

Blood pressure measurement by pharmacists

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SUMMARY. The feasibility of blood pressure measurement by general practice pharmacists was examined in nine pharmacies. Two hundred and fifteen subjects were screened and 13 were referred to their general practitioners. Ten subjects (five per cent of the initial sample) were confirmed to be hypertensive by their doctors. The upper limits of normotension were 160/100 mmHg aged up to 50 years, 160/105 mmHg aged 51-60 years and a diastolic pressure of 110 mmHg over 60 years. Ninety-eight per cent of a sample of the lay public who completed a written questionnaire were in favour of blood pressure measurement by pharmacists. The study showed that general practice pharmacists were able to measure blood pressure within acceptable limits of accuracy and that, with the collaboration of general practitioners, the pharmacies were suitable agencies for screening for hypertension.

Introduction

EVIDENCE is accumulating that the treatment of hypertension of all grades of severity results in a reduction of morbidity and mortality (Veterans Administration Cooperative Study Group, 1967; Hypertension Detection and Follow-up Programme, 1979; National Heart Foundation of Australia, 1980). However, it has been estimated that about half the hypertension cases which need treatment are missed (Hart, 1970). This view is based on detection in the general practitioner's consulting room. It has been suggested that paramedical personnel might measure blood pressure, provided that measurements are accurate and that any scheme has the co-operation of the medical profession (*Lancet*, 1979). In the United States (Baugher, 1975) and Australia (Robertson, 1978) it has been shown that it is feasible for pharmacists to measure blood pressure.

Aim

The aim of this study was to examine whether general practice pharmacies in this country are a suitable agency for initial screening for hypertension.

Method

A group of general practice pharmacists attended two evening training sessions at which they received instruction in using the sphygmomanometers employed in the study and relevant background information on the subject of hypertension. Two doctors also attended.

The pharmacists who took part in the study displayed a discreet notice inside the pharmacies informing the public of the service available. Subjects were admitted to the study who either requested measurement or who were approached by the pharmacist and agreed to have their blood pressure taken.

Two measurements were made five minutes apart using electronic sphygmomanometers (Welsoon, Model SE-7, West Pharmarubber Ltd). The subjects were seated.

Systolic and diastolic (phase 5) pressures were denoted by an audible and visual signal on the instruments. The upper limits of normotension were: 160/100 mmHg for subjects up to 50 years of age; 160/105 mmHg between 51 and 60 years and a diastolic pressure of 110 mmHg over 60 years. These limits were based on the guidelines for diastolic pressure set by the Pharmaceutical Society (*The Pharmaceutical Journal*, 1979). However, the study limits were set slightly higher than these guidelines in order to avoid false positives and to bring them into line with the pressures accepted by doctors as approaching hypertension (WHO, 1962; Hart, 1970; Barber *et al.*, 1979). The rising scale of diastolic pressure was used to take account of the generally accepted increase with age.

Subjects whose second measurement was within normal limits were issued with a written record of their blood pressure and left the study at this point. Those whose blood pressure was above normal were asked to return to the pharmacy after a few days for repeat measurements. If the blood pressure was still raised at the second visit, subjects were advised to take a form with the recorded measurement to their general practitioner. The pharmacist asked referred subjects to visit the pharmacy after the consultation with their doctor to confirm whether a diagnosis of hypertension had been made. To find out what people think about blood pressure measurement in pharmacies, a questionnaire

Table 1. Details of referred patients, confirmed as hypertensive.

Patient	Sex	Age (yrs)	Blood pressure reading		Therapy/action taken by doctor
			Pharmacist	Doctor	
1	M	34	175/120	180/115	Antihypertensive drug
2	M	40	210/130	210/135	Antihypertensive drug
3	M	40	150/120	150/105	Weight loss advised
4	F	52	145/105	145/105	Antihypertensive drug
5	F	58	145/105	Not known*	Antihypertensive drug
6	F	70	200/170	Not known*	Antihypertensive drug
7	F	52	200/170	200/105	Regular monitoring
8	F	54	150/105	Not known*	Action to be considered
9	F	52	210/120	200/120	None
10	F	74	215/120	"High"***	None

*Doctor's measurement was not disclosed but, in view of the action taken, a diagnosis of hypertension is apparent.

**Doctor informed the patient that the blood pressure was "high"

was made available for completion by customers in the study pharmacies.

The study was made between February and June 1980.

