

Prevalence of metabolic syndrome in Qazvin Metabolic Diseases Study (QMDS), Iran: A comparative analysis of six definitions

ESMAILZADEHHA N, ZIAEE A, KAZEMIFAR AM, GHORBANI A, OVEISI S

Metabolic Diseases Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

E-mail: soveisi@razi.tums.ac.ir

Objective. The aim of the present study was to compare the prevalence of metabolic syndrome (MS) according to six definitions and evaluate the agreement between them in an urban sample in Qazvin, Iran.

Methods. In a cross sectional study, 529 men and 578 women in age of 20-78 years were attended from September 2010 to April 2011 in Qazvin, Iran. Standardized measurements were available for waist circumference, blood pressure, fasting serum high-density lipoprotein cholesterol, triglycerides, glucose, and insulin. The diagnostic criteria proposed by World Health Organization (WHO), National cholesterol education program third Adult Treatment Panel (ATPIII 2001, 2004), International Diabetes Federation (IDF), American Heart Association/National Heart, Lung and Blood Institute (AHA/NHLBI), and new Joint Interim Societies (JIS) were applied. The degree of agreement between different definitions was assessed by kappa statistic.

Results. The prevalence of MS was found to be 28% (WHO), 26.2% (ATPIII 2001), 30.6% (ATPIII 2004), 34.2% (IDF), 33% (AHA/NHLBI), and 39.3% (JIS). With regards to the gender, the prevalence of MS according to ATPIII 2001 and IDF was significantly greater in women than men. However, using other definitions, the prevalence of MS was similar in both genders. The agreement of JIS criteria with IDF and AHA/NHLBI definitions was excellent (IDF: 0.902; AHA/NHLBI: 0.862), while the agreement of IDF criteria with ATPIII 2004 and AHA/NHLBI was good (ATPIII 2004:0.719; AHA/NHLBI: 0.756).

Conclusions. Although JIS definition resulted in a higher prevalence of MS than other definitions, an excellent agreement has been seen between these criteria. Widespread acceptance of JIS definition may lead to management and therapy in a greater part of the population.

Keywords: agreement, insulin resistance, definitions, prevalence, metabolic syndrome, waist circumference

Metabolic syndrome (MS) is a cluster of metabolic disturbances associated with higher risk of developing cardiovascular disease and type 2 diabetes mellitus. It has been documented that MS has a rising trend worldwide. Therefore, it is necessary to identify people with MS (Alberti et al. 2009). Hanefeld and Leonhardt (1981) were the first who have introduced MS in 1981. Then in 1988, Reaven (1988) has discussed it in more

details. Many organizations and groups have since tried to define MS more appropriately.

The first formal definition for MS has been proposed by the WHO in 1998 (Alberti and Zimmet 1998). The European group for the study of insulin resistance (EGIR) has suggested to the WHO a slight MS definition modification to make it more accessible for both the epidemiological and clinical investigators. Omission