Clinical and Echocardiographic Predictors of Mortality in Patients with Severe Tricuspid Valve Regurgitation

Olga Dankevich[2], Diab Mutlak[1], Shemy Carasso[1,2], Jonathan Lessick[1,2], Izhak Kehat[1,2], Doron Aronson[1,2], Shimon Reisner[1,2], Yoram Agmon[1,2]

[1]*Cardiology, Rambam Health Care Campus, Israel*
[2]*Faculty of Medicine, Technion, Israel*

Objective:

To determine the predictors of mortality in patients with severe tricuspid regurgitation (TR).

Methods:

Consecutive patients with severe TR undergoing echocardiography at a tertiary care medical center during a 36 months period were identified (341 patients, 239 hospitalized patients [hospitalization for any cause] and 102 non-hospitalized patients; age 73±14 yrs, 36% male). The relationships between demographics, echocardiographic parameters, clinical characteristics and mortality were examined.

Results:

During a median follow-up period of 21 months (interquartile range 4-34), 178 patients (52%) died. Survival was significantly different between hospitalized and non-hospitalized patients at 1 yr (57% versus 86%, respectively) and 3 yrs of follow-up (34% versus 73%) (P<0.00; graph). By multivariate Cox regression analysis in the total study population – right ventricular (RV) dysfunction (moderate or severe, present in 19% of patients) (hazard ratio [HR] 1.9, 95% confidence interval [CI] 1.2-3.0) and pulmonary artery pressure (PAP) > 55 mmHg (median value of study population; HR 1.6, CI 1.1-2.5) were independent predictors of mortality, adjusting for age, gender, and hospitalization status. Among hospitalized patients (in whom clinical data were available for analysis) – Charlson comorbidity index ≥3 (present in 55% of patients) was an additional independent predictor of mortality (HR 1.6, CI 1.1-2.5), whereas severe heart failure (NYHA class III-IV or anasarca) was not. The mortality in a minority of hospitalized patients (n=40) without the above risk factors (RV dysfunction, pulmonary hypertension, or significant comorbidity) was markedly lower than in patients with ≥1 risk factor (33% versus 69%, respectively, P<0.001).

Conclusions:

Patients with severe TR are typically elderly with significant comorbidity. Short-term mortality is very high in these patients, especially in patients who are hospitalized at the time of diagnosis and in the presence of echocardiographic and clinical markers of high risk.