Comparisons of the new EuroSCORE II with the logistic EuroSCORE and the Society of Thoracic Surgeons score — implications for transcatheter aortic valve implantation


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Background. — The logistic EuroSCORE (logES) and the Society of Thoracic Surgeons (STS) scores are commonly used to select high-risk patients for Transcatheter Aortic Valve Implantation (TAVI) but their validity in patients with valvular heart disease has been questioned. The EuroSCORE II (ESII) was elaborated to improve risk assessment but comparisons with logES and STS scores are rare and no threshold has been proposed to define high-risk patients.

Methods. — In 272 patients with severe symptomatic aortic stenosis who underwent a TAVI at our institution we compared the three scores.

Results. — The ESII was lower and moderately correlated to the logES (9 ± 8% vs. 23 ± 14%, P < 0.01; r = 0.61, P < 0.001) and not different but poorly correlated to the STS (10 ± 9%, P = 0.10; r = 0.25, P < 0.001). Based on recommended thresholds defining high-risk patients (LogES ≥ 20% or STS ≥ 10%), area under the curve of the ROC analysis was 0.81 for the logES and 0.67 for the STS and an ESII of 7% provided the best diagnostic value. However, contingency analyses showed that agreement between the ESII and the logES was moderate (kappa = 0.44) with a risk assessment different in 76 patients (28%) and agreement with the STS score was poor (kappa = 0.27) with a risk assessment different in 99 patients (36%).

Conclusions. — An ESII threshold of 7% may be used to identify high-risk patients but correlations and agreements between the scores were only modest. Our results highlight the limits of current scoring systems and reinforce the ESC Guidelines stressing the importance of the clinical judgment of a heart team in addition to a combination of scores.