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## **Caval Valve Implantation (CAVI) as interventional treatment option for severe tricuspid regurgitation - results from the CAVI-TricValve-Registry**

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**THEME:** Interventions for Valvular Disease

**TOPIC(S):** TAVI, Other valvular and structural interventions

### **AIMS**

Transcatheter caval valve implantation (CAVI) is considered as treatment option for inoperable patients with severe tricuspid regurgitation (TR) and venous congestion. The procedure involves the catheter-based deployment of bioprosthetic stent valves in the inferior (IVC) and/ or superior (SVC) vena cava to treat symptoms of right heart failure. Herein, we summarize the up-to-date experience with this treatment approach in a multicenter registry.

### **METHODS AND RESULTS**

The CAVI-Registry included 23 (mean age 74.2±8.0; female 60.9%) patients from 7 cardiac centers across Germany and Canada. Procedural and interventional data as well as information on adverse events at 30 days and during long-term follow-up was collected using standardized report forms.

Patients were treated with single valve implantation (IVC only; n=19, 82.6%) or bicaval valve implantation (IVC+SVC, n=4, 17.4%). In these patients, either ballon-expandable (Sapien XT or Sapien 3: n=18, 78.3%) or self-expandable valves (TricValve n=5; 21.7%, Directflow n=1, 4.3%) were used for either single IVC- or bicaval-valve implantation. When self-expandable valves were used different techniques of IVC landing-zone downsizing were applied including pre-stenting with ≥1 self-expandable stents (n=16) or surgical banding (n=2). In all patients immediate procedural success (defined as successful valve delivery in intended position) was reported. 30d-survival was 82.6% (n=19), long-term survival was reported in 8 patients with an overall median survival 98d (1-1429d). Causes of early mortality included respiratory (n=1) or multiple organ failure (n=3) during the postoperative course and were not linked to the procedure. Early valve migration requiring surgical intervention occurred in one patient.

### **CONCLUSIONS**

Transcatheter caval valve implantation for treatment of severe TR is associated with a high procedural success rate and consistently results in the resolution of caval backflow. Safety and efficacy concerns include sufficient anchoring of valves in dilated caval veins as well as patient selection. As the clinical benefit of the CAVI-concept is still undetermined data from ongoing randomized studies is awaited.