Thesis Summary No. 24924 Master of Clinical Biochemistry, Faculty of Veterinary Medicine, Urmia University.

Autor: Zohreh Fagheei Aghmiyuni

Thesis title: Investigating the relationship between Apelin and its ratio to LP(a) with the severity of atherosclerosis in patients with coronary heart disease.

Introduction: Cardiovascular disease (CVD) is the largest cause of death, accounting for approximately one-third of all deaths worldwide. Several studies have shown that apelin can be considered as a biomarker in the diagnosis of cardiovascular diseases. Therefore, the aim of this study is to investigate the relationship between apelin and its ratio to LP(a) with the severity of atherosclerosis in patients with coronary heart disease.

Materials and methods: In this study, 70 people were divided into two groups, healthy and those with coronary artery obstruction, based on the degree of coronary artery obstruction by an international expert after angiography. Patients with coronary artery occlusion were subsequently classified into one-vessel, two-vessel, and three-vessel occlusion subgroups based on the number of occluded vessels. Demographic information of patients including age, gender, diabetes mellitus and obesity were recorded. Then blood samples were taken from selected patients and serum was separated. Blood lipid profile including triglyceride, cholesterol, LDL, HDL, as well as apelin and LP (a) values were measured by ELISA method.

Results: In this study, the prevalence of coronary artery occlusion was 54.3% in men and 45.7% in women. The highest frequency of patients with coronary heart disease was observed in the age group of 51-60 years (30%) and the lowest frequency was observed in the age group under 40 years (5.7%)., the incidence of diabetes in coronary artery patients is equal to 41.4%. Examining the values of Aplin and LP (a) in patients with coronary artery occlusion compared to the control group showed that the values of these indicators in CAD patients had a significant increase compared to the control group ($p<0.05$). This increase in patients with three vessels group is more than the rest of the affected groups. Also, a significant increase in triglyceride and LDL was shown in the patient groups compared to the control group ($p<0.05$). These findings are intensified by increasing the number of involved vessels. Examining the results of the ROC curve showed that Aplin and LP (a) have high specificity and sensitivity for the early diagnosis of CAD, respectively.

Conclusion: The findings of the present study showed a positive and high correlation between apelin and LP (a), triglyceride and other biochemical parameters, which indicates the sensitivity and special importance of this indicator and can be used as ideal indicators for diagnosis and follow-up of the disease. The coronary arteries of the heart are used.

Key words: Aplin, LP(a), coronary heart disease, Biomarker