided for additional comments.

Case A

A 45-year-old man, who lives in good social circumstances, calls you because of chest pain which is typical of myocardial infarction. He is obviously in pain but his blood pressure and cardiac rhythm are normal and he is not in heart failure.
Doctors were asked one question relating to this patient.
**Question:** Would you (a) admit him to hospital or (b) look after him at home?

**Case B**

A 45-year-old man, a company director, has been seen twice in the past six weeks complaining of central chest pain which radiates to the left arm and is brought on by exertion and relieved by rest and glyceryl trinitrate. His wife calls you on the present occasion because he has a similar but more severe pain; which has developed at rest and has persisted for an hour despite glyceryl trinitrate. You find him apprehensive, sweating and in considerable pain. His pulse is regular at 110 per minute, his blood pressure is 140/90 and there are no signs of heart failure. He refuses to be admitted to hospital and an electrocardiogram recorded in his home that day confirms that he has had a myocardial infarction. Within 24 hours he is free of pain and his course thereafter is completely uncomplicated.

Doctors were asked two questions about this man.

**Question 1:** When would you allow him out of bed?
**Question 2:** When would you allow him to return to work?

In addition to these questions, which required only a tick in one box, doctors were asked to indicate any special advice they would give to the person described in case B. They were also asked to note down what advice they would give if the person described had been female rather than male.

**Case C**

Mr Brown is a 45-year-old man who has had his second myocardial infarction. At the time of his coronary his pain was severe; he was cold, sweating and extremely breathless. His pulse was very rapid and difficult to count, his blood pressure was unrecordable and heart sounds were difficult to hear because of pulmonary oedema. He was admitted to hospital where his condition came quickly into control and he remained well for the duration of his 14 days in hospital. Two weeks after his return home he was quite well but suffered angina on walking in cold or windy weather. He is, however, keen to return to work. Mr Brown is happily married, has three sons aged 17, 13 and 10 years and lives in a comfortably furnished bungalow. One month after discharge from hospital, Mr Brown consults you at the surgery. He asks you to advise him about coping with life following his heart attack. He is not unduly anxious and in your previous contacts with Mr Brown you have judged him to be a sensible man.

After being presented with this third hypothetical case, doctors were asked to indicate the advice which they might be likely to give.

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**Table 1. Response of doctors to case A.**

<table>
<thead>
<tr>
<th>Proposed management</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit patient to hospital</td>
<td>121</td>
<td>78.1</td>
</tr>
<tr>
<td>Look after at home</td>
<td>33</td>
<td>21.3</td>
</tr>
<tr>
<td>Both courses</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>155</td>
<td>100.0</td>
</tr>
<tr>
<td>No reply</td>
<td>3</td>
<td>—</td>
</tr>
</tbody>
</table>

**Questions:** What advice would you give about exercise, driving and work if the man described were (a) a self-employed director of a company with 50 employees and two managers, (b) a secondary school teacher of French, (c) a skilled bricklayer on housing construction sites?

In addition to these pre-coded questions, doctors were encouraged to expand their advice for each category of employment.

**Results**

Two hundred and twenty-one doctors were sent a questionnaire and 158 (71.5 per cent) replied. This was a gratifying response in view of the difficulty of achieving high returns using postal questionnaires.

Forty-two per cent of the doctors worked in mixed urban/rural areas, the rest in either entirely urban (36 per cent) or entirely rural (22 per cent) areas. The majority (65 per cent) practised in non health-centre premises and only 10 per cent worked as single-handed practitioners.

Most of the doctors had qualified in Scotland (92 per cent). Seven doctors had qualified before 1940, 51 per cent between 1940 and 1959, and the remainder after 1960. Male doctors were in the majority (84 per cent).

**Case A**

As shown in Table 1, the majority of doctors were in favour of admitting such a person to hospital.

Choice of management was unrelated to geographical location, type of area and year of qualification. However, inclination to manage the patient at home was significantly related to being a single-handed practitioner ($P<0.02$).

**Case B**

The responses to questions 1 and 2 are shown in Tables 2 and 3.

The question on what advice they would give if the person described had been female rather than male was taken seriously, and the majority of doctors wrote a
great deal in response to it. Three approaches to the analysis were adopted: the frequency of advice was examined; the advice offered to males and females was compared; the content of advice was assessed.

