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# Letter: Balancing, timing, and efficiency in tricuspid TEER

Nikolaos Ktenopoulos[1,2]*, MD, MSc; Anastasios Apostolos[1,2,3], MD, MSc; Konstantinos Toutouzas[1,2], MD, PhD

**Corresponding author: First Department of Cardiology, Hippokration General Hospital of Athens, Vasilissis Sofias 114, 11527, Athens, Greece. E-mail: nikosktenop@gmail.com*

We read with great interest the study by Baldus et al "Transcatheter valve repair of tricuspid regurgitation: 1-year outcomes from the TriCLASP study", reporting the 1-year outcomes of tricuspid transcatheter edge-to-edge repair (T-TEER) using the PASCAL system (Edwards Lifesciences) in patients with significant tricuspid regurgitation (TR)[1]. The authors should be commended for demonstrating high technical success and encouraging clinical improvement in this challenging patient cohort. However, certain aspects of the study warrant further discussion.

Firstly, the substantial discordance between site and core lab TR grading, where almost one-quarter of enrolled patients had ≤moderate TR, as graded by the core lab, raises an important question: could these "moderate" patients still benefit from intervention, much like the early transcatheter aortic valve implantation experience, where treating severe aortic stenosis before advanced symptom onset improved outcomes[2]? If moderate TR patients are indeed symptomatic or demonstrate early right heart remodelling, earlier T-TEER could preserve ventricular function and prevent irreversible damage. Conversely, without randomised evidence, inclusion of such patients risks overestimating the benefit of the intervention if their natural course is more benign. As a result, prospective trials are needed to clarify whether a strategy of earlier intervention in TR is both safe and beneficial.

Furthermore, the modest improvement in Kansas City Cardiomyopathy Questionnaire scores at 1 year in TriCLASP (8.3 points) contrasts with the larger early gains seen in TRILUMINATE (12.3 points) at 1 year. Notably, in TRILUMINATE, this initial improvement attenuated to approximately 10 points by 3 years[3], suggesting that early functional benefit may partially diminish over time due to ageing, comorbidities, or progressive cardiac disease despite sustained TR reduction. In the TriCLASP study, the smaller early gain raises the question of whether similar or greater attenuation could occur over longer follow-up, potentially reducing the lasting patient-perceived benefit. These observations highlight that objective functional improvement, as reflected in the six-minute walk distance gains, may not always translate into sustained quality-of-life enhancement and underscores the importance of aligning endpoint selection with both short- and long-term outcomes.

Finally, when comparing TriCLASP with the pivotal TRILUMINATE trial, both demonstrated high device implantation success (99.3% vs 98.8%, respectively) and excellent in-hospital safety. However, TRILUMINATE patients had a markedly shorter median hospital stay of 1.0 day (interquartile range [IQR] 1-2) compared with 4.0 days (IQR 3-5) in TriCLASP, with 97.7% versus 96.0% discharged home[1,4]. This difference may reflect variations in procedural workflow and postprocedural monitoring practices, but, interestingly, it didn't increase the adverse events rates. From a health-economic and patient-centred perspective, targeting shorter hospitalisation not only reduces resource utilisation but may also limit deconditioning and expedite return to baseline functional status – factors of particular relevance in this elderly population.

In conclusion, TriCLASP provides important real-world evidence for PASCAL-based T-TEER in TR but also raises questions regarding optimal timing of intervention, durability of its benefit, and procedural efficiency. Addressing these





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issues through randomised trials with extended follow-up will be essential to refine patient selection and ensure that anatomical success translates into sustained, meaningful clinical outcomes.

## Authors' affiliations

*1. First Department of Cardiology, Hippokration General Hospital of Athens, Athens, Greece; 2. Unit of Structural Heart Diseases, First Department of Cardiology, Medical School, National and Kapodistrian University of Athens, Hippokration General Hospital of Athens, Athens, Greece; 3. Royal Brompton and Harefield Hospitals, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom*

## Conflict of interest statement

The authors have no conflicts of interest related to this letter to declare.

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