

Previous studies showed that SHBG may mediate its positive effect on the lipid profile by regulating bioavailable androgen levels. SHBG binds testosterone with high affinity and regulating its free concentration^(15,16).

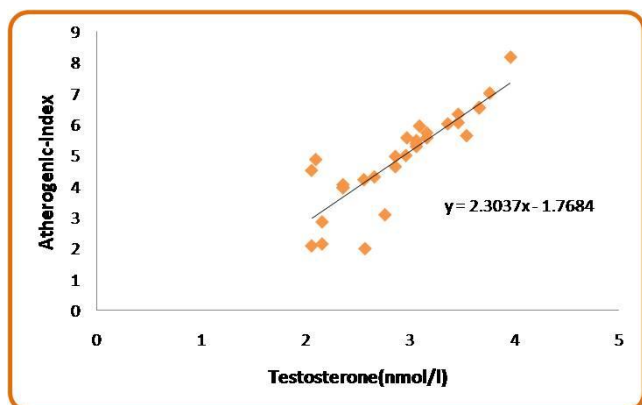


Fig. 3. The correlation between serum testosterone level and atherogenic index in the postmenopausal women with cardiovascular disease

Reports on the relationship between SHBG and CVD were controversial: Low SHBG levels, sometimes were considered androgenic marker in women, demonstrating a positive correlation between SHBG and HDL-C and a negative correlation with more atherogenic lipid profile total and LDL cholesterol⁽¹⁷⁻¹⁸⁾ while another study failed to find such an association⁽¹⁹⁾. In this study the significant correlations between testosterone and various postprandial serum lipids in the postmenopausal women with CVD (Fig.1-3) emphasize the association between the two parameters and may lead to the suggestion that the increase in androgenic activity (or free testosterone) may increase the elevation in postprandial TG which is believed to be a cause of increased risk of CVD in women^(13,14).

References

1. Ling S, Komesaroff PA, Sudhir K. Cardiovascular Physiology of Androgens and Androgen Testosterone Therapy in Postmenopausal Women. *Endocr Metab Disord Drug Targets*. 2009; 9:29-37.
2. Adashi EY. The climacteric ovary as a functional gonadotropin- driven androgen-producing gland. *Fertil Steril*. 1994; 62:20-7.
3. Langsted A, Freiberg JJ, Nordestgaard BG. Fasting and non-fasting lipid levels: influence of normal food intake on lipids, lipoproteins, apolipoproteins, and cardiovascular risk prediction. *Circulation*. 2008; 118:2047-56.
4. Mora S, Rifai N, Buring JE, et al. Fasting compared with non-fasting lipids and apolipoproteins for predicting incident cardiovascular events. *Circulation*. 2008; 118:993-1001.
5. Di AE, Sarwar N, Perry P, et al. Major lipids, apolipoproteins, and risk of vascular disease. *JAMA*. 2009; 302:1993-2000.
6. Bansal S, Buring JE, Rifai N, et al. Fasting Compared With Non-fasting Triglycerides and Risk of Cardiovascular Events in Women. *JAMA*. 2007; 298(3):309-16.
7. Rexrode KM, Lee IM, Cook NR, et al. Baseline characteristics of participants in the Women's Health Study. *J Womens Health Gend Based Med*. 2000; 9:19-27.
8. Hankinson SE, Manson JE, Spiegelman D, et al. Reproducibility of plasma hormone levels in postmenopausal women over a 2-3-year period. *Cancer Epidemiol Biomarkers Prev*. 1995; 4:649-54.
9. Reinecke H, Bogdanski J, Woltering A, et al. Relation of serum levels of sex hormone binding globulin to coronary heart disease in postmenopausal women. *Am J Cardiol*. 2002; 90:364-8.
10. Golden SH, Maguire A, Ding J, et al. Endogenous postmenopausal hormones and carotid atherosclerosis: a case-control study of the atherosclerosis risk in communities' cohort. *Am J Epidemiol*. 2002; 155:437-45.
11. Montalcini T, Gorgone G, Gazzaruso C, et al. Role of endogenous androgens on carotid atherosclerosis in non-obese postmenopausal women. *Nutr Metab Cardiovasc Dis*. 2007; 17:705-11.
12. Rexrode KM, Manson JE, Lee IM, et al. Sex Hormone Levels and Risk of Cardiovascular Events in Postmenopausal Women. *Circulation*. 2003; 108:1688-93.
13. Baher HB, Al-Hadi AH, Al-Shamma GA. Why Not Post Prandial Serum Lipid?! *Zanco J Med Sci*. 2008; 22:165-8.
14. Ridker PM. Fasting versus Non-fasting Triglycerides and the prediction of Cardiovascular Risk: Do We Need to Revisit the Oral Triglyceride Tolerance Test? *Clin Chem*. 2008; 54:111-3.
15. Lambrinoudaki L, Christodoulakos G, Rizos D, et al. Endogenous sex hormones and risk factors for atherosclerosis in healthy Greek postmenopausal women. *Eur J Endocrinol*. 2006; 154:907-16.
16. Mudali S, Dobs AS, Ding J, et al. Endogenous postmenopausal hormones and serum lipids: the atherosclerosis risk in communities study. *J Clin Endocrinol Metab*. 2005; 90:1202-9.