

THE MENTAKAB HYPERTENSION STUDY PROJECT PART III - DETECTION OF HYPERTENSION IN THE OUTPATIENT DEPARTMENT

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ABSTRACT

Undetected hypertension is an obstacle to effective blood pressure control in the community. A study was done to assess the justification of screening in the outpatient department.

Only 13% of all visits to the outpatient department resulted in an attempt to detect hypertension. The common reasons leading to blood pressure measurement were headache and dizziness. Current practice of hypertension detection appeared inadequate and irrational.

Nine per cent of all visits to the outpatient department were already accounted for by hypertensives. A screening survey found that 30% of all non-hypertensive patients attending outpatient department aged 30 years or more had blood pressure greater than or equal to 140/90 mmHg. The drop out rate among these newly diagnosed hypertensives was 100%.

Existing resources are already inadequate and existing hypertension care has also been shown to be inadequate. Screening can only be expected to considerably increase hypertensive patient load without however any assurance that effective long term care can be delivered. Labelling people as hypertensives in this manner may be harmful.

The question of screening cannot be considered individually, separate from the entire problem of hypertension control. Detection must be linked to treatment in a programme designed to promote compliance and capable of delivering adequate care before it can be justified.

Keywords: Hypertension, screening, justification of, hypertensive symptoms.

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INTRODUCTION

The risk of hypertension⁽¹⁾ is undoubted and the benefits of treatment have been well documented^(2,3). There however remains the problem of getting the benefits to the patients. In a previous study on hospitalized complicated hypertensives⁽⁴⁾, 22% of the patients were without previously diagnosed hypertension at admission. Moreover, 83% of these undetected hypertensives had visited a doctor at least once in the previous three years. Thus, the opportunities provided for the detection of their hypertension were missed. A community survey of hypertension in Selangor⁽⁵⁾ had found that 33% of persons with raised blood pressure were unaware of their condition. Many other studies⁽⁶⁻⁸⁾ have also shown that undetected hypertension is an important obstacle to hypertensives obtaining the benefits of modern antihypertensive treatment. Thus, it would seem that no further justification of screening to detect all the undiagnosed hypertensives is required. There are however several questions that should be considered before screening can be undertaken. Questions like: (1) Is the current practice of hypertension detection adequate? (the need for screening would be obviated if current effort is adequate); (2) Is screening practically feasible? (3) What would be the expected increase

in workload from screening and is the work load sustainable? (4) Can long-term effective treatment and compliance with treatment be assured? and finally (5) How can screening be justified?

We therefore investigated the current practice of hypertension detection and the current load of hypertensive patients in the outpatient department. We further conducted a pilot screening survey. Results from the study can provide the answers to some of the questions posed above, and thereby allow an informed discussion of the justification of screening under present circumstances in Temerloh Health District.

METHODS

The study consisted of two parts:

- (1) A retrospective study of outpatient medical records to examine the current practice of hypertension detection and to estimate the load of hypertensive patients.

Medical records of patients who had attended the outpatient department over a one-month-period were randomly selected. The records were studied to determine the frequency of blood pressure recording, the reasons for the measurement where these were apparent, and information on blood pressure status of the patient. A person whose record indicated that he was hypertensive and he was on antihypertensive treatment is defined as hypertensive.

- (2) A prospective screening survey based at the outpatient department.

Following (1) above, a screening survey was conducted in the outpatient department for one week. In this survey, all patients attending whose age was equal to or greater than 30 years had their blood pressure measured. Those with known hypertension were excluded from this survey. This was carried out by nurses who had previously been trained in the procedure of blood pressure measurement. An orthodox mercury manometer was used, all the usual precautions were taken⁽⁹⁾ and diastolic pressure reading was taken at phase V. Raised blood pressure was defined as a systolic pressure of ≥ 140 mmHg or diastolic blood pressure of ≥ 90 mmHg or both, in keeping with the definition of World Health Organization⁽⁹⁾. This does not necessarily imply that all patients

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fulfilling this definition require treatment but that they at least require follow-up and monitoring of their blood pressure.

All patients so identified as having raised blood pressure were given an appointment to attend a clinic specially set up to observe the patient's blood pressure and to determine the prevalence of hypertension.

RESULTS

A total of 978 records were randomly selected and examined; 220 (22%) of these records examined contained a blood pressure recording.

