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Overall and Abdominal Adiposity on Blood Pressure: Consistency and Evaluation of their Association in an Adult Indian Population

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KEYWORDS Body Mass Index. Waist Hip Ratio. Abdominal Adiposity. Blood Pressure

ABSTRACT To assess the relationship and consistency of overall and abdominal obesity on blood pressure in adult Indian population using cross-sectional descriptive design collected height, weight, circumferences of waist and hip, systolic blood pressure (BP) and diastolic BP besides the information on demographic variables from 303 males + 357 females (untreated for hypertension) between 21-60 years. Men were found to have higher abdominal obesity (0.90±0.07) than women (0.84±0.08) ($p<0.05$) while there was no difference in body mass index (BMI). Average systolic blood pressure (SBP) and diastolic blood pressure (DBP) found to increase linearly over the whole variation range of BMI, waist hip ratio (WHR) and age groups. The correlation coefficients of SBP and DBP for age, varied from 0.153-0.275 ($p<0.05$) in men, 0.219-0.171 in women. In males, adiposity indicators (BMI, WHR) were positively associated with blood pressure, while in females, only BMI shown positive association. The prevalence of hypertension increased with age and BMI quartiles. Men with higher WHR are 2.988 times, and women with higher WHR are 1.177 times at risk to develop hypertension. The odds of hypertension were more than six-fold among the elderly in male sex (OR=6.213:95%CI;1.815,21.273), but in females it is only two-fold (OR= 2.423: 95%CI;0.801,7.334). The odds of hypertension rose steadily with increase in BMI reaching 7.579 (95CI;1.510,38.046) in males and 15.56 (95%CI;1.883,128.526) in females with BMI >25 kgm^{-2}. Adjustment for age, decreased the odds of hypertension in males and increased in females in the BMI category of >25 kgm^{-2}, while no change in the remaining quartiles. These findings suggest consistent linear relation of adiposity with BP, independent of age.