

## Co-Relation of Family History of Hypertension with Hypertension in the Young Male Adults in Western Rajasthan

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### ABSTRACT:

**Background and Objectives:** Hypertension is a major contributor to the global burden of disease. Family history is an important non-modifiable risk factor for hypertension, very few studies have been done in the young male adults of our region. So, the aim of our study is to know the significance of family history and its effect on hypertension in young healthy male individuals.

**Method:** We performed a cross section study on 400 young male individuals between 18 to 30 years in western Rajasthan. The participants were then subjected to a set of questionnaire which included age, sex, past history and family history of hypertension. They were then subjected to the measurement of blood pressure.

**Results:** In our study 9.25% were hypertensive and among these family history of hypertension was present in 27.75% subjects. Mean Systolic Blood Pressure is 7.31 mmHg and mean Diastolic Blood Pressure is 5.6 mmHg higher in those having positive family history of hypertension compared to the other.

**Interpretation and Conclusion:** Statistical analysis was conducted using Student's t-test and ANOVA test. The p-value is <0.05, which is statistically significant. Family history of hypertension is a significant determinant of hypertension in the young adults & such individuals may benefit from timely targeted interventions.

**Keywords:** Isolated systolic hypertension (ISH), Isolated diastolic hypertension (IDH), Systolic diastolic hypertension (SDH), Systolic blood pressure (SBP), Diastolic blood pressure (DBP), Hypertension (HTN).

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### INTRODUCTION

Hypertension and if untreated its complications, is a global problem. Keeping the blood pressure in optimal range significantly reduces the risk of death due to heart disease and stroke, the development of other debilitating conditions and the cost associated with advanced medical care. [1]

It is also proven fact that due to present life-style Hypertension is also very common in the young individuals. According to findings presented at the American Heart Association's Scientific Sessions 2012, adults 18-24 years old with high blood pressure were 28% less likely to be diagnosed during doctor visits than those 60 and older. Hypertension is related to many factors as modifiable (smoking, dietary salt, etc.) and non-modifiable risk factors (age, family history, etc.).

Loscalzo, Joseph et al [5], also states that "Having a personal family history of hypertension increases the likelihood that an individual develops

Hypertension". In our best of knowledge, no such study has been conducted in our region. So, the aim of our study is to shed light on the effect of family history as a risk factor for hypertension in our region in young male individuals.

### MATERIAL AND METHOD

The present Study was conducted on approximately 400 male individuals of age group from 18 to 30 years from local population. The numbers of years completed on last birthday were taken as age of the subject. The subjects with known history of hypertension, or had taken any anti-hypertensive medication in past or any known history of acute or chronic respiratory diseases, cardiopulmonary diseases, neuromuscular disease, malignancy or any history of major chest surgery were excluded from the study. Family history include parents and siblings. For parents, HTN was defined as [1] systolic >140mm of Hg and or diastolic >90 mm [2] or they were on antihypertensive medication. Data was collected using pre-tested questionnaire completed by parents.

The auscultatory method of BP measurement with a properly calibrated and validated sphygmomanometer has been used. Subjects were made to sit comfortably in a chair for at least 5 minutes with arm supported at heart level. The appropriate size cuff (bladder length 80% and width

at least 40% of arm circumference) used to ensure accuracy. The Systolic BP was defined as appearance of the first sound (korotkoff phase 1) and Diastolic BP was defined as disappearance of the sound (korotkoff phase 5). Three blood pressure readings of each subject were recorded at an interval of 5 minutes

each. The mean of these three readings was considered for the present study.

**Statistical analysis** was conducted using the Student's t test and ANOVA test for independent groups (two tailed), with the help of Microsoft EXCEL 2010 and the MSOffice 2010. The level of significance was taken as p-value <0.05.

