

Prevalence of the metabolic syndrome in the elderly population according to IDF, WHO, and NCEP definitions and associations with C-reactive protein: the KORA Survey 2000 [Letter]

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Prevalence of the Metabolic Syndrome in the Elderly Population According to IDF, WHO, and NCEP Definitions and Associations With C-Reactive Protein

The KORA Survey 2000

Recently, the International Diabetes Federation (IDF) has formulated a new worldwide definition for the metabolic syndrome (1). In contrast to the previous World Health Organization (WHO) and National Cholesterol Education Program (NCEP) criteria, abdominal obesity was considered as a prerequisite (2,3). Population-based epidemiological data on the metabolic syndrome in Europe are rare, and the prevalence in Germany is unknown. Thus, we estimated sex-specific prevalences of the metabolic syndrome according to the IDF, WHO, and NCEP definitions in the population-based KORA Survey 2000 (Augsburg, Southern Germany, 711 men and 662 women, age-group 55–74 years) (4). The study was approved by the local ethical committee, and all subjects gave written informed consent.

Among women, 24, 38, and 46% were categorized as having the metabolic syndrome based on the NCEP, WHO, and IDF criteria, respectively. Among men, the prevalence range was even wider (NCEP 28%, WHO 50%, IDF 57%). Overall, agreement between two definitions was moderate (men κ 0.41–0.45, women κ 0.44–0.55). Only 47% of men with IDF-defined metabolic syndrome were insulin resistant (homeostasis model assessment of insulin resistance [HOMA-IR] ≥ 3.6), as compared with 64 and 61% of those with NCEP- and WHO-defined metabolic syndrome. Similar results were observed in women (IDF 41%, NCEP 52%, WHO 60%).

In men, IDF-defined (odds ratio 1.5 [95% CI 1.05–2.2]), WHO-defined (1.7 [1.3–2.2]), and NCEP-defined (2.0 [1.5–2.5]) metabolic syndrome were signifi-

cantly associated with the odds of having increased C-reactive protein (≥ 3 mg/l) in logistic regression adjusting for age, smoking, alcohol intake, physical activity, and educational status. In women, the IDF-defined metabolic syndrome also showed the weakest association with elevated C-reactive protein (IDF 2.8 [2.0–4.1], WHO 3.2 [2.1–4.7], NCEP 3.4 [1.6–7.1]), which persisted when including all three metabolic syndrome criteria in one model.

The metabolic syndrome affects between one-quarter and one-half of the elderly population in Southern Germany, depending on the definition. The higher prevalence of the IDF-defined metabolic syndrome most likely reflects both the lower cutoffs for abdominal obesity and the larger importance given to this risk factor. On the other hand, less than half of those having IDF-defined metabolic syndrome showed insulin resistance according to HOMA-IR, which was lower than the prevalence among those with NCEP- and WHO-defined metabolic syndrome. In both sexes, the IDF criteria showed a weaker association with the atherosclerosis risk marker C-reactive protein than the other two definitions. Thus, the new IDF metabolic syndrome criteria may possibly lead to a larger misclassification with respect to the future risk of type 2 diabetes or cardiovascular disease in the elderly population than the previous criteria.

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