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

Dijana Bešić[1]*, Petra Bistrović[1], Tomislav Čikara[1], Klara Pospiš[2], Sara Varga[3], Dominik Buljan[1], Fran Rode[1], Fran Šaler[1], Marko Galić[4], Merljinda Ljušaj[5], Marija Radić[1], Marin Viđak[1], Martina God[6], Šime Manola[1], Ivana Jurin[1]

[1]Dubrava University Hospital, Zagreb, Croatia
[2]Special Hospital for Medical Rehabilitation Krapinske Toplice, Krapinske Toplice, Croatia
[3]"Dr. Ivo Pedišić" General Hospital, Sisak, Croatia
[4]"Dr. J. Benčević" General Hospital, Slavonski Brod, Croatia
[5]Čakovec County Hospital, Čakovec, Croatia
[6]Varaždin General Hospital, Varaždin, Croatia

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***ADDRESS FOR CORRESPONDENCE**: Dijana Bešić, Klinička bolnica Dubrava, Avenija Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-99-2923-347 / E-mail: dijana.besic94@gmail.com

ORCID: Dijana Bešić, https://orcid.org/0000-0001-9701-0253 • Petra Bistrović, https://orcid.org/0000-0002-3650-3297
Tomislav Čikara, https://orcid.org/0000-0001-8012-4481 • Klara Pospiš, https://orcid.org/0000-0002-4090-5512
Sara Varga, https://orcid.org/0009-0005-1125-8108 • Dominik Buljan, https://orcid.org/0000-0001-9603-2610
Fran Rode, https://orcid.org/0000-0002-8787-2455 • Fran Šaler, https://orcid.org/0000-0002-1428-3940
Marko Galić, https://orcid.org/0009-0003-0437-6750 • Merljinda Ljušaj, https://orcid.org/0009-0007-8228-1457
Marija Radić, https://orcid.org/0000-0003-2317-6300 • Marin Viđak, https://orcid.org/0000-0003-0341-9598
Martina God, https://orcid.org/0009-0009-8838-0549 • Šime Manola, https://orcid.org/0000-0001-6444-2674
Ivana Jurin, https://orcid.org/0000-0002-2637-9691

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).[1,2] This study sought to investigate the association of Lp(a) and LDL-C levels with occurrence of acute and chronic coronary syndrome.

Patients and Methods: We analyzed patients included in CaRD registry (NCT06090591) who underwent coronary angiography in Dubrava University Hospital between June 2024 and September 2024. Logistic regression analysis was conducted to investigate the association of higher Lp(a) and LDL-C levels with occurrence of ACS and CCS. A p value of 0.05 was regarded as statistically significant.

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).

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.

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LITERATURE

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