

Current management of hypertension in hospital

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Summary

A study of the notes of 1784 patients new to two London hospitals found a blood-pressure recording in 1027 (58%). Only 423 (32%) of all outpatients had had a blood-pressure recording on their first visit. Of 144 patients with hypertension (systolic \geq 160 mm Hg or diastolic \geq 100 mm Hg or both) a check recording was made in 89 (62%) and 18 (12%) were put on treatment. We conclude that the opportunity that a hospital visit provides for blood-pressure screening is being incompletely used, and that the discovery of hypertension often does not lead to further action.

Introduction

As part of an examination of the way in which hypertension was dealt with in one part of London we decided to study the case notes of the patients of two general hospitals. We investigated how far hospital resources were being used to detect hypertension, what action was taken when and if hypertension was discovered, and how effective was the treatment given.

Patients and methods

A total of 25 547 patients were registered as new to the two hospitals in 1971. This included both inpatients and outpatients but excluded casualty and special clinic attenders. We drew a random sample of registration numbers, and then searched for the case notes. Patients aged less than 15 were excluded, leaving a sample of 1867 patients. For twelve patients the case notes could not be found, and 71 were private patients who were not studied further because of lack of information. The sample therefore comprised 1784 adult patients whose notes were examined for information relating to blood pressure. The study was performed in the first part of 1974.

Results

Four hundred and sixty-five (26%) of those sampled were inpatients, of whom 236 (51%) were men; 1060 (60%) were aged between 15 and 39 years, with 327 (18%) aged 60 or more.

Detection of hypertension—Only 1027 of the 1784 patients (58%) had a blood-pressure recording, 839 (47%) on their first visit and 188 (11%) on a later occasion; and 756 (42%) had no recording at any time during the two to three years between their first visit and the survey. The place of presentation was the major factor determining whether blood-pressure would be recorded—only 31 inpatients (7%) never having a blood-pressure recording as opposed to 725 outpatients (55%) (table I). One hundred and sixty-seven patients (16%) had a blood-pressure recording which was defined as "hypertensive" for the purpose of this study—systolic equal to or greater than 160 mm Hg or diastolic equal to or greater than 100 mm Hg or both. The prevalence of hypertension rose steeply with age (table II).

Recognition of hypertension—The 167 patients found to be hypertensive included 12 who died during their initial hospital admission,

TABLE I—Blood-pressure recordings in the notes of patients of two general hospitals

Group	No	BP recorded initially (%)	BP recorded later (%)	BP never recorded (%)
All inpatients	465	416 (89)	18 (4)	31 (7)
Outpatients:				
Medical	263	180 (68)	18 (7)	65 (25)
Surgical	466	34 (7)	105 (23)	327 (70)
Antenatal	203	197 (97)	4 (2)	2 (1)
Others	386	12 (3)	43 (11)	331 (86)
All outpatients	1318	423 (32)	170 (13)	725 (55)
All patients*	1783	839 (47)	188 (11)	756 (42)

*Information not available for one patient.

TABLE II—Prevalence of hypertension* according to age and sex among 1026† patients with a blood-pressure recording. Results expressed as proportions of patients

Age (years)	Men	Women	Both
15-39	11/164 (7%)	9/423 (2%)	20/587 (3%)
40-59	32/125 (26%)	24/91 (26%)	56/216 (26%)
\geq 60	46/110 (42%)	45/113 (40%)	91/223 (41%)
All ages	89/399 (22%)	78/627 (12%)	167/1026 (16%)

*Systolic \geq 160 mm Hg or diastolic \geq 100 mm Hg or both.

†Age unknown for one patient.

leaving 155 whose notes could be examined to determine whether further action had been taken on their hypertension. The general practitioner was informed about the blood-pressure in 110 (71%) of these cases, but in 34 (22%) the general practitioner was not informed and the blood pressure was not subsequently recorded. In 11 patients hypertension was detected at their first and only clinic visit, so further action on 144 patients who attended hospital again was examined. Eighty-nine of these patients (62%) had another blood-pressure measurement—in 47 this was no longer raised and another 18 were put on treatment. So of the 144 hypertensive patients 65 (45%) were either later found to be normotensive or were started on treatment, leaving 79 (55%) for whom the issue was apparently not resolved. The higher the level of blood pressure, the more likely it was to be checked later and treatment to be started (table III), but there was little difference according to the age or sex of the patient.

Treatment of hypertension—We examined the degree of control of blood pressure in the 18 patients given treatment for hypertension. Excluding the first two recordings on each patient, and the hospital recordings of those who presented first as inpatients, there were 144 blood-pressure records in the notes of these 18 patients. The diastolic level was equal to or greater than 100 mm Hg in 98 (68%) and equal to or greater than 115 mm Hg in 31 (21%) of the recordings.