The following paragraphs summarize these data. It is to be noted that two doctors did not respond to this part of the questionnaire, thus reducing the denominator to 156. The significance of the differences in advice offered to males and females was measured in each content area using McNemar's test. This assesses whether the number of doctors offering advice only to males is significantly different from the number offering advice only to females. For example, in the content area of smoking, 42 doctors offered advice only to men and none to women only. The results of this test are recorded in brackets.

a) Advice about smoking was offered by 73.1 per cent of doctors: 46.2 per cent offered advice to both sexes, 26.9 per cent to males only, none to only females ($\chi^2 = 40.0, P < 0.001$). The majority recommended cessation. Two suggested smoking reduction.

b) Advice about drinking was offered by only 7.7 per cent of doctors. Where advice was offered, it was to avoid excesses ($\chi^2 = 2.25$ ns).

c) Dietary advice was offered by 26.9 per cent of doctors: 14.1 per cent offered advice to both sexes, 10.9 per cent to men only and 1.9 per cent to women only ($\chi^2 = 8.45, P < 0.01$). Of those doctors who offered advice, 11 mentioned restriction of animal fats, salt and refined carbohydrate. Five mentioned calorie restriction. The remaining doctors offered only general advice.

d) Advice about weight was offered by 61.5 per cent of doctors: 38.5 per cent to both sexes, 21.1 per cent to men alone and 1.9 per cent to women only ($\chi^2 = 23.4, P < 0.001$). All doctors were concerned with control or avoidance of obesity.

e) Advice about stress was offered by 23 per cent of doctors: to both sexes 14.1 per cent, to men alone 8.3 per cent, to females only 0.6 per cent ($\chi^2 = 8.64, P < 0.01$). Half of those giving advice were concerned about situational stress, avoiding where possible anger-provoking confrontations. Most of the remaining responses mentioned stress but did not elaborate. Six doctors described specific strategies for avoiding stress or mitigating its effects.

f) Work was mentioned by 28.2 per cent of doctors: to both sexes 16.7 per cent, to men alone 11.5 per cent, none to women ($\chi^2 = 16.0, P < 0.001$). One fifth recommended a shorter working week or a reduction in the number of hours worked. Thirty-three doctors were concerned about work-load and suggested delegation in some form. One doctor recommended a change of occupation and four mentioned work but did not specify any particular advice.

g) Exercise was mentioned by 54.5 per cent of doctors: to both sexes 31.4 per cent, to men alone 23.1 per cent, no doctor offered advice only to women ($\chi^2 = 34.0, P < 0.001$). The most commonly occurring advice referred to regular moderate exercise. Those who specified a particular type of exercise preferred walking, although one doctor advised jogging. Five doctors discouraged strenuous exercise: two specified jogging and squash as being inadvisable. The remaining doctors gave general advice but were not specific.

h) Regular measurements of blood pressure and serum lipid estimation as well as maintenance medication were mentioned by 7.7 per cent of doctors ($\chi^2 = 0.57, n.s.$).

i) Advice on contraception and hormone replacement therapy (women only) was offered by 29.5 per cent of doctors. Thus 28 doctors said that they would advise cessation of the contraceptive pill if this were being used, five were concerned about hormone replacement therapy, 10 mentioned avoidance of both, and three suggested offering family planning advice.

Further advice was offered on other aspects of living, such as sexual activity (mentioned by eight doctors), driving (mentioned by five), sleep and rest (mentioned by five) and seeking additional help from the doctor (mentioned by 10).
Survey 3

Table 4. Responses to the question in case C: “When would you advise a return to work?”

<table>
<thead>
<tr>
<th>Category of employment</th>
<th>Director</th>
<th>Teacher</th>
<th>Bricklayer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
</tr>
<tr>
<td><strong>Distribution of doctors advising</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>change of employment or return to work in three categories of employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advise change</td>
<td>5</td>
<td>3.2</td>
<td>3</td>
</tr>
<tr>
<td>Advise return to work</td>
<td>151</td>
<td>96.8</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>100.0</td>
<td>156</td>
</tr>
<tr>
<td><strong>Type of advice given by doctors recommending change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advise change</td>
<td>1</td>
<td>20.0</td>
<td>2</td>
</tr>
<tr>
<td>Advise retirement</td>
<td>4</td>
<td>80.0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
<td>3</td>
</tr>
<tr>
<td><strong>Periods of convalescence advised by those doctors recommending return to work</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (return immediately)</td>
<td>8</td>
<td>5.2</td>
<td>7</td>
</tr>
<tr>
<td>1 week</td>
<td>3</td>
<td>2.0</td>
<td>2</td>
</tr>
<tr>
<td>2–3 weeks</td>
<td>16</td>
<td>10.6</td>
<td>12</td>
</tr>
<tr>
<td>1 month</td>
<td>30</td>
<td>19.9</td>
<td>27</td>
</tr>
<tr>
<td>2 months</td>
<td>93</td>
<td>61.6</td>
<td>104</td>
</tr>
<tr>
<td>3 months</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
<td>153</td>
</tr>
</tbody>
</table>

Case C

In response to the question about exercise, for all three categories of employment, the most frequently cited advice was to walk one mile daily. This box was ticked by 57 per cent of the doctors.

