

Association of Neck Circumference as an Indicator of Upper Body Obesity with Cardio-Metabolic Risk Factors among First Degree Relatives of Diabetes Patients

Authors : Hadi Abdollahi, Bijan Iraj, Maryam Mirpourian, Behzad Shariatifar

Abstract : Background: The aim of the present study was to determine the relationship between neck circumferences (NC), as an indicator of upper body obesity, with anthropometric and cardio-metabolic factors among the first degree relatives of diabetes patients. Materials and Methods: This cross-sectional study was performed on first degree relatives of diabetes patients (n = 213). Weight, height, waist circumference (WC), hip circumference (HC), systolic blood pressure (SBP), diastolic blood pressure (DBP) and NC were measured. Laboratory data included oral glucose tolerance test (OGTT) results, high density lipoprotein (HDL), low density lipoprotein, triglyceride (TG) and total cholesterol. Results: There was no difference in NC among different results of OGTT in men or women. Factors including weight, body mass index (BMI), WC and HC were strongly associated with NC in both genders ($r = 0.420-0.711$). NC was weakly associated with SBP in women ($r = 0.195$) and moderately with DBP in men ($r = 0.314$). Regarding lipid profile, HDL and TG were associated with NC only in women ($r = -0.268-0.325$). Conclusions: NC has a significant correlation with gender and anthropometric variables, including BMI, weight and waist and HCs in both men and women, but it does not differ significantly in patients with different status in OGTT.

Keywords : body mass index, cardiovascular, diabetes, neck circumference, obesity

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