

Abstract

Cardiovascular disease (CVD) attributed by the hypertension emerged as an epidemic during last few decades in the population of developing world, where the impaired growth and development in utero seem to be widespread. Prenatal as well as postnatal factors contribute to the development of CVD, hypertension and other chronic diseases. Short stature is a marker of early growth retardation. However, the association between stature and blood pressure of adults is inconclusive. The present was carried out to examine the association of stature and blood pressure among adult males. A household survey was carried out in a selected cohort of Kurunagala district in 2003. Two hundred males aged 19-62 y were selected from 2 Grama Seva divisions using two-stage sampling method. Resting blood pressure, stature, weight, waist and hip circumference were measured. BMI was used to assess over nutrition and obesity. Waist circumference, waist to hip ratio (W:H) and waist to height ratio (WHtR) were used to determine the central obesity. Stature was weakly and inversely associated with SBP ($r = -0.076$, $P = 0.315$) and DBP ($r = -0.151$, $P = 0.044$). This association of DBP was not significant when adjusted for age. There was a cohort effect of age on stature, with older individuals having short stature. According to stepwise multiple regression model age, WHtR and alcohol intakes are independent variables for SBP and DBP (This WHtR is an indicator of adiposity, which partially depends on stature). Prevalence of hypertension (≥ 140 mmHg and/or ≥ 90 mmHg and antihypertensive drug users) in the cohort was 20.5%. The odds ratio (OR) of blood pressure greater than normal (> 120 mmHg and/or > 84 mmHg) in quartile of stature compared with the tallest quartile was 1.32(95%CI 0.52-3.32) when adjusted for age and W:H. There was an increasing trend of blood pressure across the stature quartiles from tallest to shortest, though not significant. In conclusion, present study did not show a direct relationship between stature and blood pressure. However, the inverse association obtained between stature and blood pressure or hypertension is attributed to high central adiposity, which is reflected by the inclusion of WHtR in the multiple regression model for SBP and DBP. Present was indirectly supported to the barker's hypothesis.

Key words: Low birth-weight, stature, developing world, fetal origin hypothesis, CVD, hypertension, blood pressure, adiposity.