Obes Res Clin Pract. 2008 Dec;2(4):I-II. doi: 10.1016/j.orcp.2008.09.001.

Measurement of visceral fat by abdominal bioelectrical impedance analysis is beneficial in medical checkup

Kentaro Shoji [1], Kazuhisa Maeda [2], Tadashi Nakamura [1], Tohru Funahashi [1], Yuji Matsuzawa [1], Iichiro Shimomura [1]

Affiliations
PMID: 24351854 DOI: 10.1016/j.orcp.2008.09.001

Abstract

Objective: In addition to the waist circumference (WC) measurement, an accurate measurement of visceral fat is very important in terms of the pathology associated with the metabolic syndrome. The only method available for an accurate measurement of a visceral fat area (VFA) is abdominal computed tomography (CT). To overcome this limitation, we estimated VFA using abdominal bioelectrical impedance analysis (BIA) with accuracy comparable to that of abdominal CT, and investigated the relationship between VFA and risk factors of the metabolic syndrome. Because abdominal BIA detects excess visceral fat accumulation that cannot be detected by a measurement of WC, the characteristics of the subjects who were identified as having excessive visceral fat using BIA, but not WC, were examined.

Methods: Abdominal BIA was used to estimate VFA in male subjects (n = 1803) (age: 48 ± 10 years, body mass index: 23.9 ± 3.0 kg/m(2)) who provided informed consent.

Results: The prevalence of the metabolic syndrome diagnosed based on the diagnostic criteria established by the Japanese Society of Internal Medicine was 18%. Among the risk factors of the metabolic syndrome, WC was significantly correlated with triglycerides (TG), but estimated VFA was correlated with blood pressure and HDL-cholesterol (HDL-C), in addition to TG. Abdominal BIA detected excess visceral fat accumulation in 3% of subjects for whom WC had detected none. Elevated blood pressure, TG, and fasting plasma glucose and decreased HDL-C were also noted in these subjects, and the values of these risk factors were comparable to those of subjects in whom visceral fat accumulation was detected using WC.

Conclusion: Abdominal BIA is a simple and safe method that is superior to WC for the detection of excessive visceral fat accumulation. Therefore, abdominal BIA will likely be used clinically to detect excessive accumulation of visceral fat, which is an important predictor of the metabolic syndrome.

LinkOut - more resources

Full Text Sources
ClinicalKey
Elsevier Science

Miscellaneous