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Clinical Features of Coronary Heart Disease in Patients with Metabolic Syndrome

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Abstract: Chronic heart failure (CHF) is a major medical and social problem. The increase in morbidity is due to both an increase in the life expectancy of the population and the influence of risk factors that contribute to the development and increase of circulatory failure. The combination of several atherogenic factors (abdominal obesity, insulin resistance, arterial hypertension, hyperglycemia, dyslipidemia), combined by the concept of "metabolic syndrome" (MS), leads to a more rapid development of heart failure. The article presents the data of several large-scale studies that were aimed at the presence of close relationships between obesity, arterial hypertension (AH), hyperlipidemia, impaired glucose tolerance and cardiovascular diseases.

Keywords: metabolic syndrome, chronic heart failure, risk factors, arterial hypertension, ischemic heart disease.

Relevance

"Metabolic syndrome" (MS) combines a group of risk factors associated with coronary heart disease (CHD) and/or diabetes. According to a number of authors, in patients with MS, the risks of major cardiovascular events (CVS) increase: stroke, acute myocardial infarction (AMI), sudden death (HM Lakkaetal., 2002; G. Mancia, M. Bombellietal., 2006; SM Rodriguez-Colon, J. Mo, Y. Duan, J. Liu, JE Caulfield, X. Jin, D. Liao, 2009). Patients with metabolic syndrome are characterized by a more massive lesion of the coronary arteries a more severe course of coronary artery disease and a decrease in the quality of life (E. Engelsson, L. Lind, 2006). Of particular note is the widespread prevalence of MS (according to some authors, more than 20% of the planet's population) (G.Mancia, M. Bombellietal., 2006; E.S. Ford, W.H. Giles, W.H. Dietz, 2002). The last decade is characterized, by a significant increase in the number of patients with metabolic syndrome (MS), which remains a global public health problem and a leading risk factor for cardiovascular (CVD) and noncommunicable diseases. MS is characterized by an increase in visceral fat mass, a decrease in the sensitivity of peripheral tissues to insulin and hyperinsulinemia, causing the development of a combined pathology of internal diseases (polypathy), disorders of carbohydrate, lipid, purine metabolism and arterial hypertension (AH) [James P.T. et al., 2004; Jorgensen M. et al, 2004].

Purpose of the study

To optimize the management of coronary heart disease based on the study of its features in patients with metabolic syndrome.

Results and discussions

Consideration of the metabolic syndrome as a problem began in 1966, when J. Camus analyzed the relationship between the development of hyperlipidemia, type II diabetes mellitus and gout. In the

