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CAVI or T-TEER: What Does Patient Selection Tell Us About Timely Referral for Transcatheter Treatment of Tricuspid Regurgitation? A Single-Centre Experience

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Introduction: Timely referral of patients with severe tricuspid regurgitation (TR) is essential to preserve interventional treatment options. Major studies, including TRILUMINATE Pivotal, TRI.FR, bRIGHT and TRIC-I-HF, have demonstrated the clinical benefits of transcatheter tricuspid valve intervention in selected populations. However, patients encountered in routine clinical practice may present with advanced disease and anatomical limitations that preclude orthotopic repair.[1-4] *Aim:* To compare the clinical, echocardiographic and hemodynamic characteristics of patients undergoing transcatheter edge-to-edge repair (T-TEER) or heterotopic caval valve implantation (CAVI) at Dubrava University Hospital and to contextualize their profiles against populations enrolled in major clinical trials.

Patients and Methods: We retrospectively analyzed 23 patients undergoing transcatheter intervention for severe TR. Treatment allocation was based on multidisciplinary Heart Team assessment, incorporating valve anatomy, clinical risk (TRI-SCORE), right ventricular function, right ventricular–pulmonary arterial coupling (TAPSE/sPAP), the presence of cardiac implantable electronic devices (CIEDs), and available invasive hemodynamic measurements.

Results: Of 23 patients, 13 underwent CAVI and 10 T-TEER. Patients treated with CAVI were older (median 82 vs 76 years) and had a higher TRI-SCORE (7 vs 2.5). Median TAPSE was 19 vs 21.5 mm, and TAPSE/sPAP was 0.38 vs 0.46 mm/mmHg, with comparable echocardiographically estimated sPAP (48 vs 49 mmHg). Preprocedural CIED prevalence was higher in the CAVI group (53.8% vs 30.0%). Invasive hemodynamic assessment in CAVI patients demonstrated a median mean right atrial pressure of 21 mmHg, mean pulmonary arterial pressure of 29.5 mmHg, and cardiac index of 2.3 L/min/m². CAVI was selected in patients considered unsuitable for T-TEER following multidisciplinary assessment. Comparison with major T-TEER studies highlights the importance of accounting for differences in clinical risk, anatomical suitability and disease severity when interpreting interventional outcomes.

Conclusion: Patients undergoing CAVI exhibited higher clinical risk, lower TAPSE/sPAP and a greater prevalence of CIEDs compared with those treated with T-TEER. These findings, considered alongside major transcatheter TR studies, underscore the importance of timely referral to a specialized Heart Team. Earlier assessment may preserve a broader range of therapeutic options before progression of right-sided heart failure and the development of advanced anatomical or hemodynamic limitations.

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