Relationship between waist circumference, visceral fat and metabolic syndrome in a Congolese community: further research is still to be undertaken

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Abstract

Introduction: The criteria of positivity of waist circumference to define the metabolic syndrome as currently recommended for the population of sub-Saharan Africa do not take into account specific ethnic or regional variation.

Methods: The predictive value of different values of waist circumference compared with visceral fat as determined by OMRON BF510 body composition in 360 indigenous patients from Bukavu city between June 1, 2010 and May 30, 2011 was studied.

Results: The prevalence was higher in women for enlarged waist circumference according to the pathological IDF or NCEP / ATP III threshold ($p < 0.0001$) contrasting with lower rates for pathological accumulation of visceral fat in men ($p = 0.0001$). The highest values for sensitivity and specificity were obtained for a threshold value of 95 cm for men (sensitivity = 72.4%, specificity = 91.1%, area under the curve (99% CI) = 0.899 (0.833 to 0.965)) and 99 cm in women (sensitivity = 75.0%, specificity = 78.3%, AUC (99% CI) = 0.844 (0.777 to 0.911)). This test also showed an independent effect on the probability of accumulation of visceral fat (Odd adjusted OR = 5.0 (99% CI: 2.1 to 11.7), $p <0.0001$) after adjustment for other confounding factors.

Conclusion: The threshold value for pathological waist circumference currently used for black African populations may overpredict abdominal fat excess in women. Further studies are needed to provide adequate cutoffs in sub-Saharan populations.