

Treatment compliance and knowledge of hypertensive patients in Hlinethaya Township, Yangon Division

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A cross-sectional survey was conducted on 133 hypertensive patients in Hlinethaya Township, Yangon Division in May 2007. The aim of the study was to determine the treatment compliance of hypertensive patients, their knowledge and misconception about hypertension. The mean age of the participants was 54.67 ± 12.77 years. Compliance was measured by therapeutic outcome method where blood pressure less than 140/90 mmHg was considered as the indicator of treatment compliance. Compliance with treatment was observed in only 29% of the respondents. The compliance was better in those aged <45 years than older patients (48.5% Vs 9.4%; $p < 0.01$). Among the respondents, 60.2% believed that they could stop drug treatment once they achieved blood pressure control. Although 34.6% of respondents were aware that too much salt intake was an etiological factor in hypertension, 43.6% did not know the complications of hypertension. The findings indicate that there is a need for health education to enhance the compliance and knowledge about the disease among hypertensive patients in the study area.

INTRODUCTION

Hypertension is an important public health problem of global dimensions, both in developed and developing countries. It has been estimated that about 20% of adult population have high blood pressure worldwide [1]. High blood pressure contributes to the leading cause of morbidity and mortality from coronary artery disease and stroke [2, 3]. Although safe and effective drugs are available, the management of hypertension is still far from optimal especially in the developing countries [4].

According to a previous cardiovascular diseases survey in Myanmar, the prevalence of hypertension was 12.5% and 14.6% in rural and urban areas respectively [5]. A previous study conducted in Hlinethaya Township by diabetes mellitus control project, Myanmar revealed that the prevalence of hypertension in that area was 35%

(Personnel communication). A major factor accounting for inadequate control of hypertension is poor compliance with treatment [6, 7, 8]. Compliance was considered as the adherence to medical advice about life-style modification as well as to keeping appointments for follow-up and taking treatment as prescribed. Poor compliance is especially common in the patients with poor knowledge, understanding, and perception of hypertension. As there was no data on treatment compliance and knowledge of hypertension in Hlinethaya Township, Yangon Division, this study was carried out with the following objectives.

Objectives

- To determine the treatment compliance of hypertensive patients in Hlinethaya Township, Yangon Division
- To find out the hypertensive patients' knowledge and misconception about the disease

MATERIALS AND METHODS

Study area and population

The study was conducted in Hlinethaya Township, Yangon Division in May 2007. A cross-sectional descriptive study design was used. An urban area of Hlinethaya Township, Yangon Division was purposely selected and five wards from that area were selected by using probability proportionate to sampling (PPS). Persons who had hypertension for at least 6 months were identified through health staff and members of Ward Peace and Development Council (WPDC) of selected wards before the survey. Then subjects were invited to come to the office of WPDC. From each ward, subjects were taken consecutively till the required sample size was accomplished.

Sample size determination

It was assumed that crude prevalence of hypertension in community was 15% and compliance of treatment among hypertensive patients was 50%. Therefore, the proportion of hypertensive patients with proper compliance was 7.5% and desired precision was set at 0.05, the required sample size were about 106. In this study, a total of 133 subjects were recruited in order to cover the non-response rate.

Methodology

Before the data collection, informed consent was obtained from each participant. Respondents were interviewed by trained interviewers using structured questionnaire at office of WPDC ensuring their privacy. Information was obtained including background characteristics of respondents, family history of hypertension, smoking status, presence of other chronic diseases, duration of hypertension, mode of diagnosis, number of drugs taken, regularity of taking drugs, and difficulties in complying with treatment.

Regarding the knowledge, subjects were asked about the possibility of total curing of hypertension. They were also asked whether treatment should be stopped if blood

pressure was controlled. Moreover, age and gender susceptibility, causes and complications of hypertension, and if it was possible to prevent the disease were sought. In this regards, respondents answered to the questions till the single response was obtained.

Blood pressure was taken two times, one time before and another after interview. The first measurement was taken after at least 15-minute rest in a sitting position and was followed by another immediately after interview. Interview took about 15-20 minutes. BP was measured manually according to the standard protocol. Readings were based on Korotkoff first and fifth phase sounds. Measurements were done by a medical officer who was assigned for it. The mean values of the 2 separate readings were used as systolic and diastolic blood pressure of the participants.

Working definitions

Compliance was measured by therapeutic outcome method where blood pressure less than 140/90mmHg was considered as the indicator of treatment compliance.

