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Original Article


The Role of Serum Lp (a) in Increasing the Risk of Thrombus Formation in Patients With Atrial Fibrillation

Ali Kazemi Saeed, MD^{1*}, Gholamreza Namadani, MD², Darioush Kamal Hedayat, MD³

¹Tehran Heart Center, Medical Sciences / University of Tehran, Tehran, Iran.

²Behshahr General Hospital, Medical Sciences / University of Tehran, Tehran, Iran.

³Shariati Hospital, Medical Sciences / University of Tehran, Tehran, Iran.

 Corresponding Author:

Ali Kazemi Saeed, Assistant Professor of Cardiology, Tehran Heart Center, Tehran University of Medical Sciences, Tehran, Iran. 1411713138. Tel: +98 21 88029620. Fax: +98 21 88029637. E-mail: Alikasaeid@yahoo.com.

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Abstract:

Background: Atrial fibrillation (AF) is prevalent among cardiac patients; and as the risk of thromboembolism is high in this arrhythmia, discrimination of the effective risk factors in producing left atrial (LA) thrombosis is clinically important. The molecular structure of lipoprotein(a) [Lp(a)] is very similar to plasminogen, so it can be hypothesized that the high level of Lp(a) is a compromising factor for the prevention of fibrinolysis (thrombogenesis).

Methods: This case-control study was conducted in patients with chronic AF. Most of the subjects had mitral stenosis. LA thrombosis was confirmed by transthoracic and transesophageal echocardiography.

Result: The study group consisted of 50 chronic AF patients mostly with mitral stenosis. Half the patients had LA thrombosis (patient group or P) and the other half did not (control group or C). The mean age of the control group (C) and patient group (P) was 45±11 y and 57±9 y, respectively. There was no significant correlation between sex and LA gradient and existence of LA thrombus. LA size was 49±5 mm (C) and 56±9 mm (P), respectively. Left atrial blood velocity was 12±2 cm/sec (C) and 5±3 cm/sec (P), and Lp(a) concentration was 30±6.7 mg / dl (C) and 55±2.75 mg / dl (P). There was a significant correlation ($p<0.001$) between age, LA blood velocity, LA size, and serum concentration of Lp(a), which was confirmed by t-test.

Conclusion: There has been a great deal of research into the classic risk factors of LA thrombosis in chronic AF, but the study on the effect of Lp(a), which is an atherosclerosis risk factor, on the formation of LA thrombosis is almost new. According to the results of the present study, Lp(a) should be measured in all chronic AF patients. We can assume that lowering Lp(a) serum level may decrease the risk of LA thrombosis in chronic AF patients.

Keywords:

Atrial fibrillation . Lipoprotein (a) . Mitral stenosis

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