Criteria for the diagnosis of hypertension in general practice

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SUMMARY. An accurate age–sex register was used to identify patients in a practice who might be suffering from hypertension and to record the criteria on which the diagnosis was based. Information about blood pressure readings, diagnostic labels and treatment at the time of diagnosis were noted. The definition of hypertension sufficient to require treatment was a recorded diastolic pressure of 110 mm Hg or more on three occasions. Using these criteria, only 12 per cent of patients qualified.

Introduction

HYPERTENSION has become a major topic for discussion and research in the past decade. Its significance has been recognized but evidence about the risks and benefits of treatment is only slowly emerging. In consequence, there has been much controversy about the benefits of treatment and the level at which it should be started. This confusion is probably reflected in the criteria applied by doctors in deciding whether to treat hypertension. It is suggested that, at present, the decision to commit a middle-aged patient to a lifetime of tablet-taking is made in too random a fashion and that stricter criteria for the diagnosis of hypertension should be applied.

The aim of this study was to draw up specific criteria based on reliable evidence.

Methods and results

The age–sex register of a practice of 12,211 patients had recently been checked for accuracy.[1] It was used to identify the 3,804 patients who were aged between 40 and 65 years on 1 October 1979. To select those who might be suffering from hypertension, the patients' records were examined. Those patients with a record of blood pressure measurements were used in this study. Those with no record of a blood pressure measurement within the last five years were excluded (this group is the basis of a separate study).

Four criteria were used to judge whether the patients could be classified as hypertensive; the numbers and proportions of these are shown in Table 1. The definitions of hypertension used to select patients have been carefully considered and doctors were not required to select patients. 'A written diagnosis of hypertension' represents the doctor's perception of the problem and carries with it strong implications for the management of that patient. Patients who are taking a drug which is known to have hypotensive properties (listed in the monthly *Index of medical specialities)* and are having their blood pressure recorded is a more contentious definition. Only 15 patients came into this category and as a study of their notes did not suggest that they were receiving this treatment for any other complaint, such as angina or oedema, it is reasonable to assume that they were successfully treated hypertensives. Patients with three recorded blood pressure measurements greater

Table 1. Number of patients in each diagnostic category. (Percentages in parentheses.)

Definition of hypertension	Patients ($n=350$)
1. Patients with a written diagnosis of hypertension and who are receiving treatment for hypertension	248 *(70.9)*
2. Patients treated in the past for hypertension but for whom continued current treatment could not be identified	80 *(22.9)*
3. Patients on a drug which has hypotensive properties but where there was no clear indication that it had been prescribed for hypertension	15 *(4.3)*
4. Patients with a written diagnosis of hypertension or three blood pressure readings of 200/110 mm Hg or above but not receiving treatment	7 *(2.0)*

Table 2. Classification of blood pressure readings used in this study.

Reading	Category
Either of: Systolic >200 mm Hg Diastolic >110 mm Hg	Raised
Both of: Systolic <200 mm Hg Diastolic =100–109 mm Hg	Borderline
Both of: Systolic <200 mm Hg Diastolic <100 mm Hg	Normal

The raised category includes a systolic as well as a diastolic reading because the risk of hypertension is related to mean arterial pressure and is a function of systolic and diastolic pressures. Systolic pressures of 199 mm Hg or less and diastolic pressures below 99 mmHg were regarded as normal for the purposes of this study.

Table 3. Blood pressure classification in those patients with three recorded readings before diagnosis of hypertension. (Percentages in parentheses.)

	Number of patients
All three *raised*	43 *(27)*
Two *raised* and one *borderline*	21 *(13)*
Two *raised* and one *normal*, or One *raised* and two *borderline*	34 *(22)*
One *raised* and one *borderline* and one *normal*	*30 (19)*
One *raised* and two *normal* or One *normal* and two *borderline*	17 *(11)*
Two *normal* and one *borderline*	10 *(6)*
Three *normal*	2 *(1)*
Total	157

than 200/110 mm Hg (either reading) would be hypertensive on this evidence alone, whether the diagnosis was recorded or not. It is recognized that criteria for diagnosis may vary from doctor to doctor but thethan 200/110 mm Hg (either reading) would be hypertensive on this evidence alone, whether the diagnosis was recorded or not. It is recognized that criteria for diagnosis may vary from doctor to doctor but these definitions are likely to include all true hypertensives in a practice and may include a small number of false hypertensives.

