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SEASONAL VARIATION OF SERUM LIPIDS IN ADULTS: TEHRAN LIPID AND GLUCOSE STUDY

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Abstract:

Background: a variety of studies have noted seasonal variation in blood lipid levels, yet the mechanism for this phenomenon has not been clear. This leads to significant difference in prevalence of lipid disorders in different seasons. **Methods:** A cross sectional study conducted on 6894 individuals (2890 men and 4004 women) aged 20-64 years who participated in the 1st phase of Tehran Lipid and Glucose study from March 1999 to September 2001. The mean level of plasma lipid values was compared between seasons by ANCOVA after adjustment for age, physical activity, smoking, BMI and waist-to-hip ratio. The sex specific prevalence of lipid disorders in summer and winter was calculated. **Results:** 58% of participants were women. The mean age of men and women was 38.3 ± 11.3 and 39.4 ± 11.6 respectively ($P=0.13$). There was a significant seasonal variation in serum total cholesterol, LDL-C and HDL-C in men ($P<0.05$) with a peak in winter and a trough in summer ($P<0.05$). In women, only triglyceride levels showed significant seasonal variation characterized by increase in summer and decrease in winter ($P<0.05$). In men, there was 26.2% increase in prevalence of hypercholesterolemia (>240 mg/dl) in winter compared to summer ($P<0.05$). The corresponding increase in level of high risk LDL-C (≥ 160 mg/dl) was 26.7% and 24.9 % in men and women respectively ($P<0.05$). There was 23.8% decrease in the prevalence of hypertriglyceridemia (>200 mg/dl) in winter compared to summer in women ($P<0.001$). **Conclusion:** This study confirms seasonal variation in blood lipid levels and suggests greater amplitude in seasonal variability in men than women. On the other hand, the increase in the prevalence of high risk LDL-C in both genders in winter should be considered in patients screening and follow-up strategies.

Keywords:

[Seasonal variation](#)

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