

Postprandial Triglyceride and Testosterone in Women with Cardiovascular Diseases

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Abstract

- Background** High androgen levels may increase cardiovascular disease (CVD) risk in women through adverse effects on lipids, blood pressure, and glucose metabolism. Lipid abnormalities are often found in women with CVD.
- Objective** To study the relationship between postprandial triglycerides (TG) as a risk factor for cardiac disease and the androgenic activity in postmenopausal women with CVD.
- Methods** Postprandial lipid profile and sex hormone levels were measured in 30 patients with CVD and 25 postmenopausal women age and body mass Index (BMI) matched served as control group. Testosterone and sex hormone binding globulin (SHBG), Estradiol (E2), follicular stimulating hormone (FSH) and luteinizing hormone (LH) were estimated.
- Results** Postprandial TG, high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C) and atherogenic index (AI) were different between the two groups ($P \leq 0.001$). The SHBG and Free Androgenic Index (FAI) were significantly higher in the CVD postmenopausal women ($P \leq 0.001$) while no differences in testosterone, LH, FSH, and E2 levels noticed between CVD patients and the control group. Serum testosterone levels correlated positively with the postprandial TG and the atherogenic index, and negatively with HDL-C in the CVD patients.
- Conclusion** Elevation in androgenic activity could be a cause of higher elevation in postprandial serum TG which may increase the risk of CVD in women.
- Key Words** postmenopausal women, cardiovascular disease, postprandial lipid profile, testosterone, sex hormone binding globulin, free androgenic index

Introduction

Cardiovascular disease (CVD) is the leading cause of death in women^(1,2). Postprandial triglyceride (TG) concentrations are often elevated throughout the day, a point which makes postprandial TG concentration a better predictor of cardiovascular events than fasting triglycerides⁽³⁻⁵⁾. The adverse effect of postprandial TG is thought to be mediated by the pro-atherogenic lipolysis products of nascent triglyceride-rich lipoproteins, which may worsen vascular function⁽³⁻⁵⁾.

In subsequent analysis of a larger number of men and women, non-fasting TG was not associated with coronary death in men but showed a 5-fold risk of death from coronary heart disease in women when its concentration was 3.5 mmol/L, or more, as compared to those with a level of less than 1.5 mmol/L, even after adjustment for traditional coronary risk factors⁽⁶⁾.

The aim of the present study was to emphasize the association of postprandial rise in serum TG with changes in sex hormones in women with CVD and their role in increasing the risk of CVD.