

TESTOSTERONE AND METABOLIC SYNDROME

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Abstract

Obesity, diabetes, hypertension, dyslipidemia, components of the metabolic syndrome (MS) is more common in men with lower testosterone levels. We have studied the relationship between endogenous sex hormones and metabolic syndrome in 933 men (27-72) with suggestive symptoms of CAD (coronary artery disease) in a cross-sectional study. The patients perform diagnostic and/or PTCL angiography.

Results: In total the group received the study, the prevalence of diabetes was 17%, arterial hypertension (HBP) was 54%, the low level of HDL was in 75%, and hypertriglyceridemia was in 52% of patients. Obesity (BMI is assessed in 518 patients) was 38% of patients. The prevalence of metabolic syndrome was 11%. The prevalence of metabolic syndrome was higher in men with CAD (12.75%) compared to the control group without CAD (6.15%) $p = 0.0003$. Patients with MS have lower levels of testosterone compared to patients without MS, regardless of the presence or not of CAD $P < 0.0001$.

Conclusion: Metabolic syndrome in men is associated to lower levels of testosterone. On the other hand, the metabolic syndrome is more common in patients with CAD compared to normal. MS is positively associated to the extent of CAD.

Introduction

Cardiovascular diseases are the most common cause of morbidity and mortality in the Western world today. Metabolic syndrome is associated with increased atherosclerotic cardiovascular morbidity. On the other hand men have risk for developing SAK earlier than women, this bias occasionally attributed androgen. Metabolic syndrome was described for the first time in 1923 (Kylin a Swedish physicist) as a clinical association HTA and Gout (1). In 1988 Reaven described syndrome X as a constellation of insulin resistance, hyperglycemic, hypertension, HDLC reduction, increased triglycerides,

and VLDL increase (2). Since that time, the concept of metabolic syndrome has evolved and is considered a risk factor for CAD.

International Diabetes Federation, National Heart Lung Blood Institute (NHLBI), World Heart Federation, International Atherosclerosis Society, American Heart Association in a joint statement have defined specific criteria metabolic syndrome: (3) Patient to meet 3 of the following 5 criteria: waist circumference growth, hypertriglyceridemia, Reduction of HDLC, HTA, impaired glucose tolerance and / or diabetes, are considered to have metabolic syndrome(4).

Some of the major cardiovascular risk factors in men, as hyperinsulinemia, Hyperglycemia, hypertension, hypercholesterolemia, hypertriglyceridemia, decreased levels of HDL, smoking, and obesity, often accompany each other (5). The interplay between these factors that suggest the presence of a common underlying factor may be related to sexual hormonal modification (6).

Testosterone

It is a hormone steroid - androgens group. Testosterone mainly secreted in the testes of males and the ovaries of females. A very small amount is secreted by glands suprarenal. Testosterone is the male sex hormone and anabolic steroids. Average adult male's plasma testosterone concentration is 7-8 times higher than in women in the same age group (7).

Largest concentration of T in the blood is in the early hours of the morning, and falls during the day (8). Significant decreases T serial level recorded over the age of 50 years (9), this is called andropausa, is similar to reducing estrogen, menopause among women, but without signs and symptoms similar.

In America T levels in men below 300 ng/dl (estimated from blood samples taken in the morning) are considered low, hypo testosterone (10).

Observational studies have suggested that the fall of T with age may not be inherent with aging. Testosterone