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## Impact of prosthesis choice on mortality after transfemoral transcatheter aortic valve implantation in patients with reduced versus preserved left-ventricular ejection fraction

K. El Chilali, H.A. Kahlert, M. Riebisch, R.I. Mincu, F. Al-Rashid, M. Totzeck, A. Lind, R.A. Janosi, T. Rassaf, P. Kahlert

University Hospital of Essen, West German Heart and Vascular Center, Department of Cardiology and Vascular Medicine, Essen, Germany

**Background:** Outcomes of transfemoral transcatheter aortic valve implantation (TF-TAVI) with a self-expanding (SEP) and a balloon-expandable prosthesis (BEP) seem to be comparable, though head-to-head comparisons, especially in certain patient subsets, are sparse. In addition, patients with a reduced left-ventricular ejection fraction (rEF,  $\leq 40\%$ ) appear to be at higher risk for an increased mortality after TF-TAVI than patients with a preserved left-ventricular ejection fraction (pEF). As it remains unclear, whether outcomes of patients with rEF differ between TF-TAVI using SEP and BEP, we sought to compare all-cause mortality of patients with rEF using a SEP or a BEP.

**Methods:** We retrospectively analyzed data of 679 single-center TF-TAVI patients, which were stratified by baseline ejection fraction (rEF versus pEF) and type of implanted prosthesis (SEP versus BEP). Patients were censored at death or completion of 1-year follow-up, whichever occurred first.

**Results:** Twenty-one percent of patients had rEF, and these patients had a higher 1-year mortality compared to patients with pEF (28% vs. 19%,  $p=0.007$ ). SEP were implanted in 149 patients (49 patients with rEF), while BEP were implanted in 538 patients (92 patients with rEF). All-cause 1-year mortality was similar after SEP- and BEP-implantation (16% vs 19%,  $p=0.516$ ) in patients with pEF. In patients with rEF, however, 1-year mortality was higher after SEP- than after BEP-implantation (43% vs. 21%,  $p=0.004$ , see figure). Patients with rEF had a higher incidence of new permanent pacemaker implantation (26.5% vs. 13%,  $p=0.046$ ) and paravalvular leak  $\geq 2$  (21% vs. 10%,  $p=0.07$ ) after SEP- than after BEP-implantation, but both factors could not explain the excess mortality after SEP-implantation in multivariate analysis.

**Conclusion:** Patients with rEF had a higher 30-day and 1-year mortality after TF-TAVI when a SEP instead of a BEP was used. Further studies are needed to confirm and explain this finding.

