Prognostic implications of a novel algorithm to grade secondary tricuspid regurgitation

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Background

Patients admitted for tricuspid regurgitation (TR) interventions in clinical practice often exceed the lower threshold of severe TR by far. Current cutoff values do not comprehensively reflect the true spectrum of TR. Recently, Fortuni et al. proposed a novel algorithm combining vena contracta (VC) and effective regurgitant orifice area (EROA) to grade moderate and severe TR with prognostic implications (1). Applying the algorithm, the authors found that it is able to capture the whole range of TR severity and identified patients with torrential TR who were characterized by a worse prognosis.

Methods

In the present study we took advantage of a recently published study evaluating functional TR and survival (2). Using this well characterized patient cohort including 362 patients with moderate and severe TR (47.9 % male, mean age 75.4 ± 9.4 years) we aimed to validate findings by Fortuni et al (1).

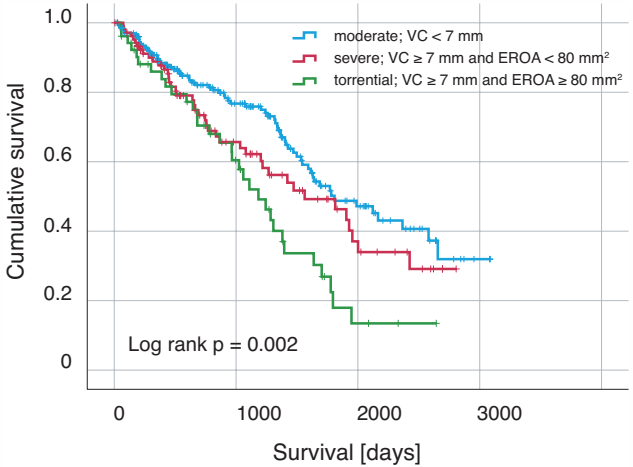

Figure 1. Kaplan-Meier curves for survival in patients with moderate, severe and torrential secondary tricuspid regurgitation according to the novel algorithm proposed by Fortuni et al.
VC = vena contracta

Results

The new classification revealed 203 patients with moderate, 107 with severe TR and 52 torrential with TR. Kaplan-Meier survival curves showed higher mortality rates in patients with severe and especially in those with torrential TR (Figure 1). TR grade was associated with worsened survival in logistic regression (hazard ratio 1.44, 95 % confidence interval 1.17 – 1.78; $p < 0.001$).

Conclusion

We found the proposed grading system was also able to reflect the range of TR severity in our cohort, thus confirming the results by Fortuni et al.. The novel algorithm may indeed help to further discriminate the spectrum of more than moderate TR and identify those patients with “torrential” TR, associated with a worse prognosis. Whether percutaneous TR interventions may represent remedy in those patients needs to be evaluated in future prospective studies.

(1) Fortuni F, Dietz MF, Prihadi EA et al. Prognostic Implications of a Novel Algorithm to Grade Secondary Tricuspid Regurgitation. JACC Cardiovasc Imaging 2021.
(2) Bannehr M, Edlinger CR, Kahn U et al. Natural course of tricuspid regurgitation and prognostic implications. Open Heart 2021;8.

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