The question “When would you suggest resumption of driving?” again elicited almost identical responses in the three employment categories. The modal time here was two months, indicated by 73 per cent of the doctors.

The additional comments for each category of employment were noted and analysed. Areas of proffered advice were almost identical to those in case B: smoking, drinking, diet, weight, stress, work, exercise and medication. Using McNemar’s test, the three employment situations were compared. On the subjects of stress and work the significant differences were:

**Stress**: Doctors were significantly more likely to offer advice to a director than a bricklayer ($\chi^2 = 18.1$, $P<0.001$) and similarly to a teacher than a bricklayer ($\chi^2 = 13.0$, $P<0.001$). There was no difference between advice offered to the director and advice to the teacher.

**Work**: Doctors were significantly more likely to offer advice on work to a director than a teacher ($\chi^2 = 19.3$, $P<0.001$) and similarly to a bricklayer than a teacher ($\chi^2 = 19.1$, $P<0.001$). There was no difference between advice offered to the director and bricklayer.

The responses to the third question, “When would you advise a return to work?”, were analysed in two stages. Firstly, the number of doctors who would recommend change for each employment category was compared (Table 4). Secondly, of the doctors who would advise return to work, the distribution of responses in the proffered time periods of convalescence was examined (Table 4).

Using McNemar’s test, the following was found. There was a statistically significant difference in the number of doctors advising a bricklayer to change his occupation when compared with those who would so advise a director ($\chi^2 = 105.0$, $P<0.001$) and also when compared with those who would so advise a teacher ($\chi^2 = 107.0$, $P<0.001$). No significant difference was observed when teacher and director were compared.

There were no differences by occupation in the periods of convalescence in the response of those doctors advising return to work (Table 4).

Discussion

Research on the management of myocardial infarction has tended to concentrate on hospital care. Little is known about the views of general practitioners or the type of information and advice which they give to patients and families following discharge from hospital.
Obviously the method adopted in this study can give only a partial indication of such views. There may or may not be a gap between their expression in response to hypothetical patients and actual behaviour in the day-to-day care of real patients. This requires further investigation, although there is some evidence later of the chosen method’s validity as an indicator of behaviour.

In the earlier Midlands study (Hampton et al., 1975), it was found that, in response to the question attached to case A, 40 per cent of doctors would keep such a patient at home. This compares with only 21 per cent of the Tayside doctors. This difference is statistically significant ($P<0.001$). The explanation for this finding was hinted at by one of the Tayside doctors who, in answer to the case A question, replied “both”. He went on to comment that if he were working in England he would keep the patient at home since that is what patients expected. In Scotland, patients had a different perception and he would send such a patient to hospital. The influence of community expectations on the behaviour of doctors is not unimportant.

Surveys conducted in the United Kingdom, United States of America, and Sweden have shown that after an infarction manual workers have longer periods off work, tend to change their jobs and to retire more readily than office workers. Wincott and Caird (1966) demonstrated that there was no apparent difference in the severity of the attack between patients off work for more than three months and those who had returned to work within this time and attributed the difference between groups, at least in part, to differences in the attitudes of general practitioners. It was clear from the Midlands survey that most practitioners believed that manual workers needed a prolonged convalescence after a myocardial infarction. Furthermore, in the Tayside study no fewer than 71 per cent of doctors said that they would advise a bricklayer to change or retire from his occupation. Unfortunately, there is little firm evidence to support the view that manual workers require more prolonged convalescence or a change of occupation. Perhaps, therefore, the wisdom of such a management strategy is questionable, particularly at the present time of rising unemployment and economic recession.

The third area for discussion concerns qualitative aspects of the advice which practitioners said they would offer to patients. This will be commented upon under four headings: content, stereotyping, specificity and emphasis.

With respect to content, it is not surprising that the ‘risk factors’, particularly smoking, should be mentioned so frequently and it is probable that in doctors’ normal daily practice such advice would be prominent. Certainly, in a parallel investigation of the advice which patients said that they had received (Laidlaw et al., 1979-82), smoking, exercise and weight control were mentioned frequently. However, in terms of patients’ requirement for advice, it has been found that they are rather more concerned with matters which tend to be mentioned by doctors much less frequently. Sexual activity and its resumption after a heart attack is a subject which concerns a number of patients, both men and women (Laidlaw et al., 1979-82). It is therefore worth noting that only eight doctors mentioned spontaneously that they would advise on this subject. Patients are notoriously diffident about asking for information, particularly on subjects perceived by them to be embarrassing (Cartwright, 1976).

