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# "APO(a) isoforms and LP(a) concentration in predicting risk for coronary artery disease: A study in men <55 years of age "

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## Abstract:

Lipoprotein (a) [Lp (a) is formed by assembly of LDL-particles and the carbohydrate rich protein, apolipoprotein (a) [apo (a)]. Elevated plasma Lp (a) levels are an independent predictor of the development of premature coronary artery disease (CAD), but is not clear whether the apo (a) isoform plays on additional and independent role or not. To investigate the possible effect of apo (a) isoform on premature CAD (in patients < 55 years of age), we have analyzed apo (a) isoforms, Lp (a) level and their relation with many recognized CAD risk factors, in 60 male patients with angiographically defined CAD and in 60 male control with no angiographic evidence of CAD. The results show elevated Lp (a) concentration (29.4±16.1, vs. 16.5±9.9 P<0.01) and frequency of S2 isoform (31.7%, vs. 6.7% P<0.01) and B isoform (10% vs. 1.7% P<0.01) in patients with premature CAD. Patients with S2 isoform exhibited significantly higher plasma Lp(a) concentration than control subject with the same isoform (39.8±15.9 vs. 20.5±6.9, P<0.05), but patient with B isoform exhibited no significant Lp(a) concentration as compared to the controls (49.5±9.46 vs. 45). In addition, all patients had a low frequency of S4 and null isoforms. The distribution of apo (a) Isoforms was significantly shifted towards small isoform size (band S2) in the CAD as compared to the controls. This study provides evidence that CAD patient < 55 years of age have a different pattern of apo (a) isoforms than controls, and therefore apo (a) isoform may play an important role in predicting premature CAD.

## Keywords:

Lipoprotein(a) [LP(a)] ، Apolipoprotein(a) [apo(a)] ، Coronary artery disease (CAD) ، Isoform

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