Prognostic Value of E/E= Ratio in Patients with Unoperated Severe Aortic Stenosis

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Objectives: To evaluate the value of clinical and echo-Doppler parameters for the prognosis of severe unoperated aortic stenosis (AS).

Background: Approximately one third of severe, symptomatic AS patients are denied surgery. Risk stratification of AS is important to determine eligibility for transcatheter aortic valve replacement, a new treatment option for AS patients deemed suboptimal for surgical aortic valve replacement.

Methods: We retrospectively compared clinical and echo-Doppler parameters between survivors and nonsurvivors in 125 patients with unoperated severe AS.

Results: The 1-year survival rate was 62.4%. In univariate analysis, survivors compared to nonsurvivors were younger (80.0¡10.9¸ years vs. 84.9¡ 11.1¸years, p=0.02), had greater left ventricular ejection fraction (LVEF) (55¡ 15%¸vs. 50¡16¸, p=0.042), a higher left ventricular stroke volume (63¡19¸ml vs. 56¡13¸ml, p=0.015), alower E/E' ratio (12.2¡5.7¸ vs. 16.9¡7.4¸, p<0.001), and lower prevalence of E/E'>15% (20% vs. 55%, p<0.001). Symptomatic status was Insignificantly different between survivors and nonsurvivors. In patients with an LVEF ¡Ý50%, the subgroup with E/E¯¡Ü15 and with E/E¯>15 had a 73.8% and 47.8% 1-year survival rate, respectively (p=0.027).). In the patients with an LVEF<50%, the patients with E/E¯¡Ü15 and those with E/E¯>15 demonstrated a 70.6% and 22.3% 1-year survival rate, respectively (p= 0.003). In multivariate analysis,the only significant predictors of was E/E¯>15. Adjusted mortality risk 2.34 (range 1.27 to 4.33, p=0.0072).

Conclusions: LVEF was a significant predictor of survival only in the univariate analysis. B-type natriuretic peptide alone was not a predictor of prognosis in the study population. The E/E¯ ratio is the single most predictive clinical and echo-Doppler parameter in the assessment of prognosis in unoperated severe AS