

STUDY OF MALAYSIAN MILITARY HYPERTENSIVES — THERAPY COMPLIANCE

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SUMMARY

A random sample of 102 hypertensives out of a total of 347 in the Malaysian Armed Forces were studied with regard to patient education, knowledge of hypertension and therapy compliance. It was found that for 53 percent, patient education was unsatisfactory and as a result 67 percent had inadequate knowledge of hypertension. Adherence to therapy — drug intake, weight reduction and cessation of smoking — was poor (more than 59 percent, 96 percent and 70 percent failure respectively). There was no significant difference between asymptotically and symptomatically detected hypertensives.

INTRODUCTION

Hypertension is a world-wide public health problem. Eight to 18 percent of adults have blood pressure (BP) above 160 mmHg systolic and/or 95 mmHg diastolic.¹ In Malaysia, a similar high prevalence of hypertension was found. Volp² found a 17 percent prevalence of hypertension (BP equal to or greater than 140/90 mmHg) among urban clinic patients and 30 percent to 63 percent among rural clinic patients in Parit, Perak. Kandiah *et al*³ detected hypertension (BP greater than 140 mmHg systolic and/or 90 mmHg diastolic) in 14 percent of the adult population studied in Selangor. The prevalence in the Armed Forces as of October 1979 was 403 per 100,000. This study is to determine the extent of patient education and compliance to therapy in the Malaysian military hypertensive population.

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MATERIALS AND METHODS

Multiphasic screening for disease among Malaysian Armed Forces personnel is carried out at regular intervals varying from 1 to 4 years. All hypertension cases diagnosed are confirmed after thorough examination and specialist consultation. The serviceman is then medically boarded and recategorised as to his fitness for duty. All boarded essential hypertensives in the Armed Forces excluding officers comprised the primary sampling unit of 347 cases. From these 110 were drawn using the table of random numbers. A pre-tested questionnaire (in Bahasa Malaysia and English) was sent to all hypertensives in October 1979 in a pre-paid self-addressed envelope.

The medical documents of 10 of the 41 (24.4 percent) of the study population, who had indicated that they had visited the medical establishment 12 or more times and had adhered to the drug regime were checked for the validity on drug compliance. These documents were the ones that were readily available to the author.

RESULTS

One hundred and two replied the questionnaire giving a response rate of 85 percent. Six hypertensives were on training for civilian life and were working outside the Armed Forces and as such may not have received the questionnaires to reply. The analysis is limited to the 102 (4 Chinese, 7 Indians and 91 Malays) who responded.

Age and Mode of Detection of the Hypertensives

The age at detection and mode of detection of the hypertensives is shown in Table I. All patients developed hypertension while in service as all on entry into the Armed Forces undergo medical examinations and those found with hypertension are rejected. The age at detection varied from as

TABLE I
AGE AT DETECTION OF THE HYPERTENSION

Age	Symptom-motivated Cases (%)	Asymptomatic Cases (%)	All Cases (%)
20 - 24	2 (4.44)	5 (8.77)	7 (6.86)
25 - 29	12 (26.67)	8 (14.04)	20 (19.62)
30 - 34	14 (31.11)	23 (40.35)	37 (36.27)
35 - 39	17 (37.78)	18 (31.58)	35 (34.31)
40 - 44	0	2 (3.51)	2 (1.96)
≥ 45	0	1 (1.75)	1 (0.98)
All age groups	45 (100%)	57 (100%)	102 (100%)

early as 20 to as late as 45. Seventy-one percent of the cases were in the 30-39 age group. The age structure of the Armed Forces population is a relatively young one (highest in the 20-29 age group) with a small percentage in the forties and hence the few cases detected in that age group. Fifty-six percent of the cases were asymptomatic, detected on routine medical examination. The other 44 percent of the cases in this series comprise symptom-motivated (for 2 unrelated to hypertension) cases.

Period known to have Hypertension

Seventy-two percent of the hypertensives were detected within the last 5 years and nearly all within the last ten years as given in Table II. Symptom-motivated and asymptomatic patients show no significant difference in their duration known to be hypertensive.

Length of Service

The length of service has varied from 2 to over 20 years. Forty-four percent have served in the Armed Forces for not less than 15 years. However, 71 percent of the asymptomatic patients have served 15 or more years while only 58 percent have served a similar period.