Of these 220 records with blood-pressure recordings, 134 belonged to patients who were without previously diagnosed hypertension. Thus only 13% of all visits to the outpatient department resulted in an attempt to detect hypertension. The reasons or symptoms leading to the blood-pressure measurement were apparent in 102 records and they are summarised in Table I. Headache and dizziness were the most common reasons leading to blood pressure measurement.

Eighty-six records with blood pressure recordings belonged to patients who were hypertensive on treatment at the outpatient department. Thus 9% of all visits to the outpatient department was because of hypertension. The proportion of all outpatients in various age groups who were hypertensive is shown in Table

Table I
Reasons for blood pressure measurement

Symptoms/Reasons	No.	(%)
Headache and giddiness	45	(44)
General medical examination	24	(23)
Chest pain	10	(10)
Generalized ache/pain	10	(10)
Patient requested blood pressure check	6	(6)
Other reasons	7	(7)
Total	102	(100)

Table II
Proportion of all outpatients in various age-groups who were hypertensive

Age group (yrs)	All outpatients (a) No.	Hypertensive outpatients (b) No.	Proportion of all outpatients who were hypertensive (b)/(a) (%)
≤19	290	0	0/290 (0)
20-29	202	0	0/202 (0)
30-39	157	7	7/157 (4)
40-49	101	20	20/101 (20)
50-59	119	29	29/119 (24)
≥60	109	30	30/109 (30)
All age groups	978	86	86/978 (9)

Table III
Proportion of patients in various age groups screened and found to have raised blood pressure (≥ 140/90 mmHg)

Age group (yrs)	Patients screened (a) No.	Patients found to have raised blood pressure (≥ 140/90 mmHg) (b) No.	Proportion of patients screened and found to have raised blood pressure (b)/(a) (%)
30-39	155	30	30/155 (19)
40-49	87	31	31/87 (35)
50-59	75	28	28/75 (37)
≥60	51	23	23/51 (45)
All age groups	368	112	112/368 (30)

II. Twenty four percent of all patients whose age was equal to or greater than 40 years attended because of hypertension.

In the subsequent screening survey, a total of 368 patients had their blood pressure measured. Of these, 112 patients (30%) had blood pressure equal to or greater than 140/90 mmHg. The proportion of patients screened and found to have raised blood pressure is shown in Table III. More than one-third of all whose age was equal to or greater than 40 years and nearly half (45%) of those whose age was equal to or greater than 60 had raised blood pressure.

On subsequent follow-up of these 112 patients with raised blood pressure, 103 patients (92%) failed to attend the first visit and the drop-out rate reached 100% at the second visit.

DISCUSSION

The current practice of blood pressure measurement in outpatient department clinics is not unexpected. An attempt to detect hypertension was made in only 13% of all visits to the clinic. Many other studies^(8,10,11) have similarly shown that doctors whether in hospital, outpatient clinic or general practice setting were not enthusiastic about hypertension detection. When blood pressure was measured, the common reasons were headache and dizziness, exactly the same reasons found in other studies^(12,13). In a questionnaire survey of local doctors⁽¹⁴⁾, it was found that a majority of doctors (52%) believed that hypertensive patients usually present with symptoms; headache and dizziness were also the commonest symptoms cited. It appeared that hypertension detection in current practice is still largely symptom-motivated. There is however no rational basis for this as it is well documented that hypertension is essentially asymptomatic^(15,16).

The myth of hypertensive symptoms has persisted; in Tudor Hart's words⁽¹⁷⁾ "... a mythology of symptoms was built up by doctors and transmitted with authority to their patients, associating headache, giddiness, flushing, sweating and other symptoms related to emotion through visceral nervous pathways, with high blood pressure; patients with these symptoms expected their blood pressure to be taken - and they were. Thus, the myth of hypertensive symptoms as a pointer to diagnosis, become self-replicating." When patients believed the myth, as many of their doctors do, their compliance with treatment may be affected. In a study⁽¹⁸⁾ to determine the reasons for drop-out of treatment among hypertensives (mostly with complications and serious hypertension), 78% of the drop-out cited relief of initial presenting symptoms as the reason and 93% cited the reason that they felt well and therefore did not see the need for continuing treatment.

