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Research Article

Frequency and Causes of Drop Out of Hypertensive Patients from Follow Up

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Abstract

Background: Target organ damage may develop due to uncontrolled blood pressure. Drop out from follow up is one of the causes of uncontrolled hypertension.

Subjects and Methods: This was a cross sectional study, carried out in Hypertension and Research Center Rangpur, Bangladesh. On an average about 30 patients visit Hypertension and Research Center, Rangpur daily. From the daily visited patients every 3rd patient was included in this study.

Results: In this study, we have studied a total of 384 patients. Mean age of the patients were 55.85 ± 11.109 years. Male were more than female (57.8 years vs 42.2 years). In our study 73.4% patients were drop out from follow up. Factors associated with drop out were- older age 77.4% (60 years and above), male sex (59.6% vs 40.4%), service man 72.5%, monthly income < 5000 BDT 75.9%, illiterate 71.7%, graduate and higher education 70.9% and those with duration of hypertension more than 10 years 71.9%. Drop out was more in smoker 78.6% than nonsmoker 70.9% and in complicated hypertensive patients than uncomplicated patients (84.6% vs 72.6%). Causes of drop out were long distance from the center (24.13%), migration to other divisions 17.24%, combinedly ignorance of the patient and poor motivation 16.09%, lack of faith in the physician/change physician 5.74% and only 1.91% patients told of economical problem.

Conclusion: In our study 73.4% of the hypertensive patients were drop out from follow up. Drop out was more in male sex, age above 60 years, service man, monthly income below 5000 BDT, illiterate and those with duration of hypertension more than 10 years. Long distance from the centre, migration to other divisions, ignorance of the patient and poor motivation were the main causes of drop out.

Keywords: *Drop Out; Hypertension; Follow Up; Rangpur*

Introduction

Hypertension is the most important risk factor for heart diseases and stroke, and responsible for about 50% of the deaths caused by these diseases [1]. The aim of treatment is to keep the patient's blood pressure within the ideal limits, to prevent complications [2]. It is

responsible for 13.5% of all deaths in the world, representing a severe public health problem because of its high prevalence, low control rate, and high economic and social costs [3,4]. Study from Bangladesh has shown that majority (71.2%) of the hypertensive patients died due to hypertension related complications (detected from verbal autopsy); 33.3% due to stroke, 20.3% coronary artery disease and 17.8% chronic kidney disease [5]. Globally, an estimated that approximately 26% of the world's population (972 million people) has hypertension, and the prevalence is expected to increase to 29% by 2025, driven largely by increases in economically developing nations [6]. A marked increase in prevalence of hypertension (from 11.3% to 17.9%) was observed in Bangladesh from 1999 to 2010 [7,8]. In Rangpur division (Northern part) of Bangladesh prevalence of hypertension and pre-hypertension is 33.3% and 29.9% respectively and blood pressure was controlled in 36.06% [9]. In the literature, keeping the blood pressure within the ideal limits has been indicated to reduce stroke risk approximately by 38%, congestive heart failure risk by 42% and coronary heart disease risk by 28% [10]. For effective blood pressure control patient have to come to regular follow up according to the following schedule-uncontrolled hypertensive patients 3-4 weekly, controlled hypertensive patients 3-6 monthly [11]. This study was carried out to see how many patients drop out from schedule follow up and what are the causes of drop out of hypertensive patients from follow up.

Methodology

This was a cross sectional study, carried out in Hypertension and Research Center Rangpur, Bangladesh from 12/10/2017 to 11/01/2018. On an average about 30 patients visit Hypertension and Research Center, Rangpur for follow up daily. From the daily visited follow up patients every 3rd patient was taken to generate the study sample. The first patient was chosen randomly from hypertensive patients 1 to 10. The patients who visited the center for the 1st time, diagnosed as secondary hypertension, getting treatment for hypertension for less than 3 months, who were too ill/unable to answer the questionnaire and patients who did not consent were excluded from the study.

