

The Relationship between Apelin Serum Levels with Epicardial Fat Thickness in Patients with Acute Myocardial Infarction (AMI) and Comparison with Patients with Stable Angina

Abstract

Background: Apelin, as an endogenous peptide, is considered a regulator of cardiovascular homeostasis.

Aim: The aim of the present study was to evaluate the association of serum apelin levels with echocardiographic findings such as epicardial fat thickness (EFT) in patients with acute myocardial infarction compared with those without coronary artery disease (CAD).

Methods: Out of 90 candidates for angiography based on inclusion criteria, three groups were included in the study, including the group without angiographic findings (Con group), the group with stable angina (S.A.P), and the group with acute myocardial infarction (A.M.I). Angiographic, echocardiographic, and biochemical parameters were measured for all patients. Comparison between groups was performed using ANOVA statistical test and the relationship between variables was evaluated using Pearson test.

Results: Serum apelin levels were higher in the control group compared with S.A.P and A.M.I groups ($P < 0.001$ for both). Also, serum apelin levels were lower in the A.M.I group compared to the S.A.P group ($P < 0.001$). A significant negative association was also observed between serum levels of apelin and Ck-MB, EFT, Gensini score, and troponin-T.

Conclusion: Although one of the sources of apelin secretion is adipose tissue, the results of the present study revealed that despite the increase in EFT values, the secretion of apelin decreased. The results suggest that cardiomyocytes damage due to myocardial infarction has a greater impact on serum apelin concentrations, which requires further investigation.

Keywords: Apelin; epicardial fat thickness; angiography, acute myocardial infarction.