There is some evidence from the amount and type of advice which doctors said they would give to patients that they were compling with commonly held gender and occupational stereotypes. Thus, in considering case B, there is a statistically significant difference in the number of items of advice offered depending on the sex of the hypothetical patient, a female patient receiving less advice than a male patient. This finding confirms an observation of actual behaviour in a diabetic clinic where, even when seriousness of disease and social class were controlled, women received less advice from their consultants than men did (Mason, C. unpublished research report). In the present study, not only was there a significant difference in the overall amount of advice offered, there were also significant differences in six of the eight subject areas. Thus women are less likely to be advised about smoking, diet, weight, stress, work and exercise. The commonly held stereotype of the ‘coronary victim’ is of someone who is male, a smoker, overweight, under-exercised and ‘stressed at work’. However, today, women are increasingly involved in those roles which are traditionally associated with high degrees of stress (CSO, 1979). These changes in the position of women may account in part for the rising incidence of ischaemic heart disease among them (Royal College of Physicians and British Cardiac Society, 1976). A similar phenomenon is present with respect to case C. The striking difference in approach to change of occupation following heart attack as between the three occupational categories has already been noted. In addition, doctors advised about stress more often in the case of a company director and teacher. Again a stereotype appears to be operating. The stereotype of a ‘stressful’ occupation is one in top management or professions where demanding decision making is required with long hours of work. However, in reality, a high level of work stress is related to two factors: the extent of control which the worker can exercise over the job and the repetitiveness of the task (Murrell, 1978). By these criteria, the stress of work is likely to be higher for a manual worker than for a company director or teacher, and the more commonly held stereotype of a stressed business executive does not conform to reality. Some degree of stereotyping is probably necessary in order to provide categories to analyse complex information rapidly and to respond readily when challenged in a number of diverse situations. However, there is also the danger that in the process of stereotyping, individual differences are ignored. Such an approach could be
detrimental to the continuing and personal care of patients.

The advice which doctors said they would give tended to be general rather than specific. Of course it may be that the space provided was insufficient for fuller answers although a few doctors did specifically advise, for example, a walk of five miles each day. Other evidence supports the view that doctors' advice to patients tends to be general rather than specific (Harden and Gleeson, 1979); observations of final year medical students speaking with patients have confirmed this tendency. When patients were asked what advice they had been given (Laidlaw et al., 1979-82), they were concerned that their family doctors had suggested exercise but not specified how much or how frequently, had suggested losing weight but not specified what foods to avoid, and so on. There is clear evidence in the literature on compliance that specific advice is more likely to be acted upon than general advice (Ley, 1975).

When looking at the emphasis of the advice which general practitioners reported they would offer to patients, it is important to note the two educational models which could have been used. The first model encourages the cessation of 'unhealthy' behaviour such as smoking, eating too much, taking insufficient exercise and so on. The second model encourages the acquisition of 'healthy' behaviour such as positive relaxation techniques and regular exercise. The predominant model used by the doctors is the first. Connected with this is the fact that the overall emphasis of doctors' advice is on restriction or modification of activities and lifestyle. Only nine doctors, in any areas of advice, mentioned a return to normal life. This approach is different from that encouraged by cardiologists, who tend to advise a return to normal life as quickly as possible. In pointing to this difference of approach, the authors are not making any judgement about which is the more correct. However, if the advice given by hospital physicians conflicts with that given by primary care physicians following discharge from hospital, patients may be confused and in considerable doubt as to which approach to follow. This problem points to the rather one-sided nature of much research in patient care. One study will look at the hospital side, another will look at the community side. But patient care is a continuing process. A longitudinal approach which acknowledges both primary and secondary care is surely to be recommended.


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Hyperthyroidism and cardiomyopathy

The effects of exercise and beta-adrenoceptor blockade on left ventricular ejection fraction (LVEF) were measured by radionuclide ventriculography in nine patients with uncomplicated hyperthyroidism. The hyperthyroid state was characterized by a high LVEF at rest but, paradoxically, by a significant fall in LVEF during exercise. The abnormal left ventricular function observed during exercise in hyperthyroidism suggests a reversible functional cardiomyopathy, independent of beta-adrenoceptor activation, presumably a direct effect of an excess of circulating thyroid hormones.


Potentially important interaction between drugs

Phenytoin given for 10-15 days in doses that produced plasma concentrations in the usual therapeutic range decreased the half-life of theophylline and increased its clearance approximately twofold.


References


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