

ORIGINAL ARTICLE

A STUDY TO EVALUATE CORONARY HEART DISEASE, CEREBROVASCULAR ACCIDENT AND RENAL FAILURE AMONG HYPERTENSIVE AND NON-HYPERTENSIVE PATIENTS ADMITTED IN MEDICINE DEPARTMENT OF TERTIARY CARE HOSPITAL, AHMEDABAD**Nirmal Brahmhatt¹, Hitesh Bhabhor², Ashish Chaudhari³, Anoop Singh³, Sohil Mansuri³****Author's Affiliations:** ¹Tutor, Dept. of Community Medicine, GMERS Medical College, Gandhinagar; ²Tutor, Dept. of Community Medicine, Government Medical College Surat; ³Resident, Department of Community Medicine, B. J. Medical College, Ahmedabad, Gujarat**Correspondence:** Dr. Nirmal Brahmhatt, Email: dr.nirmalrao@yahoo.com**ABSTRACT****Background:** Hypertension is the major public health problem in India and is associated with major life threatening complication. In fact, hypertension is the most prevalent chronic disease in India. The aim of this study was to evaluate the occurrence of life threatening complications among hypertensive and non-hypertensive patients.**Materials and Methods:** A retrospective hospital study was carried out among all 847 patients admitted during study period. The participants were interviewed using semi-structured questionnaire as well as their records were observed. Data was compiled and analysed in MS Excel, using chi-square test and proportions.**Results:** Occurrence of coronary heart disease, cerebrovascular accident and renal failure among hypertensive and non-hypertensive patients was evaluated. Among study population 20.30% were Hypertensives (11.57% males and 8.73% females) and 79.70% were Non-Hypertensives (50.88% males and 28.80% females). Out of 172 hypertensive patients higher number of patients were in age group of 51-60 years and 61-70 years. Occurrence of coronary heart disease and cerebrovascular accident was higher among Hypertensives as compared to Non-Hypertensives and was statistically significant.**Conclusion:** The occurrence of coronary heart disease and cerebrovascular accident was significantly higher in hypertensive patients than non-hypertensive patients among study population.**Key words:** Coronary Heart Disease, Cerebrovascular Accident, Hypertensive, Renal Failure and Non-Hypertensive**INTRODUCTION**

Hypertension is the most common cardiovascular disease worldwide.¹ Hypertension is a major public health problem in India and its prevalence is rapidly increasing among both urban and rural populations^{2,3}. In fact, hypertension is the most prevalent chronic disease in India. Over 140 million people are believed to be suffering from hypertension in the country and the number is expected to cross the 214 million mark in 2030⁴. Hypertension is a major risk factor for avoidable cardio-vascular diseases that killed 2.7 million people in 2004 and will

result in the death of over 4 million people by 2030⁵. There is however paucity of hard data on the morbidity and mortality rates from this disease in our environment^{6,7}. This study was carried out to evaluate coronary heart disease, cerebrovascular disease and renal failure among hypertensive and non-hypertensive patients and to correlate occurrence of coronary heart disease, cerebrovascular disease and renal failure with hypertension.

METHODOLOGY

A retrospective study was carried out in Medicine department, tertiary care hospital. Study was conducted on indoor patients admitted in medicine department. Study was carried out over a period of 3.5 months. Only patients who were willing to fill up the questionnaire were included in the study. Total 847 patients were participated in the study. Patients below 20 years of age were excluded from this study. Written informed consent was taken from the patients and the participants were interviewed using semi-structured questionnaire as well as their medical records were collected. Data was compiled and analysed in MS Excel, using chi-square test and proportions.

RESULTS

A study was conducted to find out occurrence of hypertension among patients admitted in medicine department of tertiary care hospital and to evaluate occurrence of coronary heart disease, cerebrovascular disease and renal failure among hypertensive and non-hypertensive patients.

Out of total 847 patients 172 (20.3%) had Hypertension . Among hypertensive patients 98 (11.57%) were males and 74 (08.73%) were females, while among non- hypertensive patients 431 (50.88%) were males and 244 (28.80%) were females.

Highest number (37) of hypertensive patients were found among age group of 51 to 60 years. There was found increasing number of hypertensive patients with increasing age from 21 years to 60 years and was decline in number of hypertensive patients from age 61 years to 100 years (table 1).

