

Prevalence of other associated risk factors of Cardiovascular Disease among Hypertensive patients in Eastern Nepal.

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ABSTRACT

Background and Aims : Cardiovascular disease is the leading cause of death worldwide. Hypertension is one of the most important risk factors for Cardiovascular Diseases which cause 45% of global cardiovascular morbidity and mortality. Hypertension, along with other risk factors such as smoking, diabetes and obesity, is an emerging epidemic in many developing countries. This study aimed to find out the prevalence of other associated conventional risk factors of cardiovascular disease among hypertensive patients.

Methods: Community based cross sectional study was conducted among 154 hypertensive patients over age 35yrs in Dharan Municipality. Data were collected by face to face interview method using structured questionnaire then analyzed by using descriptive and inferential statistics.

Results: Around 29% hypertensive patients were between the age of 45 – 55 yrs and above 65 years. Prevalence of obesity was significantly higher 70.8%. Similarly, 46.8% had habit of taking high salt diet and 58.4% were taking high fat diet. Likewise, less physically active people were 58.4% and 64.9% were consuming alcohol regularly. Whereas 42.9% were smoker and 48.7% had stressful life. Moreover, this study also showed 46.1% had uncontrolled blood pressure in this hypertensive group.

Conclusion: Cardiovascular Disease risk factors are highly prevalent among the hypertensive patients in this study.

Citation

Buna Bhandari, Mahesh Bhattarai, Manjul Bhandari, Prevalence of other associated risk factors of Cardiovascular Disease among Hypertensive patients in Eastern Nepal. *Nepalese Heart Journal* 2014;11(1): 27-31.

Keywords

Cardiovascular disease, Hypertension, Risk factors

INTRODUCTION

Cardiovascular disease (CVD) is the most important cause of death worldwide, accounting for 48% of death due to Non communicable diseases in 2012.¹ Hypertension is one of the important risk factor for CVD, causing 45% of global CVD morbidity and mortality.² Along with other major chronic disease risk factors such as smoking, diabetes, and

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obesity, hypertension is an emerging epidemic in many lower- and middle-income countries.^{3,4} Heart disease is estimated to increase continuously during the next few decades. In fact, the number of people over 60 years of age is expected to double by 2025 and to triple by 2050 globally.⁵ Due to economic growth and globalization, CVD is increasing even in the developing countries where they were labeled as the diseases of affluence.⁶ In Asian countries, as a result of economic growth, the prevalence of obesity and diabetes are increasing.⁷ Moreover, western lifestyle, sedentary habits and high fat diet leads to increased cardiovascular disease.⁸ Smoking is a potent risk factor not only for coronary artery disease but also for stroke, the population-attributable fraction of smoking for CVD is high, at 30%, second only to high blood pressure.^{9,10} The population-attributable fraction of hypertension for CVD is as high as 60% in Asian countries.¹¹

According to the World Health Organization's recent update,¹² diabetes, hypertension, and obesity are important risk factors for cardiovascular deaths in the world. This study aimed to find out the prevalence of other associated cardiovascular risk factors among hypertensive patients of Dharan municipality, Eastern part of Nepal.

METHODS

Community based descriptive cross sectional study was conducted in Dharan municipality, Nepal. Study population were 154, which was calculated assuming a prevalence of the risk factors of 50% with a 95% confidence interval where allowable error was taken as 16% of Prevalence. Known cases of Hypertension, diagnosed in BP Koirala Institute of Health Sciences (BPKIHS) were included in the study. First, the total number of hypertensive patient who visited during the period of one year in BP Koirala Institute of Health Sciences were listed from the register and by using simple random sampling lottery method, the required number of sample was selected. Data was collected by face to face interview method and measurement of blood pressure, height and weight was done. Structured questionnaire was completed on behalf of each participants. The collected data was edited, coded and categorized. Data was entered into Microsoft Excel and then analyzed in the Statistical Package for Social Sciences 16. For descriptive analysis, mean, standard deviation and median was calculated. Categorical variables were compared using the nonparametric Chi-squares tests.

RESULTS

This community based cross sectional descriptive study included one hundred and fifty four hypertensive patients aged over 35 yrs of Dharan municipality.

Sociodemographic variables : The median age of the respondent was 54.5 years. Twenty Nine percent were between the age of 45 – 55 years and 65 years and above, and 53.9% were female. More than half of the respondents 85 (55%) were Hindu whereas (39%) belong to disadvantaged janajatis. Literate were 88 (57%), among them, 46.5% were educated up to secondary level. Sixty nine percentages of them had employment. Farming was common occupation for 44.9% of the respondents as presented in Table 1.