Outpatient department clinics of hospital, and indeed all places of contact between the public and health service personnel provide considerable opportunities for hypertension detection. The statistics are impressive. For example, in 1988 (the last year statistics are available), in the Temerloh Health District with a catchment population of 175,402 inhabitants 63,234 (36%) of these inhabitants visited the outpatient department clinics of the local hospital⁽¹⁹⁾, and if visits to other clinics of the hospital as well as other clinics in the district are included, 60% of the population had made contact with the health service in a year. This is comparable with the figures of 60-70% found in other studies^(20,21). This is the basis of opportunistic case-finding method for detecting hypertension; in a study⁽²¹⁾, more than 95% of hypertensives discovered by screening had visited their doctors for some reason during the previous five years.

Thus, the current practice of hypertension detection in the outpatient department is both inadequate and irrational. On the other hand, the outpatient department is well suited for opportunistic case-finding. Screening is therefore practically feasible. Given these, and the fact that benefits of antihypertensive

treatment are undoubted, it would seem no further justification is required to commence screening for hypertension. Indeed, screening has now been actively promoted throughout the country health services. It is our view however that this is premature. There are other considerations before screening can be undertaken. Results from this study allow an informed discussion of the justification of screening under present circumstances in Temerloh Health District. It is assumed similar circumstances probably prevail in other health districts in the country.

Doctor initiated search for unrecognised disease in healthy individuals carries with it certain ethical obligations; obligations which differ from those of daily medical practice where it is patient who initiated the consultation⁽²²⁾. Therefore, certain criteria must be satisfied before a screening programme can be justified. The four most important of these criteria, as recommended by the World Health Organization⁽²³⁾, can be summarized as follows:

- (a) Treatment for the condition screened must favourably alter its natural history.
- (b) Available health services must be sufficient to provide long-term care.
- (c) Compliance with long-term treatment must be assured.
- (d) The burden of disability for the condition screened must warrant action.

Applying these criteria to screening for hypertension in Temerloh Health District, criteria (a) and (b) are easily satisfied. Benefits of antihypertensive treatment are well documented; hypertension is very common and complicated hypertension is the most common cause of medical admissions⁽⁴⁾. However, results of this and other studies suggest that criteria (b) and (c) may not be satisfied.

This study shows that 9% of all visits to the outpatient department was because of hypertension; this translated into an estimated 5,600 individual hypertensive patients. Such patient load is considered excessive relative to the resources of the department. Not surprisingly, audit⁽²⁴⁾ had shown that the long-term care of these existing 5,600 patients was grossly inadequate; only 18% of patients had achieved effective blood pressure control. On top of these, we must now add the extra load that can be expected from screening. This study found that 30% of those screened aged 30 years or more had blood pressure $\geq 140/90$ mmHg. This translated into an extra 9,300 patients per year, of whom 3,720 (40%) can be expected to have their raised blood pressure confirmed after several observations⁽²⁵⁾. Further, this study also found that all hypertensives (100%) identified had dropped out after 2 visits. Clearly, neither the level of workload is sustainable nor is the drop out rate acceptable, which must cast considerable doubt on our ability to provide effective long-term care and to ensure long-term compliance. Even if extra resources can be found, cost-benefit analysis⁽²⁶⁾ has shown that increased effort to improve existing care and patient compliance is a better use of extra resources available than effort to detect hypertension. It must also be borne in mind that a screening programme which will identify and "label" a large number of people as hypertensives, but is unable to provide any assurance of effective long-term care could be harmful^(8,27).

Thus, given the above considerations, it is not surprising that the efficacy of hypertension screening has never been proven, which surely must be the final arbiter of the value of screening. Controlled trials of multiphasic screening (which include blood pressure check)⁽²⁸⁾ and of hypertension screening⁽²¹⁾ have shown no significant differences in outcome between the screening group and control group. The often unstated assumption in the advocacy of hypertension screening is that, identifying hypertensives will necessarily lead to

effective treatment and favourable outcome. Such an assumption remains unproven by clinical trial.

In our view, the above arguments deserve careful consideration before screening is undertaken. More importantly, the above arguments serve to highlight the point that the issue of screening cannot be considered alone and apart from the entire problem of hypertension control. Screening is now promoted as if it is an end in itself; its outcome being measured by how successfully hypertensives can be detected rather than by how successfully detected hypertensives can be treated and their prognosis improved. Screening is better regarded as the first link in a chain, other links in the chain include effective long-term treatment and compliance. All these links in the chain must be forged in order to achieve their ultimate purpose, which is to minimise the cardiovascular mortality and morbidity resulting from uncontrolled hypertension in the community. A seemingly obvious point, but surprisingly often forgotten.

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