Data collection

The study purpose and details was described to the patient and informed consent was obtained before enrollment in this study. The following data were collected; socio-demographic details, duration of hypertension, adherence to the follow up schedule, medication history, risk factors, complications and other comorbidities. The cause of drop out from follow up was also recorded.

Statistical analysis

Data analysis was done according to the objectives of the study by using SPSS-17.0 (Statistical Program for Social Science) software program. The result of the clinical study and statistical analysis is presented in the form of text, table, bar and chart.

Ethics statement

Before the commencement of the study, formal ethical approval was obtained from the Ethical Review Committee (ERC) of Hypertension and Research Center, Rangpur, Bangladesh. All methods were performed in accordance with the current Declaration of Helsinki. All participants gave informed written consent before participation.

Results

In this study, we have studied a total of 384 patients. Mean age of the patients was 55.85 years. Male were more than females (57.8 years vs 42.2 years). Table 1 shows the socio-demographic characteristics of the patients.

Variables	Frequency	Percentage (%)
Mean age	55.85 years (SD 11.109) (age range 20 - 84 years)	
Sex		
Male	222	57.8%
Female	162	42.2%
Residence		
Rural	189	49.2%
Urban	195	50.8%
Level of education		
Illiterate	46	12%
< 5 class	79	20.6%
5 - < 10 class	92	24%
> 10	57	14.8%
Graduate and above	110	28.7%
Occupation		
Service	120	31.3%
Business	53	13.8%
Agriculture	48	12.5%
Retired	18	4.7%
Housewife	139	36.2%
Others	6	1.6%
Monthly income		
< 5000 taka*	195	50.8%
5000 - < 10000 taka	44	11.5%
10000 - < 15000 taka	43	11.2%
> 15000 taka	102	26.6%

Table 1: *Socio-demographic characteristics of the study population (n = 384).*

1 USD = 88 BDT.

In this study patients 38.2% were smokers, among them 71.42% gave up smoking after diagnosis of hypertension and 28.57% continued smoking. In our study only 7.55% patients had co-morbidity, majority had DM (2.9%) followed by asthma (2.1%) and COPD (0.3). At the time of enrollment in our center, the duration of hypertension of the patients was 7.26 years (average), minimum 0.08 years and maximum 34 years. 99% patients admitted that they were given proper counseling at the time of treatment and 67.36% thought the counseling was adequate for their understanding. 59.4% of patients knew that they have to come to follow up.

In our study 73.4% of patients dropped out from follow up. Among the drop out patients 77.4% were older (60 years and above), male (59.6%), service man 72.5%, monthly income < 5000 BDT 75.9%, illiterate 71.7%, graduate and higher education 70.9% and those with duration of hypertension more than 10 years 71.9%. Drop out was more in smokers 78.6% and in complicated hypertensive patients 84.6%.

Causes of drop out were collected by phone call, in 7.45% patients phone was switched off (we have called in 3 different times in 3 different days); commonest cause was long distance from the center (24.13%) and migration to other divisions 17.24%. Table 2 showing causes of drop out of the patients.

Causes of drop out	Percentage/frequency
Long distance from centre	24.13% (63)
Migration to other division	17.24% (45)
Both ignorance of the patient and poor motivation	16.09% (42)
Ignorance	13.40% (35)
Poor motivation	9.96% (26)
Lack of faith in the physician/change physician	5.74% (15)
Economical problem	1.91% (5)
Others	11.49% (30)

Table 2: *Causes of drop out from follow up (n = 261).*

Among the participant of this study, only 47.4% answered they knew that they have to take drug for life long period. 16.1% patients stopped drug intake (drop out from treatment). 75% adherent with dietary and lifestyle modification as treatment of hypertension. Among our patients 6.77% had target organ damage (TOD); 38.46% had IHD, 34.61% had stroke, 11.53% had CKD, 7.70% had retinopathy and 7.70% had both IHD with CKD.

