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Waist cut-off values to predict diabetes mellitus type 2 and hypertension risk in Arab adults

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Background: Obesity is considered a major risk factor for diabetes mellitus (DM) and hypertension. Identifying people at highest risk through ethnically appropriate waist circumference (WC) cut-off points was the main target of this study.

Methods: Data were randomly collected nationwide and analyzed from a cross-sectional study of 4350 Saudi adults aged 15-64 years using a stratified, multi-stage, cluster random sampling technique. DM subjects were either known cases or subjects with fasting blood glucose ≥ 7.0 mmol/L. Hypertension was determined as having systolic blood pressure ≥ 140 mmHg. Waist circumference (WC) in cm was measured midway between the lower costal margin and iliac crest during the end-expiratory phase.

Results: Mean age for the study subjects was: 36.55 ± 12.99 years (37.5 ± 13.9 years for males; 35.6 ± 11.96 for females). The mean waist circumference for all subjects was 92.75 ± 13.65 cm (95.2 ± 14.01 cm for males versus 89.9 ± 12.6 cm for females; $p < 0.001$). The prevalence of DM was 23.8% for all subjects. The prevalence of hypertension among all subjects was 25.5%. ROC curve was done and revealed that WC cutoff points for DM risk are 97 cm and 91 cm for men and women respectively and for hypertension are 97 cm and 90 cm again for men and women respectively.

Conclusion: Findings of the present study recommend that the Arab population utilize a much lower WC in identifying patients at risk for DMT2 and hypertension. Prospective studies are needed to confirm these observations.

Biography

Naji Aljohani, MD, ABIM, FRCP, is an endocrinologist consultant and Assistant Professor at the Specialized Diabetes and Endocrine Center, Faculty of Medicine in King Fahad Medical City, King Saud bin Abdulaziz University for Health Sciences in Riyadh, Saudi Arabia. He is also a board member of the Prince Mutaib Chair for Biomarkers of Osteoporosis in King Saud University, Riyadh, Saudi Arabia, the Saudi Society of Endocrinology and Metabolism and Director of Diabetes Prevention in the Saudi Diabetes Association. He obtained his fellowship at the University of Manitoba, Winnipeg, Canada and thyroid fellowship at University of Toronto, Canada. He has authored/co-authored several peer-reviewed papers and has been an invited speaker in both national and international conferences in the fields of endocrinology, obesity and vitamin D.

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