Blood pressure levels at time of detection

The blood pressure levels at time of detection as reported by the patients varied from frank hypertension to levels which were normal applying the World Health Organization criteria for Hypertension i.e. a systolic of ≥ 160 mmHg and or ≥ 95 mmHg diastolic. Seven denied their levels being told at all, 26 indicated levels in which both

TABLE II
DURATION KNOWN TO BE HYPERTENSIVE

Duration known to be Hypertensive (years)	Symptom- motivated Cases (%)	Asympto- matic Cases (%)	All Cases (%)
0 - 4	32 (71.11)	41 (71.94)	73 (71.57)
5 - 9	12 (26.67)	14 (24.56)	26 (25.49)
10 - 14	1 (2.22)	1 (1.75)	2 (1.96)
15 - 19	0	1 (1.75)	1 (0.98)
Total	45 (100%)	57 (100%)	102 (100%)

systolic and diastolic were raised, 40 the diastolic only and 1 the systolic. Twelve gave levels which were normal, 14 did not remember and two recorded incorrect values. The validity was not confirmed by a check of their records as these were not available.

Information given by medical staff on complications of hypertension

Twenty-five individuals wrote that information on the complications of hypertension - stroke, problems related to heart, kidney and eye were not provided by the medical officer or the medical assistants. This tallied with answers given on knowledge of complications for 15 who answered in the negative for all complications, 2 knew of all complications, 5 knew of 2 and 3 others of 1 complication only. It is possible that the 10 obtained information on some of the complications from friends or other outside source. One left the column blank and the rest were told by either the medical officer or medical assistant.

Knowledge of Complications

The complications were the same as those given

TABLE III
**LENGTH OF SERVICE IN THE ARMED FORCES OF
THE HYPERTENSIVES STUDIED**

Length of Service (Years)	Symptom- motivated Cases (%)	Asympto- matic Cases (%)	All Cases (%)
0 - 4	0	0	0
5 - 9	7 (15.55)	6 (10.53)	13 (12.75)
10 - 14	12 (26.67)	10 (17.54)	22 (21.57)
15 - 19	22 (48.89)	36 (63.16)	58 (56.86)
≥ 20	4 (8.89)	5 (8.77)	9 (8.82)
Total	45 (100%)	57 (100%)	102 (100%)

above and here 24 (24 percent) said that they did not know of any of the four complications. Fifteen were accounted for (given above) as they were not told but the remaining 9 were told but either had forgotten (very unlikely) or were contradicting themselves. Thirty-four knew of all the 4 complications, 2 had left them blank. Twenty-two accepted knowledge of some of the four complications. The remaining 20 did not complete all the four columns - 10 only 3 of the 4, 6 only 2 of the 4 and 4 only 1 of the 4. However, these 20 knew the complications except 4.

Patient Education

Five items which were felt that doctors or their medical staff are likely to advise their patients - to stop smoking, to lose weight, to reduce salt intake, to stop taking liquor and to take drugs for life - were requested. Forty-eight (47.1 percent) were advised on the above 5 items, 1 denied being told of any and 1 left it blank. Twenty-six were advised on all items except on therapy being for life. In all 38 of 95 (7 left it blank) denied being told hypertension is a chronic disease that requires lifelong treatment. Of the 43 smokers (42.2 percent of hypertensives), 30 smokers were advised to discontinue smoking and 13 were not advised to stop smoking. Thirty-six (35.3 percent) had never smoked, 22 (21.6 percent) were ex-smokers in this group and 1 had not completed the column.

