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ORIGINAL ARTICLE

Evaluation Of Risk Factors Amongst Young Population for Hypertension- A Hospital Based Survey

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ABSTRACT:

Background: Hypertension is defined as blood pressure of more than 140/90 mmHg. Prehypertensives are defined as persons with blood pressure above optimal levels i.e. systolic blood pressure of 120-139 mm Hg or diastolic blood pressure of 80-89 mm Hg. The aim of the present study was to establish the risk factors present in the community for hypertension. **Materials and methods:** The present cross sectional study was conducted by the Department, college, Institute, state during a period of 1 year. All the subjects were made to fill a predesigned proforma that was tested using a pilot study. The proforma had questions regarding the age, gender, socioeconomic group, family history of hypertension, alcohol and tobacco consumption etc. Various clinical measurements were obtained after collecting the demographic details. Data was arranged in a tabulated form and SPSS software was used for analysis. Chi square test was applied as a test of significance. Probability value of less than 0.05 was considered significant. **Results**: There were a total of 285 subjects who were enrolled in the study. Out of these 160 subjects had hypertension and 125 belonged to pre hypertensive stage. Majority of subjects in the study were females in both the groups.On applying chi square test, it was observed that age, gender, HDL, Cholesterol levels have no significant relationship with hypertension. Alcohol intake and BMI acts as a significant risk factor. **Conclusion:** Patients need to be educated about the risk of hypertension. Increasing awareness about this disease can help prevent this condition and also the dreadful complications associated with the disease. In the present study, BMI and alcohol intake act as significant risk factor for hypertension.

Key words: Blood Pressure, Cholesterol, Independent, Risk factor.

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INTRODUCTION

A well known disease amongst common persona and a disease every 3rd person is affected with is hypertension. The definition of hypertension according to Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure is blood pressure of more than 140/90 mmHg. Prehypertensives are defined as persons with blood pressure above optimal levels i.e. systolic blood pressure of 120-139 mm Hg or diastolic blood pressure of 80-89 mm Hg.[1] Hyertension is associated with risk of cardiovascular, nephritic disease therefore it is one of the chief health concerns worldwide. [2,3] But this statement is very contra indicatory as certain studies have shown that even people with lower than normal blood pressure are associated with increased risk of cardiovascular and kidney disorders. [6] It has been estimated that hypertension alone is responsible for 7 million premature deaths worldwide.[7] Hypertension acts as an important and independent risk factor for cardiovascular and cerebrovascular diseases ultimately leading to deaths.[8,9]There has been an sudden epidemic of hypertension in India, as predicted by various meta analytical studies. More than 500 million people are thought to be affected by hypertension by 2025.[10] Hypertension is responsible for contributing to 10% of global health burden hence posing a significant financial threat.[11] Various lifestyle modifications can help prevent this disease reaching a dreadful level such that conditions like these can be prevented. These changes act as an asset to both person and the healthcare facilities. Various national programmes have been launched by the Indian government to control and decrease the incidence of cancer, diabetes ,cardiovascular disease and stroke.[12] For these programmes an individual needs to have basic information regarding the prevalence of the disease and the knowledge and attitude of people towards the condition, this acts as a basic step for developing the health policies. The aim of the present study was to establish the risk factors present in the community for hypertension.

MATERIALS AND METHODS

The present cross sectional study was conducted by the Department of Medicine of MIMS during a period of 1 year. The study was conducted between August, 2015-September, 2016. The sample size of the study was selected on the basis of prevalence of hypertension in the area as depicted by previous studies.[13]A total of 285 subjects were enrolled in this study and divided into two groups-group I (Hypertensive) and Group II (Prehypertensive). The study was approved by the

Institute's ethical board and all the subjects were informed about the study and a written consent was obtained from all in their vernacular language. All the subjects were made to fill a predesigned proforma that was tested using a pilot study. The proforma had questions regarding the age, gender, socioeconomic group, family history of hypertension, alcohol and tobacco consumption etc. Various clinical measurements were obtained after collecting the demographic details. Clinical measurements included level of cholesterol and high density lipoprotein. Family History of hypertension and diabetes was also recorded. Blood pressure was using mercury type syphygnomanometer in of all the subjects' at least three times in right arm at sitting position. The average of three readings was noted for the purpose of analysis.

BMI of all the patients were obtained using the standard formula weight (kgs)/height (m^2). Overweight were considered if the BMI was ≥ 23–24.9 kg/m^2 and obese if it was more than 25 kg/m2.[14] Data was arranged in a tabulated form and SPSS software was used for analysis. Chi square test was applied as a test of significance. Probability value of less than 0.05 was considered significant.

RESULTS

Table 1 shows the compiled data of the study. There were a total of 285 subjects who were enrolled in the study. Out of these 160 subjects had hypertension and 125 belonged to pre hypertensive stage. Majority of subjects in the study were females in both the groups. There were 43.75% males (n=70) who had hypertension and 70% males (n=48) who were pre hypertensive. There were 56.25% females who were hypertensive and 52% females who were pre-hypertensive. There was no significant difference of gender on hypertension. Majority of subjects who had hypertension were above 30 years of age. There were 33.13% (n=53) subjects who were less than 30 years of age and had hypertension. There were 44.8% (n=56) prehypertensives subjects who were less than 30 years of age. There were 66.88% hypertensives above 40 years of age. There were 55.2% prehypertensive's above 30 years of age. There was no significant of age on occurrence of hypertension. There were 15.63% hypertensives and 11.2% prehypertensives who did service. Housewives constituted to 35% of hypertensive and 53.6% of prehypertensive population. There were only 21.6% prehypertensives and 21.88% hypertensives who were labourers. Business was occupation of 27.5% of hypertensives and 24.8% of prehypertensives. There was no significant difference of occupation on occurrence of hypertension. There were 40% of the hypertensives and 21.6% of prehypertensives who belonged to upper class. There were 36.9% of the hypertensives and 55% of prehypertensives who belonged to middle class. There were 23.1% of the hypertensives and 43% of prehypertensives who belonged to lower class. Socioeconomic status did not act as a significant risk factor for hypertension. Tobacco use was seen amongst 68.8% (n=110) of hypertensives and 60.8% (n=76) prehypertensives. There were 31.2% hypertensives and 39.2% of prehypertensives who never consumed tobacco.