Table 1. Distribution of socioeconomic characteristics of respondents

Characteristics	Categories	Number	%
Age in years	35 – 45	32	20.8
	45- 55	45	29
	55- 65	32	20.8
	65 +	45	29
Median age	54.5		
Sex	Male	71	46.1
	Female	83	53.9
Caste	Disadvantaged Janajatis	60	39
	Upper caste group	59	38.5
	Relatively advantaged janajatis and dalit	35	22.5
Religion	Hindu	85	55.2
	Christian	30	11.0
	Kirat	22	19.5
	Buddhist	17	14.3
Educational Status	Literate	88	57.1
	Illiterate	66	42.9
Educational level	Below Primary level	31	20.1
	Above primary level	57	79.9
Marital status	Married	121	78.6
	Widow	33	21.4
Current occupation	Unemployed	47	30.5
	Employed	107	69.5
Main occupation	Farmer	48	31.2
	Service holder	22	14.3
	Business	31	20.1
	Others	6	3.9

Prevalence of CVD risk factors: Obesity was significantly ($p < 0.001$) higher 70.8% in the study population. Among hypertensive patient most of them 63% (97) had family history of hypertension which was significant ($p = 0.001$). Habits of taking high salt diet was found in 46.8% but habit of taking high fat diet was significantly ($p = 0.036$) higher in 58.4%. Likewise less physical active people were significantly ($p = 0.036$) higher 58.4% in this hypertensive group. Furthermore alcoholism was also found significantly ($p < 0.001$) higher 64.9%, in contrast to smoking (42.9%) and stress (48.7%) which were not significant. Similarly 46.1% of them had uncontrolled blood pressure as mentioned in table 2.

Table 2. Distribution of prevalence of other associated cardiovascular risk factors (n= 154)

Characteristics	Categories	Frequency	p. Value ^a
Age	35 – 45	32(20.8)	0.222
	45- 55	45(29)	
	55- 65	32(20.8)	
	65 +	45(29)	
Obesity	Obese	109 (70.8)	<0. 001*
	Non obese	45(29.2)	
High salt diet	Yes	72(46.8)	0.420
	No	82(53.2)	
High fat diet	Yes	90(58.4)	0.036*
	No	64(41.6)	
Less Physical activity	Yes	90(58.4)	0.036*
	No	64(41.6)	
Alcoholism	Yes	100(64.9)	<0. 001*
	No	54(35.1)	
Smoking	Yes	66(42.9)	0.076
	No	88(57.1)	
Stress	Yes	75(48.7)	0.747
	No	79(51.3)	
Blood Pressure controlled	Yes	84(53.9)	0.334
	No	70(46.1)	

DISCUSSION

Our study assessed the prevalence of other associated cardiovascular risk factors among hypertensive patients. We found high prevalence of obesity, family history of hypertension, taking high fat diet, alcoholism and less physical activity. In our study, among hypertensive patients (29%) were in age group between 45-55 years and 65 years and above whereas WHO study 1996⁹ showed 30% in above 30yrs and 14.19% among young adults. Higher portion of study population were female.

In Asian countries, the prevalence of overweight and obesity is increasing. Particularly, a moderate increase in body mass index, makes South Asians more prone to develop non communicable diseases like diabetes and other related diseases.¹¹ Our study found 70.8% of the study populations were obese according to their Body Mass Index (BMI) which also put them at risk of developing cardiovascular disease which is also higher than the study of Republic of Belarus among hypertensive patients 32%¹³, and in general population in Patna 31.94%¹⁴ and among medical students of Nepal 21%¹⁵ and study done in Banepa Kavre Nepal showed 54.4%¹⁶.

Similarly, this study showed that 46.8% had habits of taking high salt diet which increase the risk of developing cardiovascular diseases. Smoking is one of the most important modifiable risk factors for increasing cardiovascular disease. In our study, the prevalence of current cigarette smoking was 42.9% which was higher than the study done in Belarus (31%)¹³ among hypertensive patients and study done among Nepali medical students 22%¹⁵ and in Patna 12.5%.¹⁴

This study found that 64.9% of the hypertensive patients were taking alcohol which was significantly higher. The Joint National Committee (JNC) 7¹⁷ recommends that patients should involve themselves in aerobic exercise for at least 30 minutes per day on most days of the week. This study showed more than half (64%) of the respondents had habits of doing regular exercise.

INTERHEART study¹⁸, a global multicentre case control study, in which from Nepal 244 cases and 239 controls were included, demonstrated abnormal lipids, smoking, hypertension, diabetes, abdominal obesity, psychosocial factors, less consumption of fruits and vegetables, alcohol consumption and physical inactivity as important risk

factors. Nationwide 2007 noncommunicable disease Risk Factor Survey¹⁹ and other smaller studies²⁰ have demonstrated many of these as major risk factors. Similarly in our study cardiovascular risk factors such as obesity, physical inactivity, alcohol consumption and

habit of high fat intake were significantly higher among the hypertensive patient.

This study was done in small scale so it suggests for further analytical study in large scale.

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