Background: Detailed device-generated data that is stored by an ablation mapping system may be a valuable adjunctive training tool.

Objective: To assess whether procedural data from a cloud-based smart storage and data analytics system reflects differences between procedures involving fellows at different training stages.

Methods: Data from atrial ablations involving a fellow in the first 3 months of year 1 (Y1) or year 2 (Y2) of an EP fellowship program were compared. Lesions were prospectively tagged as being delivered by the fellow or supervising operator.

Results: Prior to the study, Y2 had participated in more AF ablation procedures (84 ± 60 vs. 5 ± 56, p = 0.038). Pulmonary vein isolation (PVI) and bidirectional cavotricuspid isthmus (CTI) block were achieved in all 59 study procedures in which they were targeted (27 Y1; 32 Y2). Mean contact force, catheter stability, ablation index and time between consecutive lesions were similar between Y2 vs. Y1. Y2 independently performed all left PV lesions (43% vs. 16%, p = 0.041), CTI lesions (89% vs. 56%, p = 0.029), and combined PV and CTI lesions (36% vs 12%, p = 0.0377) more frequently than Y1. Within 3 months, each Y1 had completed a full lesion set in at least one PV and each Y2 had completed a full set of PVI and CTI lesions. There was 1 vascular access complication (Y2).

Conclusion: Analysis of procedural data from a cloud-based smart storage system demonstrates that under careful supervision, procedural parameters at a lesion level, attainment of clinical endpoints and procedural safety are not affected by level of experience of trainee involved. Procedural data demonstrates increasing independence with progression through a fellowship program. This data may prove to be a valuable adjunct to training, providing objective monitoring and feedback for technical skill development.

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**HP-573-02**

ASSOCIATION OF AGE WITH PROCEDURAL COMPLICATIONS AND IN-HOSPITAL OUTCOMES FROM LEFT ATRIAL APPENDAGE OCCLUSION DEVICE IMPLANTATION IN PATIENTS WITH ATRIAL FIBRILLATION

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Background: Age stratified analyses of atrial fibrillation (AF) patients undergoing percutaneous left atrial appendage occlusion (LAAO) are limited.

Objective: To compare in-hospital outcomes in elderly AF patients (age > 80 years) to a relatively younger cohort (age ≤ 80 years) after LAAO using a national US database.

Methods: Data were extracted from National Inpatient Sample for calendar years 2015-2018. LAAO device implantations were identified on the basis of International Classification of Diseases, 9th and 10th Revision, Clinical Modification codes of 37.90 and 02L73DK. The outcomes assessed in our study included complications, inpatient mortality and resource utilization with LAAO.

Results: A total of 36,065 LAAO recipients were included in the final analysis and approximately 35% (12,475) of such implantations occurred in elderly AF patients. Elderly AF patients had a higher prevalence of major complications (6.7% vs. 5.7%, p = 0.01) and mortality (0.4% vs. 0.1%, p = 0.01) after LAAO device implantation in the crude analysis. After multivariate adjustment of potential confounders, age ≥ 80 years was associated with inpatient mortality (adjusted odds ratio [aOR] 4.393, 95% confidence interval [CI] 2.391-8.239) but not with major complications (aOR 1.084, 95% CI 0.971-1.211), prolonged length of stay (aOR 0.943, 95% CI 0.88-1.101) and increased hospitalization costs (aOR 0.909, 95% CI 0.865-0.955).

Conclusion: A significant proportion of LAAO device implantations occurred in elderly AF patients. Advanced age was associated with inpatient mortality but did not predict other LAAO procedural related outcomes of major complications, prolonged length of stay and increased hospitalization costs.