Tobacco consumption did not act as a significant risk factor for hypertension. There were 73.8% of hypertensives and 64.8% of prehypertensives who consumed alcohol. Alcohol consumption was not seen in 26.2% of hypertensives and 35.2% of prehypertensives. Similarly total cholesterol and HDL level were not significant risk factors for hypertension. There were 33.8% of hypertenives and 39.2% of prehypertensives who were overweight.

VARIABLE	SUBGROUP	HYPERTENSIVE		PREHYPERTENSIVE		P VALUE
		N = 160	%	N=125	%	
GENDER	MALE	70	43.75	60	48	>0.05
	FEMALE	90	56.25	65	52	
AGE	Less than 30 Yrs	53	33.13	56	44.8	>0.05
	More than 30 yrs	107	66.88	69	55.2	
OCCUPATION	Service	25	15.63	14	11.2	>0.05
	Housewife	56	35	67	53.6	
	Business	44	27.5	31	24.8	
	Labour	35	21.88	13	10.4	
SOCIOECONOMIC STATUS	Upper class	64	40	27	21.6	>0.05
	Middle class	59	36.9	55	44	
	Lower class	37	23.1	43	34.4	
Tobacco use	Yes	110	68.8	76	60.8	>0.05
	No	50	31.2	49	39.2	
Alcohol use	Yes	118	73.8	81	64.8	<0.05
	No	42	26.2	44	35.2	
Total cholesterol	Normal	50	31.2	65	52	>0.05
	Raised	110	68.8	60	48	
HDL	Normal	122	76.3	48	38.4	>0.05
	Raised	38	23.7	77	61.6	
BMI	Normal	29	18.1	19	15.2	<0.05
	Overweight	54	33.8	49	39.2	
	Obese	77	48.1	57	45.6	
Family History of hypertension	Yes	104	65	80	64	>0.05
	No	56	35	45	36	

Table 1: The detail of risk factors involved in the study

There were 77 hypertensives and 57 prehypertensives that were obese. BMI did play a significant effect on occurrence of hypertension. 65% and 64% of the hypertensives and prehypertensives had a family history of hypertension. On applying chi square test, it was observed that age, gender, HDL, Cholesterol levels have no significant relationship with hypertension. Alcohol intake and BMI acts as a significant risk factor.

DISCUSSION

The present cross sectional study clearly indicates that there is a higher prevalence of hypertension amongst individuals who are more than 30 years of age. A study conducted by Islam et al[15] at Bangladesh, also showed that prevalence of hypertension was more amongst individuals who are more than 25 years of age. According to Vasan et al[16], there was significant correlation between hypertension and age. In our study though there were higher proportion of individuals who were more than 40 years of age but there was no significant relation with age. The prevalence of hypertension recently shot upto 20-33% from 2.6% -5.2% during 1960-1980.[17-20] Majority of subjects in the study were females in both the groups. There were 43.75% males (n=70) who had hypertension and 70% males (n=48) who were pre hypertensive. There were 56.25% females who were pre-hypertensive and 52% females who were hypertensive. In a study conducted by Mahajan et al[21]majority of the subjects were males. According to a study by Kusuma[22] on people residing in Delhi, there were 59% of the subjects who consumed antihypertensive drugs. As per our study there was no significant association between tobacco use and hypertension. The results of our study were in accordance with the studies by Jugal Kishore et al[23] and Mahajan et al [21]which also showed no significant association between the two. As per the study by Fujun Wang et al[24] amongst people of China and India tobacco didn't act as a significant risk factor in causing hypertension. These results were not in accordance with the study by Islam et al[15] where tobacco acts as a significant risk factor in causing hypertension. Studies conducted by Mainuddin AKM et al[15] and RJ Khan et al,[25]showed alcohol to be a significant risk factor for hypertension. This was in accordance with our study.

According to the study by Mainuddin AKM et al[15] there was a significant relationship of hypertension with BMI. Hypertension was more prevalent amongst obese and overweight subjects. In our study, there were 33.8% of hypertenives and 39.2% of prehypertensives who were overweight. There were 77 hypertensives and 57 prehypertensives that were obese. BMI did play a significant effect on occurrence of hypertension. In studies by Bhalla and Tondon[26]and Ghosh [27] hypertension had higher among professionals, executives and traders when compared people involved in low occupation such as semi-skilled and unskilled persons. In our study, there were 15.63% hypertensives and 11.2% prehypertensives who did service. Housewives constituted to 35% of hypertensive and 53.6% of prehypertensive population. There were only 21.6% prehypertensives and 21.88% hypertensives who were labourers. Business was occupation of 27.5% of hypertensives and 24.8% of prehypertensives. There was no significant difference of occupation on occurrence of hypertension. People living in rural and urban slum areas have poor knowledge and awareness about hypertension. Various health services should be encouraged including awareness about risk factors in these areas.

CONCLUSION

Patients need to be educated about the risk of hypertension. Increasing awareness about this disease can help prevent this condition and also the dreadful complications associated with the disease. In the present study, BMI and alcohol intake act as significant risk factor for hypertension.

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