

Association of Hypertension with Risk factors and its Complications in tertiary care hospitals in South India

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Abstract: Hypertension is the major public health problems and it is prevalent all over the world. Aim of the present study was to identify the risk factors for hypertension among cases admitted in the department of general medicine, GGH, Guntur, AP, India. Present study was conducted in the Department of General Medicine, Government General Hospital/Guntur Medical College, Guntur, AP, India. It is a prospective observational study, over a period of six months from January to July 2015. A clinical examination was done. Pretested questionnaire was applied to obtain data from hypertensive cases. Co-morbidities were studied in 150 hypertensive cases from the history and medical records. Analysis shows as follows: cases with stroke 21 (14%), cardiac problems 58 (38.66%), renal problems 18 (12%), no co-morbidity were 30 (20%), and others were 23 (15.33%) respectively. Out of 150 cases 61 (40.66%) cases were alcoholics and 89 (59.33%) cases were non-alcoholics. Out of 150 cases 59 (39.33%) cases were smokers and 91 (60.66%) cases were non-smokers. Most of the study participants were illiterates (no=123, 82%), and daily wagers (no=97, 64.66%). Health education is to be given for the cases with hypertension regarding risk factors and its prevention. Control of hypertension should be imparted to avoid complications.

Key Words: Hypertension, Risk factors, Complications, Government General Hospital, Guntur.

I. Introduction:

Hypertension is the major public health problems and it is prevalent all over the world. It is a 'silent killer' as it is asymptomatic until its effects like Myocardial Infarction, Stroke, Renal dysfunction or visual problems were observed (1). So, the assessment on the co-morbidity's, which contribute to development of hypertension and the efforts to control at an early stage, will prevent the health hazards of Hypertension. High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia (2010) (2). Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India (3,4). HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease (CHD) deaths in India (5). The WHO rates HTN as one of the most important causes of premature death worldwide (6). Aim of the present study was to identify the risk factors for hypertension among cases admitted in the department of general medicine, GGH, Guntur, AP, India.

II. Methodology:

This study was conducted in the Department of General Medicine, Government General Hospital/Guntur Medical College, Guntur, AP, India. It is a prospective observational study, over a period of six months from January to July 2015. A clinical examination was done. Pretested questionnaire was applied to obtain data from hypertensive cases. Clinical data obtained from cases and they were analyzed based on the age, sex distribution, past history, provisional diagnosis on clinical examination, treatment basis. Statistical Analysis: Results are presented as Number with Percentage.

III. Results:

Table 1 shows the general information of the cases with hypertension. In the present study out of 150 cases 87 (58%) were cases of male and 63 (42%) were cases of females. In our study male cases were more compared to female cases. Most of the cases were between in the age group of 41-60 (No=87, 58%) years of age. The mean age of study participants with hypertension was found to be 57.93±12.5. out of 50 cases, 38 (25.33%) were having family history, and 112 (74.66%) cases were not having family history of hypertension. Out of 150 cases 61 (40.66%) cases were alcoholics and 89 (59.33%) cases were non-alcoholics. Out of 150 cases 59 (39.33%) cases were smokers and 91 (60.66%) cases were non-smokers. Most of the study participants were illiterates (no=123, 82%), and daily wagers (no=97, 64.66%).

Tab.1. Risk factor assessment of Cases with Hypertension (Total Number- 150)		
Variables		Number with Percentage
Gender	Male	87 (58)
	Female	63 (42)
Age Group	0- 20	0
	21-40	23 (15.33)
	41-60	87 (58)
	61 and above	40 (26.66)
Family History	Yes	38 (25.33)
	No	112 (74.66)
Alcoholism	Yes	61 (40.66)
	No	89 (59.33)
Smoking	Yes	59 (39.33)
	No	91 (60.66)
Educational Status	Illitretes	123 (82)
	Primary education	25 (16.66)
	Sec.education	2 (1.33)
	Graduates	0
Ocupational status	Daily wagers	97 (64.66)
	Self employed	132 (21.33)
	Employee	6 (4)
	House wifes	15 (10)

Table 2 shows the mean value of blood pressure (Systolic & Diastolic) at baseline before treatment and after treatment.

