HYPERTENSION IN GENERAL PRACTICE

The management of hypertension — a survey of opinions among general practitioners

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SUMMARY. In order to clarify current opinion on aspects of the management of hypertension, a postal questionnaire was sent to all 420 general practitioners in the Lothian Health Board Area. Three hundred and nine doctors (74 per cent) replied.

A high proportion were willing to undertake the investigation and follow-up of most hypertensive patients in general practice but there were conflicting opinions on the use of Phase 4 and Phase 5 in the measurement of blood pressure, the number and type of investigations which were appropriate, the level of diastolic blood pressure at which treatment should begin, and the level to which the diastolic blood pressure should be reduced with treatment.

Introduction

The risks of a raised blood pressure are well known (Society of Actuaries, 1959; Shurtleff, 1974) and the benefits of its reduction, at least in certain groups, are now established (Veterans Administration Co-operative Study Group on Antihypertensive Agents, 1967 and 1970). In spite of this, surveys show that many patients who are known to have hypertension are inadequately treated (Princeas et al., 1973; Miall and Chinn, 1974; Heller, 1976; Heller and Rose, 1977a and b). Efforts to assess and improve the level of care are therefore important as a preliminary to setting up programmes for the detection of patients with hypertension.

In 1976 we undertook a study of the investigation, treatment, and continuing care of hypertensive patients in hospital and general practice.* This paper reports a survey of opinions on the management of hypertension among general practitioners. Other parts of the study will be reported separately.

Method

A questionnaire was designed to find out the opinions of general practitioners on some aspects of the management of hypertension. A wide range of circumstances can affect the referral and treatment of patients with a raised blood pressure, and these were minimized by using short, hypothetical case histories giving details of age, sex, blood pressure readings, and complications. The majority of questions were open-ended to avoid listing a range of answers which might influence the replies. Ample space was left for comments and it was emphasized that we did not assume the existence of any ‘correct’ answers. Three questions were the same as those used by Hodes and colleagues (1975) in their survey in England and Wales. Basic information about the general practitioners was also collected.

The questionnaire was first sent by post to a group of 77 general practitioner principals who had already been identified as willing to participate in the study—the initial group. It was subsequently sent to the remaining 343 general practitioner principals in the Lothian Health Board Area. The general practitioners were invited to give their names, and all except eight did so. If no reply was received within a month a single reminder was sent. Three hundred and nine replies were received giving a response rate of 74 per cent. General practitioners qualifying within the last 10 years, and working in practices with three or more partners had higher response rates.

The Lothian Health Board Area covers 750 square miles and has a population of three quarters of a million, of whom two thirds live in the city of Edinburgh.

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Results

Characteristics of the general practitioners

The distribution of the year of qualification and the size of partnership in which the general practitioners worked is shown in Table 1. There was a relationship between year of qualification and size of partnership with a significantly higher proportion of doctors qualifying in earlier years being in small partnerships (p < 0.005).

Table 1. Percentage distribution of 309 general practitioners who replied by year of qualification and size of partnership.

<table>
<thead>
<tr>
<th>Number of doctors in partnership</th>
<th>Year of qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before 1945</td>
</tr>
<tr>
<td>1 to 2</td>
<td>8</td>
</tr>
<tr>
<td>3 to 4</td>
<td>6</td>
</tr>
<tr>
<td>5 and over</td>
<td>4</td>
</tr>
</tbody>
</table>

Replies to the questionnaire

Measurement of blood pressure. Asked about the measurement of diastolic blood pressure, 43 per cent of general practitioners replied that they used Phase 4 (muffling of sounds) and 29 per cent used Phase 5 (disappearance of sounds); the remaining 28 per cent used both Phase 4 and Phase 5.

Place of care — referral to hospital and follow-up.
Eighteen per cent referred virtually all their hypertensive patients to hospital for initial assessment, and a similar proportion undertook the initial assessment of almost all patients themselves.

Given a number of illustrative case histories, almost all doctors were agreed that normally a woman of 70 with a blood pressure of 240/100 would be managed by the general practitioner, while a woman of 40 with a blood pressure of 230/140, retinopathy, and a family history of hypertension would be referred for a second opinion. There was a difference of opinion about a man of 50 with a blood pressure of 220/120 but 62 per cent of doctors would refer him to hospital. Seventy per cent would manage themselves a man of 40 with a blood pressure of 160/100 and no complications. Difficulty in the control of hypertension in a woman of 60 with angina was a reason for hospital referral by 84 per cent of doctors.

