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Anthropometric parameters of patients with type 2 diabetes and ischemic heart diseases: A preliminary study

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Anthropometric parameters that reflect the fat distribution in the body [waist circumference (WC), hip circumference (HC) and waist to hip ratio (W:H)] and body mass index (BMI) are commonly used parameters in assessing the risk of development of NCDs. It is reported that parameters of abdominal adiposity (WC, W:H) are superior to BMI in predicting NCDs as increased visceral adipose tissue is strongly associated with metabolic abnormalities (glucose intolerance, reduced insulin sensitivity and adverse lipid profiles) which lead to type 2 diabetes and CVD. The present study was aimed at observing some related anthropometric risk factors among Type 2 DM and CVD patients attending clinics at the Family Practice Center of the University and General Hospital of Sri Jayewardenepura, according to the cutoff values relevant to Sri Lanka. Patients with type 2 diabetes (n = 35) and patients awaiting CABG (n = 40) were recruited for the study. Ethical approval was obtained from the Ethics Review Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura and Sri Jayewardenepura General Hospital. Weight, height, WC and HC of each patient were measured after obtaining written consent. BMI ≥ 25 and ≥ 30 were considered as overweight (OW) and obese respectively. Over 80 cm and 90 cm of WC and a W:H ratio of ≥ 0.80 and ≥ 0.95 for females and males respectively were considered as the risk category. Significances were analyzed by Chi test using SPSS version 16. Among the diabetic patients (males = 14; females = 21) 43% of males (OW = 36%; obese = 7%) and 71% of the females (OW = 52%; obese = 19%) had a BMI above normal. When considering the WC, 64% of the males and 100% of females were in the risk group. In males and females 64% and 100% respectively had a W:H ratio above the risk level. From the 40 patients (26 = male; 14 = female) awaiting Coronary Artery Bypass Graft (CABG), 19% of males were overweight, 3.8% were obese and in the female group 36% were overweight and 14% were obese. When considering their WC, 61% of males and 100% of females were in the risk group and according to the W/H ratio 92% of males and 100% of females were in the risk group. From the whole population of patients 30% of males and 63% of females were OW or obese and 63% and 97% of males and females had above normal WC. When considering the W:H ratio 82.5% of males and 100% of females had ratios above the risk level. Among the anthropometric parameters, the W:H ratio was better than WC ($p < 0.05$) and WC was better than BMI ($p < 0.05$) in identifying an individual's susceptibility for development of DM and CVD. These results agree with other studies indicating that management of parameters related to abdominal adiposity (W:H, WC) are superior to BMI when controlling DM and CVD.

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