Results

Two hundred and fifteen subjects were screened in nine pharmacies. Forty-four per cent of the subjects were male and the overall age distribution was as follows: less than 30 years, 20 per cent; 30 to 44 years, 34 per cent; 50 to 59 years, 23 per cent; over 60 years, 23 per cent. There were 13 medical referrals, one of whom was lost to follow-up. Ten of the referred cases were confirmed as new cases of hypertension by their general practitioners; details of these cases are shown in Table 1.

One hundred and eighty-seven members of the public, independent of the group who were screened, completed questionnaires on the pharmacy premises (Table 2). Ninety-eight per cent of questionnaires showed support for blood pressure measurement in pharmacies. The questionnaire also revealed that approximately half of the subjects were aware of the low detection rate of hypertension and that most were able to name correctly at least one complication of untreated hypertension.

Table 2. Results of printed questionnaire.

Question	Response	
	Yes/Correct	No/Incorrect
1. Would you be prepared to have your blood pressure tested in this shop?	183 (98%)	4 (2%)
2. Did you know that approximately 50 per cent of people with high blood pressure have not yet been detected?	92 (49%)	95 (51%)
3. Can you name any condition which may result from a high blood pressure if it is not treated?	136 (73%)	51 (27%)
4. Do you consider the testing of blood pressure by a pharmacist is desirable?	183 (98%)	3 (1½%) (Don't know 1)

Discussion

The rate of medical referral in the present study was six per cent of the population screened; five per cent of the subjects examined were found to be hypertensive. This compares well with the rate of detection of hypertension in previous screening studies carried out by general practitioners using similar threshold values for hypertension (Hart, 1970; Barber *et al.*, 1979).

Two independent doctors confirmed the accuracy of the electronic sphygmomanometers before the study began. However, in three cases, pharmacists read the diastolic pressure appreciably higher than that recorded by the patients' doctors. This was most probably an error of technique in positioning the cuff and microphone on the arm since, in other isolated cases, initial high diastolic readings went down when the procedure was repeated. It is likely that more attention to this detail when teaching the technique of measurement would eliminate this error.

Drug therapy was prescribed in half of the cases of hypertension, and closer follow-up of three of the five remaining patients was indicated. In two cases, the doctor had not apparently intended to treat or follow up the patients. Any screening procedure for hypertension requires that action is taken to treat diagnosed cases if it is to be effective. In the study described here, pharmacists obtained the co-operation of local doctors as far as possible and in some cases there was enthusiastic collaboration, but the results suggest that there was room for closer contact. In view of the more recently published investigations from America (Hypertension Detection and Follow-up Programme, 1979) and Australia (National Heart Foundation of Australia, 1980), the treatment pattern of confirmed cases might be altered in any future similar study.

The questionnaire showed a high level of awareness about the risks of hypertension in the sample of the lay public questioned; there was also an enthusiastic attitude towards pharmacists measuring blood pressure. Surveys have revealed that doctors are willing for appropriately trained nurses (Fulton *et al.*, 1979) and pharmacists (Townsend and Berrie, 1980) to screen for

The

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Diagnostic Quiz

The answers to the September quiz are as follows:

1. What is the differential diagnosis?

**Infectious mononucleosis
Streptococcal tonsillitis
Candidiasis
Diphtheria**

2. Which laboratory tests would be most useful?

**Throat swab
Monospot for IM (Paul-Bunnell)**

3. What antimicrobial therapy is indicated?

Benzympenicillin to cover streptococcal infection until diagnosis is established.

The winner of a £100 British Airways travel voucher is Dr A. M. Campbell of Sittingbourne, Kent.

AGORAPHOBIA

NATURE AND

TREATMENT

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hypertension. One of the criticisms put forward of screening for an emotively charged condition such as hypertension is that it may create unnecessary alarm and anxiety. During the course of their work, pharmacists routinely screen symptoms presented to them by the lay public and quite often refer for a medical opinion when serious pathology cannot be excluded. Screening for hypertension may be considered as no more than an extension of this role. Sphygmomanometers for self-measurement are advertised directly to the public and studies have indicated both that the layman is capable of home monitoring (Burns-Cox *et al.*, 1975) and that self-measurement can improve medication compliance in hypertensive patients (Haynes *et al.*, 1976). However, cost would prohibit widespread self-measurement by patients. This study has shown that, with collaboration with the medical profession, general practice pharmacists can offer a blood pressure measurement service.

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