Statistical methods

The data was analyzed using the Statistical Package for Social Sciences (SPSS), version 10. Frequency distributions were used to show the background characteristics of the respondents. The chi-square test was used to test the significance of association between categorical groups. Set 'p' value <0.05 was considered statistically significant.

Ethical consideration

This study was approved by the Institutional Ethical Review Committee, Department of Medical Research (Lower Myanmar).

RESULTS

Characteristics of the respondents

The study population included 105 females and 28 males who were eligible for the study. The overall mean age was 54.67 ± 12.77

years. Majority of the respondents (70.7%) were married while the rest were widowed, divorced or separated. Only 2.3% were single. Overall, no formal, primary, middle and high school and above education were 22.5%, 30.1%, 28.6% and 18.8% respectively. Regarding the occupation, most of the respondents were dependents (65.4%), followed by own business/office staff (22.6%) and unskilled labours (12.0%). The median family income was 50,000 Kyats/month (range, 2,200-150,000 Kyats / month).

The median duration of hypertension was 4 years (Range: 0.5-38 years). Overall mean systolic blood pressure (SBP) and mean diastolic blood pressure (DBP) were 144.18 ± 22.47 mmHg and 91.05 ± 11.57 mmHg respectively. Among the respondents, 47.4% had family history of hypertension and 17.3% had other chronic diseases such as diabetes mellitus, ischaemic heart disease and osteoarthritis. Smoking habit was found in 21.1% of the respondents. Ninety-four respondents (70.7%) reported that hypertension was diagnosed when presenting with symptoms of disease such as headache and dizziness, while in 39 respondents (29.3%) diagnosis was made accidentally.

Treatment compliance

100/133 (75.2%) of respondents reported that they took treatment for hypertension. According to the therapeutic outcome (BP < 140/90 mmHg), 39 patients (29%) were seen to be compliant. The mean SBP was 118.65 ± 11.1 mmHg in the compliance group, while in the non-compliance group it was 152.39 ± 18.11 mmHg. The mean DBP was 76.79 ± 6.69 mmHg in compliance group while it was 95.69 ± 8.22 mmHg in non-compliance group. Compliance was better among subjects aged < 45 years compared with those in older age groups ($p=0.006$). There were no significant differences in compliance rate between gender, education, occupation, marital status and monthly income (Table 1).

As regards treatment compliance, a significantly higher compliance was observed in

Table 1. Effect of demographic variables on compliance rate (BP <140/90 mmHg)

Variables	Total	Compliance		Significance (p value)
		No.	%	
<i>Age (years)</i>				
<45	33	16	48.5	0.006
45-54	29	10	34.5	
55-64	39	10	25.6	
≥65	32	3	9.4	
<i>Sex</i>				
Male	28	6	21.4	0.36
Female	105	33	31.4	
<i>Marital status</i>				
Single	3	1	33.3	0.31
Married	94	1	33.0	
Divorced/ widow/ widower	36	7	19.4	
<i>Education</i>				
No formal education	30	4	13.3	0.15
Primary school	40	14	35.0	
Middle school	38	14	36.8	
High school & above	25	7	28.0	
<i>Occupation</i>				
Dependent	87	24	27.6	0.82
Unskilled labour	16	5	31.3	
Own business/office	30	10	33.3	
<i>Income(in kyats) (n=126)*</i>				
≥50000	70	21	30.0	0.9
<50000	56	18	28.3	

* Did not include 7 patients, who did not respond willingly

patients who has taken drugs as prescribed compared to those who did not follow their doctor's advice for taking drugs (42.5% Vs 23.7%, $p < 0.038$). Other factors such as duration of having hypertension (Median: 4 years; Range: 0.5-38 years), presence or absence of difficulty with getting treatment and of having chronic disease, numbers of drugs for hypertension, mode of diagnosis of hypertension were not found to be associated with the compliance rate (Table 2). In this study, only a small number (9 patients) went on the regular follow-up.