Table 2. Comparison of mean Blood Pressure values of baseline and follow-up		
Blood Pressure (mmHg)	Base line (no=150)	End of the Study (no= 135)
Mean Systolic	145.6 mmHg	139.5 mmHg
Mean Diastolic	93.4 mmHg	85.7 mmHg

Table 3 shows the distribution of study cases based on co-morbidities. All the study subjects were as follows: cases with stroke 21 (14%), cardiac problems 58 (38.66%), renal problems 18 (12%), no co-morbidity were 30 (20%), and others were 23 (15.33%) respectively.

Tab.3. Distribution of study cases (no=150) based on complications associated with hypertension (No. With Percentage)	
Stroke	21 (14)
Cardiac Problems	58 (38.66)
Renal Problems	18 (12)
No comorbidity	30 (20)
Others	23 (15.33)

Table 4 shows the categorization of treatment. Treatment is given as follows: 48 (32%) cases were treated with calcium channel blockers, 12 (8%) cases were treated with diuretics, 29 (19.33%) cases were treated with ACE inhibitors, 13 (8.66%) cases were treated with ARB's, and 30 (20%) cases were treated with β blockers.

Tab.4. Distribution of study cases (no=150) based on treatment for Hypertension (No. With Percentage):	
Calcium Channel blockers	48 (32)
Diuretics	12 (8)
ACE inhibitors	29 (19.33)
ARB's	13 (8.66)
β blockers	30 (20)

IV. Discussion:

In the present study hypertensive determinant like alcoholism (49.5%), smoking (39.33%) in both male and female cases, illiteracy (82%) and daily wagers (64.66%) among the tertiary care hospital in south India. The lifestyle risk factors like diet, dietary salt, fibre, saturated fat, trans-fat, physical activity or stress among the cases were not estimated, it is of preliminary nature with limitations. It is well known that dietary salt consumption can influence the BP independent of other risk factors (8). Though the usage of tobacco and alcohol was high among the cases of male.

It is increasingly been recognized that the low socio-economic group, marginalized, and tribal communities were facing the burden of non-communicable diseases in general and hypertension particularly in India (9-13).

Present study shown that before treatment majority of the cases were unaware about the disease management, complications, signs and symptoms. Merely controlling the numbers of systolic and diastolic blood pressure is no longer the goal. Reducing the overall risk of the individual for cardiovascular events, preventing target organ dysfunction, yet maintaining quality of life & minimizing medication is aimed at (7). Hypertension is one of the features of metabolic syndrome.

There are different types of anti-hypertensive drugs are available for the treatment of hypertension. ACE inhibitors become the drug of choice. In the present study 19.33% of the cases were treated with ACE inhibitors, 8.66% of the cases were treated with ARB's and 20% of the cases were treated with beta-blockers. Calcium channel blockers drugs are used to control hypertension. They work by slowing the movement of calcium into the cells of the heart and blood vessel walls, which makes it easier for the heart to pump and widens blood vessels. As a result, the heart doesn't have to work as hard, and blood pressure lowers. In our study 32% of the cases were treated with calcium channel blockers. Diuretics play major role in blood pressure control. In our study only 8% of the cases were treated with diuretics. It has been said that combinations of the thiazide-type and potassium-sparing subclasses may be highly effective, providing nearly optimal therapy for some, and might be considered more often in the treatment of hypertension (14).

V. Conclusion:

Health education is to be given to the patients on the risk factors for hypertension and its prevention. Life style changes (Quality of life), Regular medication, frequent health check ups, early detection of cardiovascular symptoms to prevent further complications are very important points for cases with hypertension.

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