The blood pressure measurements in the notes of patients falling within these diagnostic categories were examined and classified as 'raised' or 'normal', according to the definitions outlined in Table 2. There remained a group with 'borderline' hypertension falling outside the classification who are to be studied separately. In this way a group of hypertensives (205 female, 145 male) were identified, whether on treatment or not.

For this group of 350 patients, the date of the diagnosis of hypertension was noted. The number of times that blood pressure had been recorded before treatment for hypertension was also noted: 16 patients (5 per cent) had not had a previous measurement; 96 patients (27 per cent) had a record of one measurement; 81 patients (23 per cent) had two readings recorded; 157 patients (45 per cent) had a record of three blood pressure measurements.

These readings were then classified as 'raised', 'normal' or 'borderline' using the definitions given in Table 2. The blood pressure classification of the 157 patients whose records showed that three measurements had been taken before the diagnosis of hypertension is given in Table 3. It was decided that three consecutive readings in the 'raised' category would indicate hypertension of a sufficient degree to require treatment. Only 43 out of the 157 patients (27 per cent) qualified for treatment using these criteria—this was only 12 per cent of the whole group of patients who could be called 'hypertensive'.

Study of the records showed that of the 350 patients who were identified as hypertensive only 45 per cent had three blood pressure measurements before diagnosis and in only 27 per cent of these were the readings unequivocally raised. In diagnosed hypertensives, 68 per cent of those with one recorded reading had a further reading, a figure similar to that of Heller[2] who in a random sample of medical records found that 61 per cent of those patients with a reading in excess of 160/110 mm Hg had a second reading recorded.

Discussion

Parkin,[3] in a study of hypertensives selected by doctors, showed that 38 per cent had three readings of blood pressure before diagnosis and a further one third had only one reading. These proportions were confirmed by the present study.

Hypertension is now graded as severe when diastolic blood pressure is in excess of 110 mm Hg, and moderate with diastolic pressure over 100 mm Hg. The benefits of treatment for the severe group are not in doubt, but estimation of the value of treatment for patients with moderate hypertension awaits the results of a Medical Research Council's trial.[4]

Although a single blood pressure reading is a reasonable predictor of risk,[5] half of those patients who would be classified as hypertensive on one reading alone can be reclassified into a lower category after three serial readings.[6] Most definitions of hypertension now require the mean of three readings to be obtained.[7] In this study only 43 out of 350 patients (12 per cent) unequivocally qualified for treatment. The decision to place patients on treatment for life should be taken on the basis of the strongest evidence and every effort should be made to eliminate errors which give a false impression of the degree of hypertension.

References

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Acknowledgements

It is a pleasure to acknowledge the help I have received from many sources in the preparation of this paper: Drs K. F. C. Brown, M. D. M. Parkes Bowen, R. G. D. Small, L. M. A. Munro and R. Lee, whose patients and records were studied; Mrs Jennifer Vaughan, who acted as research assistant; Mrs Carol Coley and Mrs E. Rickaby for their secretarial help; and John Beckett, Senior Computer Officer in the University of Leicester Computer Laboratory for the analysis of the data.

The project of which this paper forms a part was made possible with the aid of a grant from the Trent Regional Health Authority.

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Benzodiazepine dependence

Classical pharmacological dependence is rare with the benzodiazepines. However, there is evidence that prolonged administration of doses within the therapeutic range leads to true dependence in a significant minority of patients. This dependence is characterized by withdrawal symptoms on stopping treatment; these include perceptual disturbances, epileptic seizures, weight loss, insomnia and autonomic symptoms.

The withdrawal syndrome is more likely if: the benzodiazepine has been taken in regular dosage for more than four months; higher dosages have been used; the drug is stopped suddenly; and a short-acting benzodiazepine has been taken. The withdrawal syndrome is most likely to occur when there is a rapid fall in blood benzodiazepine concentrations; this may be associated with altered sensitivity of benzodiazepine receptors. The syndrome can best be avoided by gradual reduction of dosage. The temporary prescription of other drugs, particularly β-adrenoceptor blocking drugs, may attenuate withdrawal symptoms, but antipsychotic drugs in low dosage are of no benefit.

Source: Owen RT, Tyrer P. Benzodiazepine dependence. A review of the evidence. *Drugs* 1983; **25:** 385-398.