Compliance of Therapy

Patients were advised on drug therapy, weight reduction and cessation of smoking. Compliance on all these factors varied. Fifteen (14.7 percent) hypertensives were not taking drugs as they felt they no longer had hypertension. Ten (9.8 percent) took drugs only when they had "symptoms" of hypertension. Two had ceased taking drugs due to side-effects. Of these 27 (26.5 percent) who were not on or were on irregular treatment, 10 were symptom-motivated and the other 17 were asymptomatic cases. The rest of the 74 (72.5 percent) said that they took drugs as prescribed by the medical officer. However, 32 of the 74 indicated that they had seen the medical officer less than 12 times during the preceding 12 months. Assuming that drugs are prescribed for one month at each visit, and all these visits were for hypertension review, these 30 did not come for review monthly and hence defaulted on drug treatment. In all, 60 (59 percent) did not adhere to

drug therapy. A check of the medical records of 10 patients who visited the medical officer 12 or more times showed 4 of them to have had irregular follow-up and treatment. This shows patient history on compliance cannot be relied upon and non-adherence to drug therapy was more than 59 percent indicated above. Traditional methods of treatment were tried by only 12 of them. Four of them were still continuing it as they felt they had improved with treatment.

Weight reduction compliance was a dismal failure. Thirty-one (30.4 percent) said they were overweight and 29 of these admitted that they were advised by the medical officer to reduce weight but failed to do so. One over-weight individual said he was not advised and another had left it uncompleted. There were others who denied being overweight but in fact obese as for example the 62 inches individual with a weight of 180 pounds.

There were 30 smokers who were advised to give up smoking (as accepted by the respondents) but only 9 gave up the habit.

DISCUSSION

The management of high blood pressure as with other chronic conditions or diseases begins with the education of the patient on his illness, his drug therapy and other aspects of treatment such as weight reduction, low salt diet and cessation of smoking.¹ This needs to be told in clear, simple and concise form that the patient can understand preferably supplemented with written information such as that prepared by Pfizer, "Know Your Hypertension". This is necessary for the patient's co-operation in the management plan. With such an approach, compliance would be better as shown in several studies,^{4,5} and it behoves on the patient to assume full responsibility for his own illness. Besides lack of patient education, other important factors in non-compliance are complexity of drug regimes and lack of attention to patient follow-up visits.⁶ In this study, more than 59 percent did not adhere to the drug regime prescribed. This is greater than the often quoted "rule of halves" where 50 percent of the treated hypertensives fail to adhere to therapy,⁷ but this figure in a closed and disciplined community is considered high and with better patient education and follow-up it can be lowered substantially (or brought to a minimum). Patient education in this series was inadequate. Only 48 percent were advised on all aspects. Compliance in

other areas such as weight reduction was poor too. Twenty-nine of 31 overweight hypertensives (own estimation) who admitted to being advised to reduce weight failed to do so. Adherence to advice on smoking was slightly better - 30 percent success rate. In all, compliance with drug therapy and non-drug therapy — weight reduction and stopping smoking — was poor. Greater efforts should be made to get the majority to follow advice given and an outline of possible strategies is given by Jenkins⁸ and on behaviour modification by Tapp *et al.*⁹

Fifty-five percent of the hypertensives were asymptomatic. This group is special as without symptoms, they need to be convinced of therapy for life. Moreover, side-effects of drug therapy may cause considerable inconvenience in a small percentage of cases. It is vital that this large group should be well informed of their illness, therapy, etc. It has been shown that labelling a person as hypertensive does more harm than good as increased absenteeism was found among Canadian steel workers by Sackett *et al.*¹⁰ In this series no difference was observed with regard to compliance between symptom-motivated and asymptomatic patients. Of the 31 overweight hypertensives, 16 were asymptomatic and 15 symptom-motivated cases. With drug therapy, 25 symptom-motivated cases and 34 asymptomatic cases were not on regular drug treatment.

Patient education in this series reveals inadequacies. Twenty-five cases denied that they were given information on complications of hypertension by the medical staff and 15 of these did not know of the 4 complications — stroke and problems related to heart, eye and kidney. Twenty-six others had only partial knowledge of the complications and 38 were not informed that hypertension is a chronic disease that requires lifelong drug therapy.

A check of the records indicates the current recording system is inappropriate and inadequate for quick visualization of the blood pressure and treatment over time and proper follow-up. A special BP record needs to be devised for use such as that used by the Blackstone Family Practice Center.¹¹ A chronic disease clinic for hypertension and diabetes should also be introduced where adequate follow-up, recall, etc can be systematically done and compliance to therapy can be expected to be better. Alternatively, a Health Education Department be established in every major hospital to carry out patient education as

suggested by Devaraj.¹² The current system is inadequate and needs to be quickly rectified for quality patient care.

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