Reproducibility of a Standardized Ablation Index Workflow for the Treatment of Paroxysmal Atrial Fibrillation: The VISTAX Trial

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Introduction: A standardized approach to pulmonary vein isolation (PVI) using contiguous lesions and tailored Ablation Index (AI) targets (‘CLOSE’ protocol) has been associated with high success rates in recent single-center reports. The reproducibility of the CLOSE protocol, and its impact on efficiency, safety, and effectiveness in paroxysmal atrial fibrillation (PAF) was evaluated in the VISTAX study.

Methods: 284 patients with PAF (61.3±10.1 years; 61.5% male; mean left atrial diameter 39.1±5.1mm) underwent CLOSE-PVI in 17 European centers. All patients underwent PV encircling using a contact force-sensing catheter with an inter-tag distance (ITD) ≤6mm and AI values of ≥400 on the posterior wall and ≥550 on the anterior wall. Following a wait of 30 minutes post-PVI, all patients underwent adenosine testing to unmask latent conduction. Each CARTO map was then exported to a core reference lab, where adherence to the CLOSE protocol was adjudicated.

Result: General anesthesia was used in 83.8% of patients and steerable sheaths in 39%. PVI was successful in 99.3% of patients at the end of procedure. First-pass isolation was seen in 85.3% of patients, and adenosine-proof isolation after 30 minutes waiting period in 84.8% patients. Procedure time was 157.0 ± 37.0 mins (IQR: 131.0,179.5), while fluoroscopy time was 8.1 ± 6.7 min (IQR: 3.5,10.6) and radiofrequency application time was 35.3 ± 11.21 min (IQR: 26.1, 42.2). Primary adverse event rate was 3.5%. There were no atrio-esophageal fistulas, myocardial infarctions, strokes/cerebrovascular accidents, thromboembolisms, pneumothoraces, heart blocks, or pulmonary vein stenosis.

Conclusion: ‘CLOSE’-guided PVI is reproducible across different centers and is associated with short and predictable procedure and fluoroscopy times, and high rates of safe acutely durable PV isolation.