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PROPENSITY-SCORE ADJUSTED COMPARISON OF EVOLUT VS. PORTICO DEVICES FOR TRANSCATHETER AORTIC VALVE IMPLANTATION

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Aim: Transcatheter aortic valve implantation (TAVI) has become an established treatment for severe aortic stenosis, thanks to key improvements achieved by new-generation devices. Their comparative effectiveness and safety is however still uncertain.

Methods: We queried a prospective registry on TAVI to compare Evolut and Portico, focusing on procedural, in-hospital and mid-term outcomes. Unadjusted and propensity-adjusted analyses were carried out.

Results: A total of 233 patients were included, 119 (51.1%) receiving Evolut and 114 (48.9%) Portico. Several differences in baseline and procedural features were evident, including comorbidities, device size and post-dilation (all $p<0.05$). Unadjusted analysis for procedural results showed significant differences in fluoroscopy time, left ventricular ejection fraction and aortic regurgitation (all $p<0.05$), whereas device and procedural success rates were not significantly different (both $p>0.05$). In-hospital outcomes were not significantly different (all $p>0.05$). Survival analysis for mid-term follow-up (6±7 months) outcomes showed no significant differences in death, stroke, myocardial infarction, major vascular complication or major bleeding (all $p>0.05$). Conversely, Evolut appeared to be associated with lower peak and mean aortic gradients (both $p<0.05$), but higher rate of permanent pacemaker implantation ($p=0.043$). Propensity-score adjusted analysis largely confirmed the similar performance of the two devices, including peak and mean aortic gradients (both $p>0.05$). However, Evolut continued to be associated even at adjusted analysis with an increased risk of pacemaker implantation ($p=0.018$).

Conclusion: The acute and mid-term comparative safety and effectiveness of Evolut and Portico in experienced hands are similar, with the notable exception of a lower risk of permanent pacemaker implantation with Portico.

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