Lipoprotein (a) as a predictor of chronic coronary syndrome and low-density lipoprotein cholesterol as a predictor of acute coronary syndrome

KLINIČKA BOLNICA DUBRAVA

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Background

Independent of low-density lipoprotein cholesterol (LDL-C) levels, lipoprotein (a), or Lp(a), is a widely acknowledged biomarker for atherosclerosis and coronary artery disease. Studies have demonstrated the role of Lp(a) in the development of acute coronary syndrome (ACS), however it is unclear if Lp(a) could have a significant role in identifying those individuals who are at risk of developing chronic coronary syndrome (CCS).

Objectives

This study sought to investigate the association of Lp(a) and LDL-C levels with occurence of acute and chronic coronary syndrome.

Methods

We analysed patients included in CaRD registry (NCT06090591) who underwent coronary angiography in our institution between June 2024 and September 2024. Logistic regression analysis was conducted to investigate the association of higher Lp(a) and LDL-C levels with occurence of ACS and CCS. A p value of 0.05 was regarded as statistically significant.

Figure 1.

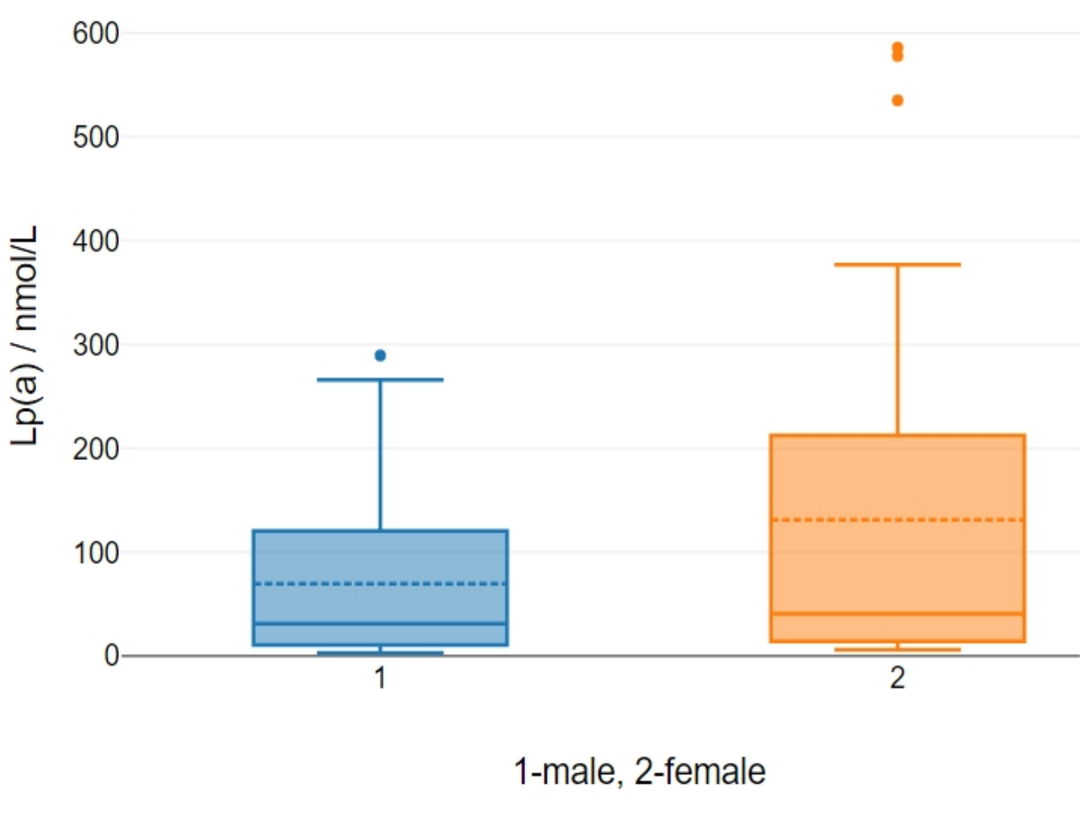

Figure 1. Mean and median Lp(a) values according to gender. Lp(a)=lipoprotein(a).

