Normal Weight Obesity among Female Students: BMI as a Non-Sufficient Tool for Obesity Assessment

Authors : Krzysztof Plesiewicz, Izabela Plesiewicz, Krzysztof Chiżyński, Marzenna Zielińska

Abstract : Background: Obesity is an independent risk factor for cardiovascular diseases. There are several anthropometric parameters proposed to estimate the level of obesity, but until now there is no agreement which one is the best predictor of cardiometabolic risk. Scientists defined metabolically obese normal weight, who suffer from metabolic abnormalities, the same as obese individuals, and defined this syndrome as normal weight obesity (NWO). Aim of the study: The aim of our study was to determine the occurrence of overweight and obesity in a cohort of young, adult women, using standard and complementary methods of obesity assessment and to indicate those, who are at risk of obesity. The second aim of our study was to test additional methods of obesity assessment and proof that body mass index using alone is not sufficient parameter of obesity assessment. Materials and methods: 384 young women, aged 18-32, were enrolled into the study. Standard anthropometric parameters (waist to hips ratio (WTH), waist to height ratio (WTHR)) and two other methods of body fat percentage measurement (BFPM) were used in the study: electrical bioimpendance analysis (BIA) and skinfold measurement test by digital fat body mass clipper (SFM). Results: In the study group 5% and 7% of participants had waist to hips ratio and accordingly waist to height ratio values connected with visceral obesity. According to BMI 14% participants were overweight and obese. Using additional methods of body fat assessment, there were 54% and 43% of obese for BIA and SMF method. In the group of participants with normal BMI and underweight (not overweight, n =340) there were individuals with the level of BFPM above the upper limit, for the BIA 49% (n =164) and for the SFM 36 % (n=125). Statistical analysis revealed strong correlation between BIA and SFM methods. Conclusion: BMI using alone is not a sufficient parameter of obesity assessment. High percentage of young women with normal BMI values seem to be normal weight obese.

Keywords : electrical bioimpedance, normal weight obesity, skin-fold measurement test, women
Conference Title : ICO 2016 : International Conference on Obesity
Conference Location : London, United Kingdom
Conference Dates : May 23-24, 2016