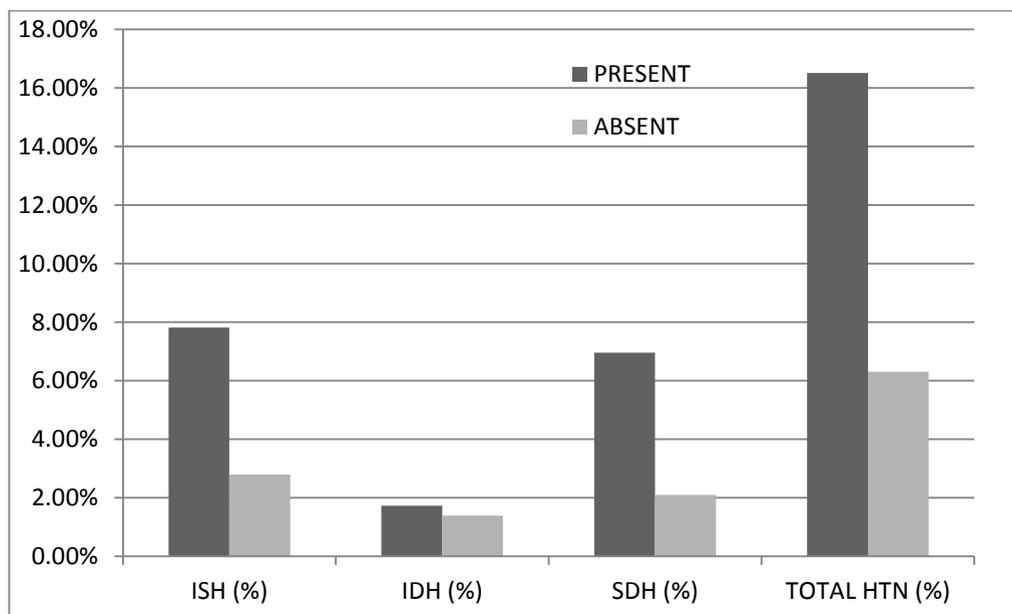
**Criteria of Hypertension**

Categories	SBP	DBP
Normal	<140 mmHg	<90 mmHg
ISH	≥ 140 mmHg	≤90 mmHg
IDH	≤140 mmHg	≥90 mmHg
SDH	≥ 140 mmHg	≥90 mmHg

**Table**

Categories	No. of Subjects	ISH (%)	IDH (%)	SDH (%)	Total HTN (%)	Mean-SBP	Mean DBP
<b>PRESENT</b>	115	9 (7.82%)	2 (1.73%)	8 (6.96%)	19 (16.52%)	123.84 ±12.44	81.12 ± 9.26
<b>ABSENT</b>	285	8 (2.8%)	4 (1.4%)	6 (2.1%)	18 (6.31%)	116.53 ±8.89	75.52 ± 7.68
<b>Total</b>	400	17 (4.25%)	6 (1.5%)	14 (3.5%)	37 (9.25%)	118.63 ±10.57	77.12 ± 8.54

*The p-value is <0.05 and is statistically significant*



The graph showing comparison of prevalence of ISH, IDH, SDH & Total HTN in the individuals with family history of hypertension present and absent.

## DISCUSSION

In our study we have taken 400 male individuals randomly between the age group 18-30 years, out of these 400 individuals, total 37 (9.25%) are hypertensive (systolic, diastolic or both systolic and diastolic). In our study, the mean age of subjects

is  $23.86 \pm 3.9$  and the mean systolic blood pressure is  $118.63 \pm 10.57$ .

We know that the Family history of hypertension is a primary predictor of high blood pressure. In our study of family h/o hypertension present in 27.75% subjects and these subjects are strongly associated with ISH, IDH, SDH and Total

HTN. Mean SBP of those with positive family history of hypertension is  $123.84 \pm 12.44$  and those with no family history of hypertension is  $116.53 \pm 8.89$  and mean SBP is 7.31 mmHg higher in those having positive family history of hypertension compared to the other. Mean DBP of those with positive family history of hypertension is  $81.12 \pm 9.26$  and those with no family history of hypertension is  $75.52 \pm 7.68$  and mean DBP is 5.6 mmHg higher in those having positive family history of hypertension compared to the other

This is in accordance with Lin Zhou et al [6], Based on family history information about parents and grandparents, they formed three groups: subjects with at least one hypertensive parent (group A), subjects with only hypertensive grandparents (group B), and subjects with normotensive parents and grandparents (group C). Men in group A had higher SBP, DBP and heart rate than men in group B and C.

This is also in accordance with Narkiewicz Ket al [7], concluded that mild hypertensives with a positive family history of hypertension are characterised by higher ambulatory BP than the patients without parental hypertension and similar supine BP.

Goldstein IB et al [8], also concluded that subject with two hypertensive parents, have more SBP than the one hypertensive parent or normotensive parents.

## CONCLUSION

On the basis of observations of this study we have concluded that: Family h/o hypertension in males is strongly associated with ISH, IDH, SDH and Total HTN. Mean SBP and Mean DBP is also considerably high in these subjects. The findings of our study are in accordance with many other studies which were carried out by different workers.

Hypertension in the young is a challenging problem in our region because many of them are not aware. If in a family one family member is hypertensive there should be screening of all family member whatever the age. One should get his blood pressure checked at least once a year to make sure it is within normal levels. Reduce other risks for high blood pressure by eating healthy foods, using less salt, exercising, losing weight if needed and stopping smoking. If already being treated for high blood pressure, it is important to take the medications regularly that have been prescribed and have scheduled appointments with the health care provider.[9]

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**Conflict of Interest:** None

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