Results

This registry-based study included 141 patients with a median age of 63 years (IQR 54-71). Male patients were more prevalent than female patients (77% vs 23%, respectively). Notably, women were more likely to display higher Lp(a) levels (p=.004). No statistically significant correlation of Lp(a) with age was observed, though older patients tend to have higher LDL-C value (p=.011). Patients with higher LDL-C levels were more likely to experience acute coronary syndrome (p=.005), while patients with higher Lp(a) levels more frequently presented with chronic coronary syndrome (p=.024).

Figure 2.

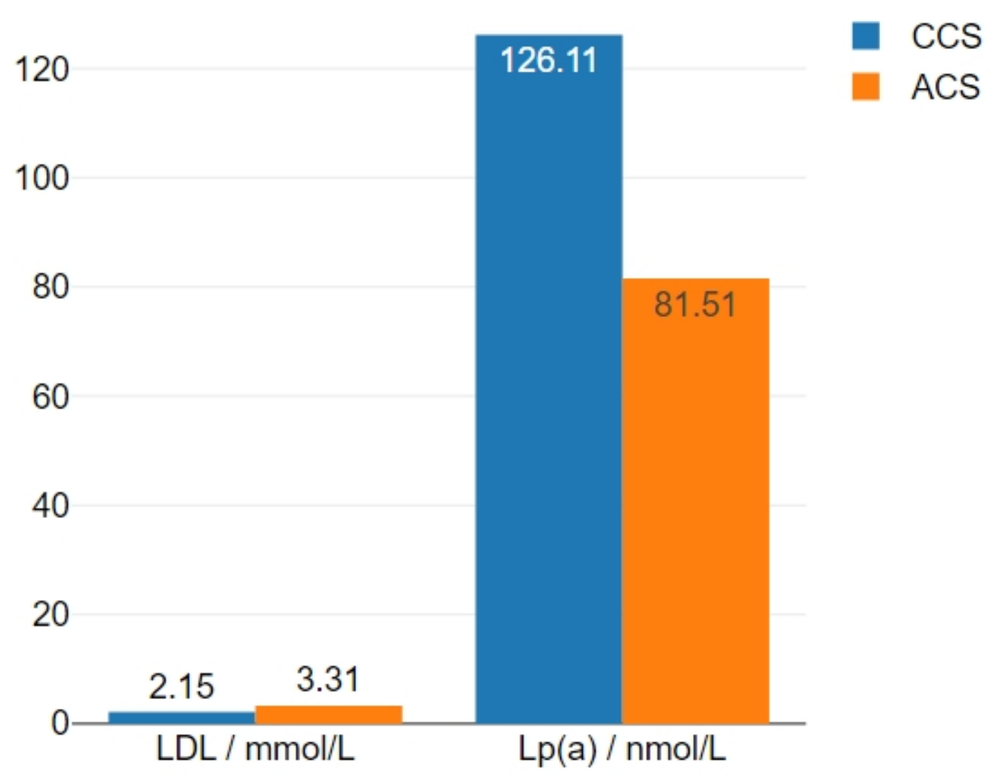

Figure 2. Mean Lp(a) and LDL-C values in groups of patients presenting with chronic and acute coronary syndrome. ACS=acute coronary syndrome; CCS= chronic coronary syndrome; LDL-C=low-density lipoprotein cholesterol; Lp(a)=lipoprotein(a).

Conclusion

Based on results of our study, joined Lp(a) and LDL-C analysis might be invaluable tool in primary prevention setting, with the objective of distinguishing high-risk individuals who are more likely to present with CCS from those who are more likely to present with ACS. Additional research and larger sample sizes with longer follow-up are required to investigate the role of Lp(a) and LDL-C as markers of chronic and acute coronary syndrome, respectively.

Keywords: lipoprotein(a), low-density lipoprotein cholesterol, acute coronary syndrome, chronic coronary syndrome

Literature:

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