

Anthropometric assessment of obesity in patients with type 2 diabetes in clinical practice: midpoint waist circumference vs. umbilical waist circumference

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Abstract

Obesity is an important cardiovascular risk factor for metabolic-related diseases such as type 2 diabetes. Although waist circumference (WC) is considered the best anthropometric obesity index there is currently no consensus regarding the optimal protocol for its measurement. We compared the associations between WC measured at two different sites (midpoint waist circumference [MWC] and umbilical waist circumference [UWC]) with other obesity and central obesity indicators on a cross-sectional study that involved 94 volunteers with type 2 diabetes (46 women and 48 men; 66.32 ± 6.32 years of age). Body mass, fat mass (FM) and trunk fat mass (FMtrunk) were assessed by bioelectrical impedance analysis technique (Tanita, BC-418 MA). Body height, MWC and UWC were also assessed. Pearson's correlations were used to evaluate the associations between each of the two WC measure sites (MWC and UWC) with FM, FMtrunk and body mass index (BMI). After variable analysis (MWC 97.87 ± 10.35 cm; UWC 101.23 ± 9.18 cm; FM 37.47 ± 8.19 %; FMtrunk 40.30 ± 8.00 %; BMI 30.09 ± 3.77 kg/m²), UWC showed better association than MWC with FM ($r = 0.375$, $p < 0.001$ vs. $r = 0.118$, $p = 0.256$), FMtrunk ($r = 0.482$, $p < 0.001$ vs. $r = 0.249$, $p = 0.016$), and BMI ($r = 0.848$, $p < 0.001$ vs. $r = 0.700$, $p < 0.001$). The UWC seems to be a better anthropometric measure than MWC to assess obesity and central obesity in patients with type 2 diabetes in clinical practice.

Biography

Romeu Mendes is a Medical Doctor resident in Public Health with a PhD in Sports Sciences. He is the leader of *Diabetes em Movimento*[®], a community-based exercise program for patients with type 2 diabetes, and he is the Portuguese representative of European Society of Lifestyle Medicine.