

Assessment of Prevalence of Hypertension and Diabetes among Known Population at a Tertiary Care

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ABSTRACT

Background: The overall prevalence of hypertension or raised blood pressure in adults aged 25 and above was around 40%. Diabetes is also a common illness affecting a major proportion of world's population. Hence; the present study was planned for assessing the prevalence of hypertension among patients of known population.

Materials & Methods: A total of 200 patients attending the OPD of Department of General Medicine, Government Medical College, Haldwani, Nainital, Uttarakhand (India) were included in the present study. Complete demographic details of all the patients were obtained. Blood samples were obtained from all the patients for assessing the blood glucose levels. Blood pressure was recorded in all the patients. All the data was recorded in Microsoft excel sheet. Diagnosis of hypertension and diabetes was done based on criteria described previously in literature.

Results: Overall prevalence of diabetic and hypertensive patients in the present study was 12.5 percent and 16.5 percent respectively. Majority of the diabetic and hypertensive patients of the present study belonged to the age group of more than 50 years. Majority of hypertensive and diabetic patients of the present study were males.

Conclusion: Both hypertension and diabetes represent a significant health problem. PFN is significantly better in comparison to DHS. However; further studies are recommended.

KEYWORDS: Diabetes, Hypertension.

INTRODUCTION

Globally, the overall prevalence of hypertension or raised blood pressure in adults aged 25 and above was around 40% in 2008. Worldwide, hypertension is estimated to cause 7.5 million deaths, about 12.8% of the total deaths. Hypertension accounts for 57 million disability adjusted life years (DALYS) or 3.7% of total DALYS.¹⁻³ The World Health Organization (WHO) has estimated that globally about 62% of cerebrovascular diseases and 49% of ischemic heart diseases are attributable to suboptimal blood pressure (systolic > 115 mmHg), with little variation by sex.^{4,5}

Hence; under the light of above mentioned data, the present study was planned for assessing the prevalence of hypertension and diabetes among patients of known population.

MATERIALS & METHODS

The present research was planned and conducted in the Department of General Medicine, Government Medical College, Haldwani, Nainital, Uttarakhand (India) and it included evaluation and assessment of prevalence of hypertension and diabetes among patients of known population. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol. A total of 200 patients attending the OPD of department of General medicine were included in the present study. Complete demographic details of all the patients were obtained. Blood samples were obtained from all the patients for assessing the blood glucose levels. Blood pressure was recorded in all the patients.

All the data was recorded in Microsoft excel sheet. Diagnosis of hypertension and diabetes was done based on criteria described previously in literature.^{6,7} Data that were recorded in Microsoft excel sheet; were analyzed by SPSS software. Chi- square test was used for assessment of level of significance.

Table 1: Overall prevalence of diabetes and hypertension

Parameter	n	%
Diabetes	25	12.5
Hypertension	33	16.5

Table 2: Age-wise distribution of diabetic and hypertensive patients

Age group (years)	Diabetic patients	Hypertensive patient
Less than 30 yeas	5	6
30 to 50 years	10	12
More than 50 years	10	15

Table 3: Age-wise distribution of diabetic and hypertensive patients

Gender	Diabetic patients	Hypertensive patient
Males	15	18
Females	10	15

RESULTS

In the present study, a total of 200 patients to the department of internal medicine were analyzed. Among these 200 patients, there were 25 diabetic patients and 33 hypertensive patients. Overall prevalence of diabetic and hypertensive patients in the present study was 12.5 percent and 16.5 percent respectively. Majority of the diabetic and hypertensive patients of the present study belonged to the age group of more than 50 years. Majority of hypertensive and diabetic patients of the present study were males.

DISCUSSION

Hypertension (HTN) is one of the most common worldwide disease affecting humans. It is one of the most important public health challenge worldwide because of its high frequency and concomitant risks of cardiovascular and kidney disease. It has been identified as a leading risk factor for mortality and ranked three as a cause of disability adjusted life years. High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia.⁸

Diabetes is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of different organs, especially the eyes, kidneys, nerves, heart, and blood vessels.⁹

Several pathogenic processes are involved in the development of diabetes. These range from autoimmune destruction of the β-cells of the pancreas with consequent insulin deficiency to abnormalities that result in resistance to insulin action. The basis of the abnormalities in carbohydrate, fat, and protein metabolism in diabetes is deficient action of insulin on target tissues.¹⁰

In the present study, a total of 200 patients to the department of internal medicine were analyzed. Among these 200 patients, there were 25 diabetic patients and 33 hypertensive patients. Overall prevalence of diabetic and hypertensive patients in the present study was 12.5 percent and 16.5 percent respectively. Meshram II et al studied prevalence, correlates, and awareness of hypertension among tribal adult population in Kerala. Data was collected on socio-demographic and behavioral factors, and anthropometric measurements were carried out. Body mass index (BMI) was categorized using the classification recommended for Asians. Waist circumference ≥90 cm for men and ≥80 cm for women was used cut off for defining an abdominal obesity. Bivariate and multivariate analysis was carried out to study association of hypertension with socio-demographic variables, personal habits, and obesity. The overall prevalence of hypertension was 40% (n=1671). The prevalence of hypertension increases with increase in age among both the genders. Regression analysis showed that the risk of hypertension was significantly (P<0.001) lower among educated and among higher socio-economic status group. Sedentary activity had 1.3 times (CI=1.09-1.60) and alcohol consumption had 1.4 (CI=1.17-1.73) times higher risk of hypertension. The risk of hypertension was 1.7 times higher among overweight/obese subjects. Overall, only 10% (n=164) of the adult population was aware of hypertension status, and about 8% (n=129) were on regular treatment. It was observed that the prevalence of hypertension was higher among tribal adult population of Kerala and was associated with age, gender, education, HHs wealth index, physical inactivity, alcohol consumption, and overweight/obesity.¹¹

In the present study, majority of the diabetic and hypertensive patients of the present study belonged to the age group of more than 50 years. Majority of hypertensive and diabetic patients of the present study were males. Mohan V et al studied the prevalence, awareness and control of hypertension in Chennai representing Urban South India. The Chennai Urban

Rural Epidemiology Study (CURES) is one of the largest epidemiological studies on diabetes carried out in India, where 26,001 individuals aged $>$ or $=$ 20 years were screened using systematic random sampling method. Hypertension was present in 20% [men: 23.2% vs. women: 17.1%, $p < 0.001$] of the study population. Isolated systolic hypertension (Systolic BP $>$ or $=$ 140 and Diastolic BP $<$ 90 mmHg) was present in 6.6% while isolated diastolic hypertension (DBP $>$ or $=$ 90 and SBP $<$ 140 mmHg) was present in 4.2% of the population. Among the elderly population (aged $>$ or $=$ 60 years), 25.2% had isolated systolic hypertension. Age, body mass index, smoking, serum cholesterol and triglycerides were found to be strongly associated with hypertension. Among the total hypertensive subjects, only 32.8% were aware of their blood pressure, of these, 70.8% were under treatment and 45.9% had their blood pressure under control. Hypertension was present in one-fifth of this urban south Indian population and isolated systolic hypertension was more common among elderly population.¹²

CONCLUSION

Under the light of above mentioned data, the authors conclude that both hypertension and diabetes represent a significant health problem. PFN is significantly better in comparison to DHS. However; further studies are recommended.

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