The role of different indexes of adiposity and body composition for the identification of metabolic syndrome in women with obesity.

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The aim of this study was to compare the accuracy of different indexes of adiposity and/or body composition in identifying the metabolic syndrome (MetS) in a group of 1528 Caucasian women with obesity: (age ± standard deviation (SD): 50.8 ± 14 years (range 18-83); body mass index (BMI) 43.3 ± 5.9 kg/m^2 (30.7-72.9 kg/m^2)). The following indexes were assessed in each subject: BMI, fat-free mass index (FFMI), fat mass index (FMI), tri-ponderal mass index (TMI), waist-to-height ratio (WtHR), and the body mass fat index (BMFI). Thereafter, a threshold value adjusted for age, which could identify MetS, was calculated for each index. A significant correlation was found among all indexes ($p < 0.0001$ for all). However, when the area under the curve (AUC) was compared, WtHR performed significantly better in the whole group and in the different age groups, apart from a lack of statistical difference between WtHR and BMFI in the 45-55 years age group. In conclusion, WtHR seems to be a fair index useful for identifying MetS in women with obesity. The use of thresholds appropriate for age can help further improve its accuracy, thus reinforcing the clinical evaluation for MetS screening.