late 1980s, several authors (A.R.Cristlieb, AS Krolewski, J.H.Warram, I.S.Soeldner, 1985; M. Modan, H. Halkin, S. Almog, etal., 1985; L. Landsberg, 1986) are independent of each other noted the relationship between the development in patients of arterial hypertension, hyperlipidemia, insulin resistance and obesity. In 1988, Riven coined the term "Syndrome X" which included tissue insulin resistance, hyperinsulinemia, impaired glucose tolerance, hypertriglyceridemia, and a decrease in the concentration of high density lipoproteins (HDL) and hypertension (G. M. Reaven, 1988). In 1989, N. Kaplan showed that most patients with this syndrome have central obesity, and for the detailed clinical picture of this type of metabolic disorder, they proposed the term "deadly quartet" (obesity, hypertension, diabetes mellitus, hypertriglyceridemia) (N.M.Kaplan, 1989) to identify MS in 1998, WHO recommendations were formulated. For this, patients should be diagnosed with insulin resistance (type II diabetes mellitus or fasting hyperglycemia, or impaired glucose tolerance) plus the presence of any two of the following factors: the presence of hypertension (SBP ≥140 mm Hg or DBP ≥90 mm.hg.) and/or antihypertensive therapy; plasma TG level ≥1.7 mmol / L (≥150 mg / dL) and/or HDL cholesterol <0.9 mmol / L (<35 mg/dL) in men or <1.0 mmol / L (<39 mg/dl) in women; BMI<30 kg/m 2 and / or waist / hip volume ratio> 0.9 in men and > 0.85 in women; albuminuria level ≥20 mcg/min or albumin / creatinine ratio ≥30 mg/g. According to the recommendations of the Third Expert Group Report on the Identification, Evaluation and Treatment of Adult Hypercholesterolemia within the US National Education Program (NCEP), MS should be understood as the presence of abdominal type of obesity (waist circumference: more than 102 cm for men and more than 88 cm for women); TG level ≥1.7 mmol/L (≥150 mg / dL); HDL is less than 1.03 mmol/L (<40 mg/dL) for men and less than 1.29 mmol/L (<50 mg / dL) for women and blood pressure is ≥130/≥85 mm Hg. Art. (NCEP, 2001; Efremenko Yu.R., Kontorshchikova K.N., Koroleva E.F., 2010). Metabolic syndrome criteria recommended by the International Federation for the Study of diabetes (IDF): the presence of central obesity, defined as a waist circumference ≥ 94 cm in men, ≥80 cm in women, plus the presence of any two of the four factors listed below: increased TG: ≥1.7 mmol / l (150 mg / dl), or lipid-lowering therapy; reduced HDL cholesterol: <1.03 mmol / L (40 mg / dl) in men and <1.29 mmol / L (50 mg / dl) in women, or specific treatment for dyslipidemia; AH (level of SBP≥130 mm RT. Art. Or DBP≥85 mm RT. Art.), Or antihypertensive therapy for previously diagnosed hypertension; elevated fasting plasma glucose ≥5.6 mmol / l (100 mg / dl), or previously diagnosed type II diabetes mellitus (IDFClinicalGuidelinesTaskForce, 2005; Bokarev I.N., 2013) .In 2009, the International Federation for the Study of DM reviewed MS criteria. In general, they remained the same, but the presence of central (abdominal) obesity is not a mandatory criterion for the diagnosis of MS. Now this diagnosis can be established when a combination of any 3 of 5 of the above symptoms is detected (CL Scott, 2003; BO Boehm, S. Claudi-Boehm, 2005; Zvenigorodskaya L. A., Konev. V., Efremov L. I., 2010). Coronary heart disease - a disease of the heart muscle caused by an imbalance between the coronary (coronary) blood flow and the metabolic needs of the heart muscle.

One of the first major epidemiological studies that reflect the picture of morbidity is a population-based study of the population of the city of Cheboksary to identify MS in a random sample. As a result, the main signs of the metabolic syndrome were identified in 20.6% of the population (M.Mamedov, N. Suslonova, I. Lisenkovaetal., 2007). Another study was conducted in Novosibirsk as part of the international project "Determinants of Cardiovascular Disease in Eastern Europe". In a multicenter cohort study in a sample of more than 10,000 people, the following data were obtained: 26% of residents aged 45-69 have MS, metabolic syndrome occurs in men in 18% of cases, and in women in 33% (Simonova G.I. ., 2006).

When studying the metabolic syndrome in a prospective KIHD study, it was found that the risk of developing coronary heart disease is 2.9-4.2 times higher in patients with components of MS (Ivashkin V.T., Drapkina O.M., Korneeva O.N. , 2011). Separately, the presence of a relationship between MS and the early onset of coronary heart disease is shown (A.N. Zakirova et al., 2015). Thus, in a study of 393 patients under the age of 50 and 393 of the control group, a reliable relationship was revealed between the early debut of cardiovascular disease and metabolic syndrome (Mychka V. B., Chazova I. E., 2009; L. Bokeria. et al., 2006). The various components of the

metabolic syndrome not only affect the incidence of IHD, but also increase the risk of each other (Doshchitsin V. L., Drapkina O. M., 2006; PG Kopelman, L. Albon, 1997) .

Conclusion: Women with metabolic syndrome were over 50 years old. Diabetes mellitus and obesity, as components of MS, were more common among women, while men showed a tendency to higher triglycerides and low HDL. The decompensated form of diabetes was significantly more common in men with MS. The greatest influence on the volume of coronary lesions in men and women was exerted by diabetes mellitus, as a component of the metabolic syndrome. In patients with MS, angina of exertion of 3 FC and CHF III FC was significantly more often noted. The distant prognosis was influenced by all the components of the MS, but the largest contribution was made by the MS and its individual components, such as diabetes and hypertension. The presence of concentric hypertrophy and high SYNTAX scores also significantly worsened the long-term prognosis.

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