

The Effect of Right Atrial Pressure on Survival in Patients with Acute Myocardial Infarction

*Dragu, Robert; Agmon, Yoram; Kapeliovich, Michael; Hammerman, Haim; Aronson, Doron
Rambam Health Care Campus, Cardiology, Haifa, Israel*

Aim: To assess the prevalence and long term prognostic significance of elevated right atrial pressure (RAP) in the early phase of hospitalization for acute myocardial infarction (AMI).
Methods: We prospectively studied 1269 patients admitted with AMI and RAP estimated by echocardiographic examination performed 24 - 48 hours from admission. Mean follow-up was 36.5 months. Cox models were used to evaluate the relationship between RAP and long term survival.

Results: Normal RAP (5 mmHg), mild (10 mmHg), moderate (15 mmHg) and severe (20 mmHg) elevated RAP were diagnosed in 870 (68.5%), 238 (18.6%), 104 (8.4%) and 57 (4.5%) patients respectively. Long term mortality according to RAP strata was 14.5%, 29.8%, 38.5% and 61.4% respectively ($p < 0.0001$). The hazard ratios (HR) for mortality in patients with mild, moderate and severe elevated RAP, as compared with normal RAP were: 2.22 (95%CI 1.66-2.97; $p < 0.0001$), 3.29 (95%CI 2.30-4.70; $p < 0.0001$) and 6.62 (95%CI 4.54-9.63; $p < 0.0001$). After adjusting for age, gender, Killip class, diabetes mellitus, ST elevation AMI, anterior wall infarction, left and right ventricular systolic function and creatinine clearance, moderate and severe elevated RAP remained a strong predictor for mortality: 1.86 (95%CI 1.17-2.98, $p < 0.009$) and 2.78 (95%CI 1.57-4.93; $p < 0.0001$) respectively.

Conclusion: The presence of moderate or severe elevated RAP in the early phase of AMI is strongly related to a worse outcome.