editorial

THE METABOLIC SYNDROME

M Sadeghi MD(1)

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Introduction

The metabolic syndrome - the clustering of abdominal obesity, dyslipidemia, hyperglycemia and hypertension - is a major public health challenge worldwide.[1,2] The metabolic syndrome is not benign; it is associated with a substantially elevated risk of type 2 diabetes (5-fold) and of cardiovascular disease (CVD) (2-3-fold),[1] and its increasing prevalence could possibly reverse the gains made through recent declining CVD mortality.

The metabolic syndrome is not a new condition. It was first described in the 1920s by Kylin, a Swedish physician, as the association of hypertension, hyperglycemia and gout.[3] In the 1940s, attention was drawn to upper body adiposity (android or male-type obesity) as the obesity phenotype commonly associated with type 2 diabetes and CVD.[4]

This constellation of CVD risk factors has been given a number of names, including "deadly quartet", "syndrome X", and "insulin resistance syndrome",[1] but "metabolic syndrome" is likely to hold sway for the foreseeable future.

Just as the metabolic syndrome has borne a variety of different names, numerous definitions have also surfaced. The World Health Organization definition,[5] and two others, developed by the European Group for the Study of Insulin Resistance[6] and the National Cholesterol Education Program - Third Adult Treatment Panel (ATP III),[7] have been the main ones in use. Each of these agreed on the core components of obesity, hyperglycemia, dyslipidemia and hypertension. However, the definitions differ in the cut-points used for each component, and the way in which the components are combined, leading to considerable confusion.[1] The confusion has been particularly apparent in attempts to compare the burden in different populations, where the use of different definitions has seriously hampered the ability to make comparisons between and within communities.[1,2]

The parameters for assessing obesity have been most problematic, with the current definitions failing to account for ethnic differences for cut-points in waist circumference and body mass index. It was also uncertain which of the definitions best predicted those at risk of CVD and diabetes, although from a clinical perspective, the ATP III definition was probably the most practical for alerting health care professionals to subjects at risk.[1,7]

Because of the confusion, the International Diabetes Federation (IDF) embarked on the process of developing consensus on a new global definition.[8,9]

The definition recognizes the mounting evidence that visceral adiposity is common to each of the components of the metabolic syndrome. Thus, an excessive waist circumference is now a necessary requirement for the metabolic syndrome.

Furthermore, as it is clear that the level of obesity at which the risk of other morbidities begins to rise varies between population groups,[1,10] ethnic-specific waist circumference cut-points have been incorporated into the definition, so that for South and South-East Asians, 90 cm and 80 cm are the cut-points for men and women, respectively, and the cut-points for Japanese men and women are >85 cm and >90 cm, respectively.

Much recent discussion about the metabolic syndrome has appropriately raised questions about its definition, its clinical role, and even its existence.

Ford reports that the syndrome is rarely, if ever, recorded as a diagnosis in clinical practice and this diagnosis is often missed.[12]

According to the first phase of Isfahan Healthy Heart Program (IHHP), the prevalence of the metabolic syndrome by ATP III criteria is approximately 21.9% in adults in Central Iran.[13] The high prevalence of the metabolic syndrome in Iran requires urgent attention and appropriate health strategies should be adopted accordingly. Community-based programs should place special emphasis on lifestyle modification, in a bid to control the metabolic syndrome via increasing physical activity, healthy nutrition, non-smoking, and control of mental tensions.

Such efforts will contribute to reduction of CVD prevalence and better control of diabetes and other non-communicable diseases.

(1) Masoumeh Sadeghi MD, Assistant Professor, CVD in Women Research Unit, Isfahan Cardiovascular Research Center, PO Box: 81465-1148, email: m_sadeghi@med.mui.ac.ir

Corresponding author: Masoumeh Sadeghi

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