Occupation profile of study population has shown that 34.3% were unemployed, 23.52% were businessmen, 18.33% were housewife, 12.79% were laborers, 6.39% were employees, 3.48% were transport workers and 1.16% were students. As per occupation profile occurrence of hypertension was higher among people with sedentary life-style(table 2).

Table 1: Age wise distribution of Hypertensive patients (n=172)

Age group in years	Frequency (%)
21 – 30	20 (11.6)
31 – 40	25 (14.5)
41 – 50	28 (16.3)
51 – 60	37 (21.5)
61 – 70	32 (18.6)
>70	30 (17.4)

Table 2: Occupational profile of study population

Variable	Hypertensive (n=172) (%)	Non-Hypertensive (n=675) (%)
Unemployed	59 (34.3)	91 (13.5)
Businessman	40 (23.5)	108 (16.0)
Housewife	31 (18.3)	183 (27.1)
Labourer	22 (12.8)	155 (23.0)
Employee	11 (6.4)	59 (8.7)
Transport Worker	6 (3.5)	38 (5.6)
Student	2 (1.1)	42 (6.2)

Table 3: Distribution of study subjects according complications

Variable	Hypertensive (n=172) (%)	Non-Hypertensive (n=675) (%)	Odds ratio (C.I.)	p-Value
Coronary Heart Disease	48 (27.9)	54 (8.0)	4.45 (2.88-6.87)	<0.001
Cerebrovascular accident	41 (23.8)	36 (5.3)	5.55 (3.42-9.02)	<0.001
Renal failure	3 (1.7)	7 (1.0)	1.69(0.43-6.62)	0.228

Occurrence of coronary heart disease was higher among hypertensive patients (27.9%) as compared to non hypertensive patients (8.0%) and this difference was statistically significant. Similarly Occurrence of cerebrovascular accidents was higher

among hypertensive patients (23.8%) as compared to non hypertensive patients (5.3%) and this difference was statistically significant. While there was no any significant difference found in occurrence

of renal failure among hypertensive and non hypertensive patients. (table 3)

DISCUSSION

This study was carried out to find out occurrence of coronary heart disease, cerebrovascular disease and renal failure among hypertensive and non-hypertensive patients. The prevalence of hypertension ranged from 5-15% between 1960-1990⁸. It had increased to 20-36% in the past decade⁹. The factors which were attributable to this rising trend were the rapid urbanization, lifestyle changes, dietary changes and the increased life expectancy. As per this study occurrence of hypertension was 20.3% which is consistent with increasing trend as per the previous study⁹. While that finding was not compatible with prevalence of hypertension was reported (46%) in a study which was conducted among the outdoor patients of an urban health centre of Kolkata¹⁰. Hypertension is a major risk factor for avoidable cardio-vascular diseases, cerebrovascular diseases and kidney diseases. It was considered directly responsible for 7.5 million deaths in 2004, about 12.8 percent of the total of all global deaths¹¹. Age is non-modifiable risk factor for development of hypertension. In previous study conducted by Syed Esam Mahmood et al, found out that there was inclining trend in occurrence of hypertension with increasing age up to 60 years of age and after 60 years of age trend was decline with increasing age¹². Similar results were found in present study. Hypertension is a lifestyle disorder and is associated with sedentary lifestyle. Present study has shown higher occurrence of hypertension among unemployed (34.3%), businessmen (23.5%) and housewife (18.3%). In previous study conducted by Pethuru Devadason et al, occurrence of coronary heart disease was 66.6% in hypertensives and 33.4% in non Hypertensives¹³. In present study findings, occurrence of coronary heart disease was 27.9% in Hypertensives and 8.0% in non Hypertensives which was consistent with previous study. There was significantly higher occurrence of coronary heart disease among hypertensives as compared to non Hypertensives in present study. In present study occurrence of cerebrovascular accidents was 23.8% in hypertensives and 5.3% in non Hypertensives, which is consistent with previous study done by Pethuru Devadason et al. There was significantly higher occurrence of cerebrovascular accidents among hypertensives as compared to non Hypertensives in present study. While there was no any significant difference found in occurrence of renal failure

in hypertensives (1.7%) as compared to non Hypertensives(1.0%).

CONCLUSION

The occurrence of coronary heart disease and cerebrovascular accident was significantly higher in hypertensive patients than non- hypertensive patients among study population. While no higher proportion of renal failure was found in hypertensive patients as compared to non-hypertensive patients. Thus hypertension plays very potential role in causation of coronary heart disease and cerebrovascular accident as per the present study.

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