

Effect of normal pregnancy on plasma levels of lipoprotein (a)

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Abstract

Introduction: Lipoprotein (a) [Lp(a)], a cholesterol- rich particle in human plasma is an independent risk factor for atherosclerosis. In addition to diabetes mellitus and renal failure, normal and complicated pregnancy may affect the plasma levels of this lipoprotein. Since the effect of pregnancy and its complication on plasma level of Lp(a) is race dependent, the aim of present study was to evaluate the effect of pregnancy on plasma Lp(a) level in a group of normal pregnant women living in Yazd City.

Materials and Methods: The study groups included 94 normal pregnant women (with a mean age 24.6 ± 4.33 years) and 51 non-pregnant women (mean age 26.2 ± 6.73 years). Fasting blood samples were collected in the morning and sera were stored at -70 °C until Lp(a) was assayed. Statistical analysis included, U-test and Wilcoxon-test for comparison of Lp(a), t-test for comparison of lipids, Kruskal-Wallis-test for comparison of variables in four groups (first, second, third, trimesters and control) and Pearson correlation test, for correlation of Lp(a) to other variables.

Results: plasma Lp(a) levels in study group did not correlate significantly with age and other lipids, and in the pregnant group, (Mean \pm SD, 25 ± 22.5 mg/dl) were significantly ($p=0.01$) higher than controls (18 ± 13.5 mg/dl). Lp(a) plasma levels did not show any significant correlation with age, cholesterol and triglyceride levels. Plasma Lp(a) levels in the second half of pregnancy (31 ± 22.4 mg/dl) was higher than the levels in the first half (20 ± 16 mg/dl). Comparison of plasma Lp(a) in the third trimester and control showed a significant elevation in the third trimester.

Conclusion: The results of the present study indicate that like most other reports, plasma Lp(a) levels increased during normal pregnancy in our study population, and the elevation is more pronounced in the second half of pregnancy. Since very high levels of plasma Lp(a), may affect placental circulation, more studies are needed to clarify the possible role of this lipoprotein in complicated pregnancies such as pre-eclampsia, history of low birth weight and repeated fetal loss.

Key Words: Lipoprotein (a), Normal pregnancy, Risk factors, Lipids, and Plasma lipoproteins.

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