Discussion

Hypertension is a disease for a lifelong period, the patient needs to take the drug and come to regular follow up. If any patient dropout from follow-up, his blood pressure may be uncontrolled and ultimately he becomes at risk for development of complications. So, the real picture of drop out is pivotal for effective hypertension management strategy. There is limited data regarding this topic. Similar study [12] was done in our center in 2012, we found 68.3% of patients dropout from follow-up. After that new counseling method was introduced, every patient counsel via audio-visual communication, if any patient does not come to schedule follow up, a SMS (short message service) will be given in his personal mobile number. In spite of all the measures in our current study drop out from follow up increased (73.4%) than previous study (68.3%) [12]. Though the patients admitted that the counseling was adequate (99%) and 59.4% patients knew that they have to come to schedule follow up, majority did not maintain the follow up; so there may be a gap between counselor and the patients. Further study will be required to identify the actual limitations of counseling and causes of drop out.

In a study from China [13], 50% of the patients dropped out from follow-up at 11 months, 74% of patients dropped out at 5 years. Drop out from follow up was 56% in a study from Brazil [14], where definition of dropout from follow up was 'no-show to follow-up in a period from 12 to 24 months after the initial evaluation. But in our study drop out was labeled if 'no follow up for 4 months in uncontrolled hypertension and 9 months in controlled hypertension.' Cause of high dropout in our study may be the shorter time frame to declare follow up than other studies. In our study older age 77.4% (60 years and above), service men 72.5%, monthly income < 5000 BDT 75.9%, illiterate 71.7% and those with duration of hypertension more than 10 years 71.9% are significantly associated with drop out. Similar findings was seen in other studies [12,14].

In earlier study [12] drop out was more in uncomplicated hypertensive patients 72.2% vs 7.2%. But in our study we have found the opposite result, drop out was more in patients who had complications (84.6% vs 72.6%). Reports from other studies [12,14] revealed that dropout were significantly more in newly diagnosed hypertensive patients. In our study we did not classify newly diagnosed and old hypertensive patients, but we found drop out was more in those duration of hypertension than 5 years. Ignorance of the patient was the

main patient reported cause of dropout from the follow up, followed by patient's busy schedule in previous study [12]. This implies, that asymptomatic nature of this silent killer disease do not allow them to come for regular follow up. In the present study long distance from the center, migration to other districts was the most common self reported cause of drop out. Ignorance of the patient and poor motivation combinely became the 3rd common cause of drop out. Proper motivation of the patients by health education, about the long term complications of hypertension, may improve patient's adherence to regular follow up [13,15-18].

Adherence may be defined as consuming ≥80% of doses of the prescribed medication regimen correctly [16]. WHO has defined adherence to long term therapy as "the extent to which a person's behavior-taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider [5]. Adherence to pharmacotherapy for hypertension varies from around 43% to 88% worldwide depending on the population under study, the duration of follow up, the method of assessment of adherence. In our study 75% patients adherent with dietary and lifestyle modification as treatment of hypertension and 83.9% adherent to drug. This high figure of adherence is probably due to the data from the center, community based data are much lower, adherence to drug 46.67%, dietary and lifestyle modification were 16.67% in a community based study [9] of this region.

Conclusion

In our study 73.4% of the hypertensive patients were drop out from follow up. Drop out was more in male sex, age above 60 years, service man, monthly income below 5000 BDT, illiterate and those with duration of hypertension more than 10 years. Long distance from the centre, migration to other divisions, ignorance of the patient and poor motivation were the main causes of drop out.

Limitation of the Study

Sample size was small, causes of drop out were collected over telephone, so patients might not find time to think properly and answer.

Future Direction

Community based study with large sample size will be needed to determine the prevalence of and causes of drop out from follow up.

Conflict of Interest

There was no conflict of interest.

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