

Outcome of Functional Tricuspid Regurgitation in Patients with Systolic Dysfunction

Topilsky, Yan; Enriquez Sarano, Maurice

Mayo Clinic, Rochester, MN, USA

Background: The clinical significance of functional tricuspid regurgitation (TR) in the context of left ventricular dysfunction is Unknown.

Methods: We enrolled 291 patients (age 69.9±12.1 years; 68.7 percent men; ejection fraction, 31.3±10.1 percent, pulmonary systolic pressure 56.4±14.1) with functional TR, quantified according to the proximal isovelocity surface area method (regurgitant volume, 23.9±29.0 ml per beat; effective regurgitant orifice (ERO), 26.0±37.0 mm²). Patients were classified according to TR ERO as significant (ERO≥25 mm²), identifiable (ERO 1-25 mm²) and trivial TR (ERO <1 mm²) matched for age, gender, ejection fraction, pulmonary pressure and severity of mitral regurgitation.

Results: The estimated five-year overall survival rates was not influenced by the presence or severity of functional TR (46.8±4.9 percent, 59.5±12.9, and 36.2±5.2; p=0.6). On the other hand, freedom from congestive heart failure (69.2±4.9 percent, 69.2±13.0 percent, and 37.2±6.3 percent; p=0.002), or cardiac events under medical management (death, heart failure, or new onset atrial fibrillation) 74.2±7.8 percent, 60.0±21.9 percent, and 31.7±5.6 percent; p=0.00005, were significantly lower in patients with significant functional TR (ERO≥25 mm²). TR ERO was an independent predictor of cardiac events (RR per 10-mm² increment, 2.8 (1.8 to 4.1); P<0.0001). Compared with patients with trivial regurgitation, those with an orifice of at least 25 mm² had an increased risk of congestive heart failure (adjusted risk ratio, 2.0(1.3 to 3.1); P=0.001) and cardiac events (adjusted risk ratio, 3.3 (1.8 to 6.9) P<0.0001). Cardiac surgery was ultimately performed only in 18 patients.

Conclusions: Significant functional TR (ERO>25mm²), in the presence of systolic left ventricular dysfunction is characterized by a cumulative higher rate of complications, especially recurrent congestive heart failure, but not excess mortality. Patients with an ERO>25 mm² should be closely monitored.