In view of the small numbers of patients identified to be on treat-

TABLE III—Number (%) of hypertensive patients having repeat blood-pressure (BP) recordings and hypotensive treatment

Initial BP (mm Hg)	No attending again	BP recorded again	Hypotensive treatment
Systolic:			
160-179	66	32 (48%)	5 (8%)
180-199	28	21 (75%)	3 (11%)
\geq 200	27	21 (78%)	8 (30%)
All \geq 160	121	74 (61%)	16 (13%)
Diastolic:			
100-109	42	22 (52%)	3 (7%)
110-119	22	20 (91%)	3 (14%)
\geq 120	21	18 (86%)	10 (48%)
All \geq 100	85	60 (71%)	16 (19%)
All: systolic \geq 160 or diastolic \geq 100 or both	144	89 (62%)	18 (12%)

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ment, a separate study was performed to examine the degree of control achieved in 85 patients receiving treatment for hypertension at one of the hospitals.¹ The patients were all those receiving treatment for hypertension among those attending any of nine medical outpatient clinics during one week in December 1972. Their blood-pressure recordings on treatment over the preceding two years (or part of that time) were noted and followed up for the next two-year period. Over the four-year period there were 1272 blood-pressure recordings, of which 758 (60%) were at levels equal to or greater than 100 mm Hg.

Discussion

Both the general hospitals we studied are in London, one having a long history as a teaching hospital and the other having relatively recently joined the teaching group. They were chosen to see whether there were any differences in their management of hypertension due to different traditions and staff. Few differences were found, suggesting that there might be similar findings in other hospitals.

The study showed that these hospitals were not acting effectively as screening centres for hypertension. Most outpatients escaped without a blood-pressure recording unless they had attended an antenatal or medical clinic. Some outpatients in surgical departments had their blood pressure recorded but usually only when subsequently admitted to hospital (table I). Completing the hospital picture, a separate study of the casualty departments¹ showed that 73% of 155 adult patients who were admitted from casualty had a blood-pressure recording made there but that only 15% of the 962 who were not admitted had one. Thus the opportunity of screening a large proportion of the population for hypertension is being missed, as a recent population survey² found that over half of a sample of adults living in the study area had visited hospital in a three-year period.

There have been no comparable studies reported in Britain. In the USA, however, one study³ found a blood-pressure recording in only 74% of doctors' inpatient notes, another¹ found a recording in 43% of outpatient notes, and a third³ found 14% of casualty attenders to have a blood-pressure recording in their notes. These figures are similar to our findings, although the proportion of inpatients with a blood-pressure recording in our study was higher. Nevertheless, the coding was designed to include any blood-pressure measurement in the notes, even if it was not performed on admission.

Our study also shows that detection of hypertension often did not lead to further action. The general practitioner was

informed in only 110 cases (71%), and in 34 (22%) the hypertension seems to have been completely ignored. The blood pressure was either found to be normal later or was treated in only 65 (45%) of the hypertensive patients. This compares with an American study⁶ which claimed an adequate follow-up of 98% of randomly selected outpatients with a diastolic pressure of 90 mm Hg or more.

Most of the patients whose hypertension was ignored completely had blood-pressure levels close to the cut-off points chosen for this study. There is little doubt about the risks incurred by having a blood-pressure of around 160 mm Hg systolic or 100 mm Hg diastolic,⁷ but trials are still in progress to assess the benefits of treatment at these levels.⁸ Even among those for whom treatment has definitely been shown to be effective, however, there were patients whose hypertension received no further attention.

Although the degree of blood-pressure control achieved in the patients started on treatment was less than ideal, it conforms with published figures from other hospital series in which between 40% and 60% of unselected hypertensive patients have had their diastolic pressure controlled to 100 mm Hg or below.^{9, 10} Comparisons are difficult to make, however, since differences in severity of hypertension between series are directly related to the ease of control on treatment.¹

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Current management of hypertension in general practice

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Summary

An examination of the notes of 697 patients in a random sample of seven general practices in one part of inner London showed that 164 (24%) of 669 had had a blood-

pressure recording in a five-year period. Proportions varied between 4% and 36% in the different practices. The blood pressure was raised (systolic \geq 160 mm Hg or diastolic \geq 100 mm Hg or both) in 74 patients (45%) whose blood pressure had been recorded, and another recording had subsequently been made in 45 (61%) of these patients. Fifteen (21%) of those with hypertension had not had a blood-pressure recording during the five years before the study. Tranquillisers or sedatives were the commonest drugs used in the treatment of hypertension. As in a study of the management of hypertension in hospital,¹ opportunities provided by visits to the general practitioner were not commonly used for blood-pressure screening, and the discovery of hypertension often did not lead to further action.

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