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## Left atrial appendage closure in patients with a reduced left ventricular ejection fraction: results from the prospective multicenter German LAARGE registry

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**Background and purpose:** Atrial fibrillation (AF) patients with increased thromboembolic risk and contraindications for standard oral anticoagulation (OAC) can profit from an interventional left atrial appendage closure (LAAC). While impaired left ventricular ejection fraction (LVEF) is associated with an increased thromboembolic risk in AF patients, cardiac interventions are often associated with an increase in complications in this patient population, and, therefore, the LAAC procedure's success and benefit has yet to be investigated in this subgroup.

**Methods:** This prospective, observational LAAC registry included 622 patients with documented LVEF from 37 German centers between April 2014 and January 2016. Patients were categorized into one of three groups: LVEF >55% (preserved; p), LVEF 35–55% (mid-range; mr) and LVEF <35% (reduced; r). Procedure was conducted in a standard fashion, and baseline characteristics, imaging as well as procedural data, intra-hospital and one-year follow-up outcome were registered for each group.

**Results:** 55.3% of patients had a pLVEF, 38.7% a mrLVEF and 5.9% a rLVEF. Patients with rLVEF were more often affected by coronary artery disease ( $p < 0.001$  for trend), and had an elevated CHA2DS2-VASc ( $4.3 \pm 1.5$

vs.  $4.8 \pm 1.5$  vs.  $5.3 \pm 1.6$ ;  $p < 0.001$ ) and HAS-BLED score ( $3.7 \pm 1.1$  vs.  $4.1 \pm 1.2$  vs.  $4.3 \pm 0.9$ ;  $p < 0.001$ ). Percentage of prior cerebrovascular events and major bleedings was comparable at baseline (each  $p = n.s.$ ). Procedural success was high (97.9%), while rates of intra-hospital MACCE (0.5%) and other major complications (4.2%) were low, with no significant difference between the groups (each  $p = n.s.$ ). MACCE during follow-up was more frequent in rLVEF patients (11.0 vs. 11.3 vs. 27.8%;  $p = 0.013$ ), which was mainly driven by myocardial infarctions and all-cause deaths in this high risk collective. Likewise, Kaplan-Meier estimation showed a lower overall survival in this group (89.7 vs. 89.3 vs. 74.6%;  $p < 0.01$ ). On the contrary, rates of stroke were extremely low across all groups and statistically similar (0.3 vs. 1.0 vs. 0%;  $p = n.s.$ ). This was 93.4, 82.7 and 100.0% less in comparison to the estimated risk calculated from the CHA2DS2-VASc score

**Conclusions:** The LVEF had no influence on the procedural success as well as the intra-hospital complications after LAAC. Annual rate of stroke was low across all groups, and risk reduction was substantial especially in this high risk collective, as compared to the estimated risk.