Asked about the follow-up of middle-aged patients with uncomplicated 'mild to moderate hypertension after their initial assessment, 84 per cent agreed that this should be undertaken in general practice. The remaining 16 per cent were in favour of a combination of hospital and general practice care.

There was a wide variation in opinion about the frequency of follow-up required once a stable blood pressure had been achieved. Thirty-eight per cent of doctors thought the patient should be seen every two to three months. Twenty-four per cent favoured a longer interval of three to six months but replies ranged from under one month to a year.

Figure 1. The six investigations most commonly proposed for a man of 45 with symptomless, uncomplicated hypertension and a blood pressure of approximately 160/110. Percentage of doctors suggesting these, and overall average related to year of qualification.
Investigations. General practitioners were asked to list the investigations they would arrange for a man of 45 with a blood pressure usually about 160/110 and for a woman of 65 with a blood pressure usually about 190/110. The six tests most commonly mentioned for the man of 45 are shown in Figure 1, where the dotted lines indicate the percentage of doctors asking for each test. Seventeen doctors (six per cent) thought that the man should be referred to hospital for investigation and three per cent thought that no tests were necessary. In the case of the woman of 65 the six tests most commonly suggested were urine analysis (by 53 per cent of doctors), plasma urea (by 38 per cent), chest x-ray (by 35 per cent), plasma electrolytes (by 28 per cent), full blood count (by 24 per cent), and electrocardiogram (by 18 per cent). One per cent of doctors said they would refer her to hospital and 22 per cent felt that no tests were necessary.

Treatment. The level of diastolic pressure at which treatment would be initiated was considered in relation to men aged 40 to 49 and women aged 60 to 69 both with and without 'symptoms'. Symptoms were deliberately left undefined. The cumulative frequency of the replies for men aged 40 to 49 is plotted against the diastolic blood pressure in Figure 2. There was a wide scatter in the levels suggested and it was clear that patients with 'symptoms' would be treated at a lower blood pressure than those without. For instance, 50 per cent of doctors would treat men aged 40 to 49 at a diastolic pressure of 95 to 99 mm Hg if they had 'symptoms' but only 26 per cent of doctors would treat these men if they were symptomless. For women aged 60 to 69 the scatter of blood pressure levels was wider, ranging from 90 to 140 mm Hg and the presence of 'symptoms' again reduced the blood pressure at which treatment would be started.

The level to which doctors aimed to reduce the diastolic blood pressure with treatment in patients aged 40 to 60 showed a wide scatter of replies but 66 per cent of doctors thought the blood pressure should be maintained at a level of 95 mm Hg or below. The mean was 93 mm Hg with a range of 80 to 110 mm Hg.

The groups of drugs suggested as the first choice in the treatment of mild and severe hypertension are shown in Table 2.

Further questions were asked about the information given by the doctor to the hypertensive patient. Forty-six per cent usually told their patients of the risks associated with a high blood pressure and 71 per cent warned them that treatment was likely to be required indefinitely. There was general agreement that a smoker should be advised to stop smoking (88 per cent) and an obese patient to lose weight (97 per cent).

Table 2. Drug of first choice suggested by doctors for the treatment of mild and severe hypertension.

<table>
<thead>
<tr>
<th></th>
<th>Mild hypertension</th>
<th>Severe hypertension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Percentage of doctors)</td>
<td></td>
</tr>
<tr>
<td>Diuretics</td>
<td>75</td>
<td>18</td>
</tr>
<tr>
<td>Beta blockers</td>
<td>6</td>
<td>28</td>
</tr>
<tr>
<td>Methylldopa</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>Adrenergic blockers</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Combinations of the above</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Tranquillizers</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 2. Diastolic blood pressure at which treatment would be started; men of 40 to 49 with and without 'symptoms'.

Screening programmes and the contribution of a nurse. Two thirds of doctors thought that screening programmes to detect patients with hypertension should be undertaken in general practice. Of those in favour, just over half considered that this could best be done by measuring the blood pressure of each patient attending the surgery, regardless of his reason for being there. Some 20 per cent preferred the idea of calling all patients in a particular age group to the surgery for blood pressure measurement.

