The effect of left atrium volume on patients' prognosis in acute myocardial infarction

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Madam, diastolic function evaluated following acute myocardial infarction using Doppler echocardiography provides important prognostic information.[1,2] Evaluating left atrium volume is a good way to estimate prognosis in patients with acute myocardial infarction as it indicates time and severity of diastolic dysfunction and longer term results of acute myocardial infarction.[3,4] The present study evaluated the effect of left atrium volume on patients' prognosis following acute myocardial infarction. It was cohort study conducted on 100 patients who were admitted with acute myocardial infarction. They were studied for 9 months and their one-month mortality rate was evaluated. The patients' demographic factors, risk factors, mechanical and arrhythmic complications, and echocardiography indices such as systolic and diastolic functions, and left atrium volume were noted. It was seen that mortality (27.3%, 6.22) in patients with atrium index>32ml/m2 is more compared to cases with lower atrium index (1.3%, 1.78) ($p<0.001$). There was not any meaningful difference in mortality rate of the patients considering age and gender ($p>0.05$). The study indicated the lack of any meaningful difference in patients' mortality rate in terms of hypertension, diabetes, smoking, and dyslipidaemia. However, mortality rate was significantly higher in myocardial infarction as a result of elevated-ST segment, diastolic dysfunction, restrictive pattern, ejection fraction of left atrium <40%, and left atrium volume index >32ml/m^2. High volume of the left atrium independently refers to bad prognosis in patients with acute myocardial infarction which is confirmed with the outcome of clinical predictors and common echocardiography indices, even following modification.[5,6]

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References

1. Lonborg JT, Engstrom T, Moller JE, Ahtarovski KA, Kelbæk H, Holmvang L, et al. Left atrial volume and function in patients following ST elevation myocardial infarction and the association with clinical outcome: a cardiovascular magnetic resonance study. Eur Heart J Cardiovasc Imaging 2013; 14: 118-27.
2. Cameli M, Lisi M, Focardi M, Reccia R, Natali BM, Sparla S, et al. Left atrial deformation analysis by speckle tracking echocardiography for prediction of cardiovascular outcomes. Am J Cardiol 2012; 110: 264-9.
3. Cho JH, Kim SH, Kim CH, Park JY, Choi S, Yun MH, et al. Prognostic value of left atrium remodeling after primary percutaneous coronary intervention in patients with ST elevation acute myocardial infarction. J Korean Med Sci 2012; 27: 236-42.
4. Lamblin N, Fertin M, de Groote P, Bauters C. Incidence, determinants and consequences of left atrial remodelling after a first anterior myocardial infarction. Arch Cardiovasc Dis 2012; 105: 18-23.
5. Kuhl JT, Moller JE, Kristensen TS, Kelbæk H, Kofoed KF. Left atrial function and mortality in patients with NSTEMI an MDCT study. JACC Cardiovasc Imaging 2011; 4: 1080-7.
6. Antoni ML, ten Brinke EA, Atary JZ, Marsan NA, Holman ER, Schalij MJ, et al. Left atrial strain is related to adverse events in patients after acute myocardial infarction treated with primary percutaneous coronary intervention. Heart 2011; 97: 1332-7.