

LETTER TO THE EDITOR

Letter by Veen et al Regarding Article, “Incidence and Clinical Significance of Worsening Tricuspid Regurgitation Following Surgical or Transcatheter Aortic Valve Replacement: Analysis From the PARTNER IIA Trial”

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To the Editor:

With great interest we read the article of Cremer et al.¹ The authors have to be congratulated by laying the emphasis on the previously forgotten valve aka the tricuspid valve. They found that worsening of tricuspid valve regurgitation +1 grade after transcatheter or surgical aortic valve replacement was associated with higher mortality within 2 years.

Contrary to aortic valve regurgitation, tricuspid valve regurgitation is highly dependent on volume status and difficult to quantify.² Temporary change in volumetric status after cardiac surgery is common,^{3,4} which may be accompanied by temporary increase in tricuspid valve regurgitation. Therefore, some patients with an increase in tricuspid valve regurgitation in the first 30 days may show a decrease in tricuspid valve regurgitation in the next 30 days, whereas other may show a persistent increase in tricuspid valve regurgitation.

Novel transcatheter tricuspid valve approaches are on the horizon and correctly identifying patients with persistent versus temporary tricuspid valve regurgitation may be of high importance for upcoming trials, since one may expect that additional tricuspid valve interventions are not beneficial in patients with temporary tricuspid valve regurgitation, but may be beneficial in patients with persistent tricuspid valve regurgitation.

In this light, longitudinal analyses of tricuspid valve regurgitation evolution over time are essential, and the most sophisticated method to do so are generalized mixed-models. Potentially, patients can drop out of follow-up due to mortality related to worsening of tricuspid valve regurgitation and subsequent right ventricle dysfunction. In the long term, only favorable tricuspid valve regurgitation evolutions may remain in the mixed-models, leading to spurious conclusions. Novel statistical approaches

combine a mixed-model with a relative risk model for cardiovascular mortality are developed to adjust for this phenomena. These models are called joint-models and are implemented in several statistical software packages.⁵

In conclusion, snapshots of tricuspid valve regurgitation in the early postoperative phase may overestimate the burden of tricuspid valve disease and can lead to false-negative future trials. Analysis of repeated measurements is vital in identifying patients who may benefit of additional tricuspid valve interventions.

ARTICLE INFORMATION

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Disclosures

None.

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