Discussion
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A total number of 65 hypertensive individuals were included in the present study, who were attending either hypertension clinic or were admitted in the hospital M.L.B. Medical College, Jhansi. A similar number of normotensive individuals of the same sex and age were considered as controls.

In the present study incidence of hypertension was more in males (65%), as compared to females (35%) in the age group 30 to 50 years, in the present study male : female ratio was 13 : 7. Similar results were reported by Cornoni – Huntley J et al (1989) in The National Health and Nutrition Examination Survey I Epidemiologic follow up study.

In this study of the total of 65 hypertensive individuals 39 patients (60%) were stage I hypertensives having systolic blood pressure ≥ 140 – 159 mm Hg, or diastolic blood pressure ≥ 90 – 99 mm Hg.

26 patients (40%), were stage II hypertensives having systolic blood pressure ≥ 160 mm Hg and diastolic blood pressure ≥ 100 mm Hg.

As the stage of hypertension increase the percentage of population in that particular group decreases. This was shown in the study conducted in 1993 by National High Blood Pressure Education Program Working group.

There were 24 (36.95%) patients in the age group 40 – 50 years, 17 patients (26.15%) in age group 36 – 40 years, 14 (21.54%) patients in age group 41 – 45 years and 10 (15.38%) were in 30 – 35 years age group. Similar were the number of individuals of different age groups in the control group.
Incidence of hypertension rises with age as was shown by Cornoni-Huntley J et al (1989).

In our study the percentage of individuals in the age group 36 – 40 years were more than those in age group 41 – 45 years, this was probably because we have classified the groups with a small class interval leading to overlapping of the groups.

In the study group there was a mean rise of 2.2 mm Hg in the subjects (t value 7.13; p value < 0.05) and a rise of 2.89 mm Hg (t value 8.58; p value < 0.05) of systolic pressure after 30 and 60 minutes of caffeine ingestion respectively.

On comparing the rise in systolic blood pressure in subjects with those in the controls after 30 minutes (z value 2.4; p value < 0.05) of caffeine ingestion, it was found that the rise in the case group was significant (p value < 0.05).

Hartley TR, Sung BH et al while studying the hypertension risk status and effect of caffeine on blood pressure concluded that the strongest response to caffeine was observed among diagnosed men; followed by the stage I and high normal groups and then by the normal and optimal groups.

Effect of caffeine in this study revealed that there was a significant rise (t value=8.54; p value <0.05) of 2.06 mg in diastolic BP after 60 minutes of coffee ingestion in the study group.

Also after 30 minutes of caffeine ingestion there was a fall of 0.12 mg which was statistically not significant (p>0.05).

Mazurek W, Negrusz-Kawecka M while studying the effect of coffee on blood pressure revealed that drinking one cup of coffee caused after 60 minutes, to 2 hours elevated systolic and after 60 minutes diastolic pressure only in hypertensive patients. Thus the insignificant fall in the subjects after 30 minutes in this study could be
because either the readings were taken too early i.e., 30 minutes or because in the above study ambulatory blood pressure monitors were used while in this study we used a manual BP instrument.

On studying the effect of mental stress on BP by mental arithmetic test and stroop card test it was seen that there was a rise of 5.69 mm Hg and 4.49 mm Hg of systolic blood pressure in subjects and controls respectively, (Z value=3.44; p value <0.05).

Similarly there was a rise of 2.03 mng and 1.63 mng of diastolic pressure in subjects and controls respectively, after mental arithmetic test (Z value=1.35; p value <0.05).

Sympathetic nervous system overactivity could lead to hypertension, and stress is an obvious stimulant of the sympathetic nervous system.

According to Markovitz et al (1998); Saab et al (2001); Steptoe and Cropley (2000) greater cardiovascular and sympathetic nervous system reactivities to various laboratory stress have been documented in hypertensives and in normotensives at higher risk for developing hypertension.

Light et al (1999) found highest rises in BP over time among those who responded most to laboratory stresses and who had a positive family history of hypertension and were exposed to higher levels of daily stress.

The effect of cold pressor test in hypertensive individuals and normotensive individuals were similar i.e. the rise in hypertensive individuals was insignificant (Z value=0.927; p value >0.05).

This may be explained as cold pressor test is a test to determine autonomic dysfunction; it has nothing to do with previous absolute blood pressure status.
According to Wilmhurst et al, 1989 significant hypertension has been observed in individuals after exposure to cold. But when this rise in blood pressure was compared in both normotensives and hypertensive individuals; the rise in systolic BP hypertensives came out to be insignificant.

In the present study there was a significant rise ($p<0.05$) of 39.07 mm Hg in subjects as compared to a rise of 23.84 mmHg in controls in systolic BP ($Z$ value=11.27; $p$ value <0.05).

There was a rise of 3.50 mm Hg and 0.36 mm Hg of diastolic blood pressure in subjects and controls respectively, after they underwent physical stress test ($Z$ value=3.95; $p$ value <0.05).

According to Mattheues et al (1998); Miyai et al (2000), Singh et al (1999) the response of blood pressure during graded exercise has been found to predict the development of hypertension in normotensives. An exaggerated response increases the likelihood of the onset of hypertension from two to fourfold over subsequent 5 to 10 years as compared with that seen with non exaggerated response.