Almost 80 per cent of doctors were willing for an appropriately trained nurse to measure the blood pressure in a screening programme and to take blood samples from hypertensive patients. Two thirds were agreeable to her taking blood pressure readings at follow-up visits but only six per cent were willing for her to adjust drug therapy.

Relationship between year of qualification, size of partnership, and replies to questionnaire. The investigations listed by general practitioners for the man of 45 mentioned above have been presented according to the doctor's year of qualification (Figure 1). The
most noticeable trends are in tests for electrolytes and urea, with a steadily increasing proportion of doctors undertaking these investigations as the year of qualification advances. Smaller changes of a similar kind are seen for the electrocardiogram and chest x-ray. The use of the intravenous pyelogram is of particular interest for it appears to follow the same pattern; however, analysis of the year of qualification in five-year groups (instead of 10) shows that doctors qualifying between 1970 and 1974 asked for this investigation less frequently than those qualifying in the immediately preceding five-year period.

The more recently qualified doctors were more likely to inform their patients of the risks of hypertension and to warn them that treatment would be required indefinitely (Figure 3). They were also more inclined to support programmes to detect hypertension and to rely on a nurse to take blood samples and to alter drug therapy. In the measurement of blood pressure there was a trend towards greater use of Phase 4 as the year of qualification advanced.

Similar relationships between the answers to the questionnaire and the number of partners in a practice can be demonstrated. This would be expected in view of the association already described between the year of qualification and the number of partners in a practice.

**Figure 3.** The effect of year of qualification. The percentage of doctors who chose A. to inform the patient of the risks of high blood pressure, and B. to warn the patient that treatment was likely to be needed indefinitely.

### Discussion

Apart from the work of Hodes and colleagues (1975), few attempts have been made to ascertain the attitudes of general practitioners to the management of hypertension. This study was therefore undertaken in spite of the known difficulties of assessing opinions. Differences in opinion were revealed on the level of diastolic blood pressure at which doctors would start treatment, the level to which they would aim to reduce diastolic blood pressure, the choice and number of investigations, and the frequency of follow-up visits. There was general agreement on the type of patient they would refer to hospital, where follow-up should occur, and on a diuretic as the drug of first choice in the treatment of mild hypertension.

Comparison with the results of Hodes and colleagues (1975) showed that the majority of doctors in both studies would aim to reduce the diastolic blood pressure of middle-aged patients to less than 95 mm Hg. In Lothian, a greater proportion of doctors used Phase 4 when measuring the diastolic blood pressure but the tendency for older doctors to prefer Phase 5 and younger doctors Phase 4 was similar. In both studies the level of blood pressure at which doctors were prepared to start treatment was influenced by the presence of symptoms, even though it has been shown that symptoms are seldom directly attributable to hypertension (Robinson, 1969; Waters, 1971).

Certain attitudes appear to be related to the year of qualification and size of partnership. For instance, those more recently qualified and working in larger partnerships tend to manage more patients themselves, and to follow up in general practice those uncomplicated patients previously assessed by the hospital. The reasons for these differences may be that younger doctors accept more readily the preventive role of the general practitioner and the value of ancillary help. Larger partnerships are likely to offer more opportunities for the exchange of knowledge and ideas. Medical fashion during the period of training may also play a substantial part in determining attitudes in later years: a point given support by the less frequent use of the intravenous pyelogram by doctors qualifying between 1970 and 1974 after attention had been drawn to its limitations (Atkinson and Kellett, 1974).

### References


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The safest place of birth
Most members of the medical profession, certainly most obstetricians, are convinced that all births are safer if they take place in hospital under the care of a consultant obstetrician. Official policy for maternity services has been determined in accord with their conviction. They have to accept that, for as long as there have been reliable records, rates of stillbirth and neonatal death have been higher, usually much higher, in consultant hospitals than at home or in general practitioner maternity units; for example, in the 1970 survey, the perinatal mortality-rate per 1,000 births was 27.8 in consultant beds, compared with 4.3 at home and 5.4 in general practitioner maternity units. But they believe that the apparent excess death rate in hospital is more than accounted for by the fact that the births at greatest risk occur there. They have not, however, been able to produce any valid statistical evidence to support their hypothesis. Indeed, impartial analysis of such relevant statistics as are publicly available offers no support whatever for this hypothesis.

Reference