Knowledge of hypertensive patients on disease

Knowledge of hypertensive patients on disease aspect are presented in Table 3. Almost two-thirds (61.7%) of patients believed that hypertension could have a permanent cure and 60.2% thought that they would stop the medications once control was achieved. Regarding on age and gender susceptibility to hypertension, 46.6% of patients thought that middle-aged persons

Table 2. Effect of treatment variables on compliance rate (BP<140/90 mmHg)

Variables	Total	Compliance		Significance (p value)
		No.	%	
<i>Duration of hypertension</i>				
<4 years	71	21	29.6	0.9
≥4 years	62	18	29.0	
<i>Difficulty of getting treatment</i>				
Yes	53	16	30.2	0.9
No	80	23	28.8	
<i>Having other chronic disease</i>				
Yes	25	8	32.0	0.81
No	108	31	28.7	
<i>Drugs taken as prescribed</i>				
Yes	40	17	42.5	0.038
No	93	22	23.7	
<i>Number of drugs (n=118)*</i>				
One	59	17	28.8	1
Two or more	59	17	28.8	
<i>Mode of presentation</i>				
With symptoms	94	27	28.7	0.84
Accidental finding	39	12	30.8	

*Did not include 15 patients who took either no drug or traditional medicine as an additional drug

were more likely to contract the disease than elderly and younger ones. More than half (54.9%) of the respondents reported that the occurrence of hypertension was more common in females than males. About two-thirds (34.6%) of subjects knew that excessive salt intake is the major risk factor of hypertension, while only 1.5% noticed the role of heredity in causing disease. Although 43.6% of the subjects were unaware of the complications of hypertension, about one-third (31.6%) of the respondents knew that hypertension might lead to cardiovascular complications. Neurological and renal complications were identified by 18.0% and 6.8% of patients respectively.

DISCUSSION

Non-compliance to blood pressure lowering medication is a major reason for poor control of hypertension worldwide. This study revealed that only 29% of patients had compliance with respect to treatment, although 75.2% of respondents had been receiving treatment for hypertension. Compliance rate in our study is low compared to

Table 3. Knowledge of hypertensive patients about the disease

Disease aspect	NO.	%
Yes	82	61.7
No	38	28.6
Don't know	13	9.8
<i>Can drugs be stopped once control is achieved?</i>		
Yes	80	60.2
No	49	36.8
Don't know	4	3
<i>Which sex is more susceptible to hypertension?</i>		
Males	12	9
Females	73	54.9
Both males and females	30	22.6
Don't know	18	13.5
<i>Which ages are more susceptible to hypertension?</i>		
Elderly	35	26.3
Middle age	62	46.6
Young age	4	3.0
All ages	23	17.3
Don't know	9	6.8
<i>What cause hypertension?</i>		
Excessive salt intake	46	34.6
Stress	29	21.8
Obesity	26	19.5
Heredity	2	1.5
Don't know	30	22.6
<i>What are the complications?</i>		
Cardiovascular	42	31.6
Neurological	24	18
Renal	9	6.8
Don't know	58	43.6

other studies although there are differences in the methods used. Al-Sowielem *et al.* reported the compliance rate in Saudi Arabia as 34.2% [9]. A study from Nigeria showed good compliance with drug treatment was observed in 54.2% of respondents [10].

Our findings did not show statistically significant differences in compliance with sex, marital status, education and monthly income, but relatively young patients (<45 years) had better compliance rate than older ones. It could be explained by the fact that young patients may be more receptive to hypertension related education from mass media sources. Another possible explanation is the missed doses due to forgetfulness among older patients. Treatment factors associated with the compliance were also determined. In this regard, better compliance among respondents who had taken drugs as prescribed was not surprising, but

emphasizing the need for health care personnel to encourage this habit, especially in the areas with poor control of hypertension. The practice of mono-therapy for hypertension did not have a significant impact on the compliance rate in this study. In support of this, a study from Japan also found that medication compliance was related to the frequency and timing of dosing rather than the number of drugs [11].

The relationship between patients' misconception about hypertension and poor compliance has been documented [12]. In this regard, this study showed that considerable proportion of patients had lack of knowledge on taking medication, such as believing in a permanent cure for hypertension and discontinued drugs once control is achieved. Since these misconceptions have a considerable impact on compliance, it is imperative that health care personnel should correct them through health education. Screening for hypertension of all ages and both sexes will be affected if there are misconceptions about age and gender related susceptibilities, as observed in this study. Furthermore, many patients believe that excessive salt intake is an important risk factor for hypertension but are ignorant of other contributing factors such as emotional stress and obesity. Although positive family history of hypertension was slightly high (47.4%) among patients, only 1.5% of patients were acknowledged of the role of heredity in the etiology of the disease. The findings indicate that there is a need for health education to enhance the compliance and knowledge about the disease among the hypertensive patients in the study area.

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