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Introduction: Modern electroanatomic mapping systems have automated lesion marking features that can be chosen by individual operators based on preferences and procedural needs, which may vary by geographical region. We sought to compare tools and lesion delivery parameters used during PAF ablation performed with a new contact force (CF) ablation catheter in Japanese and U.S. centers.

Methods: Procedural data were prospectively collected in clinical cases performed with a new magnetic sensor enabled, contact force ablation catheter within the first 6 months of use at participating centers in Japan and the U.S. Use of bidirectional CF catheters, steerable sheaths, automated lesion marking software and associated lesion delivery parameters during PAF ablation were evaluated by country.

Result: A total of 63 cases across 32 Japanese centers, and 94 cases across 27 U.S. centers were analyzed. A bidirectional CF catheter (100% and 91.5%), a steerable sheath (65.1% and 66.0%), and the automated marking (AM) module (84.1% and 92.6%) were used in most Japanese and U.S. cases, respectively. Among cases using AM, the most common lesion delivery parameters chosen included Lesion Index (LSI), Force-Time Integral (FTI), impedance drop, average or maximum force, and time (table). Target LSI values were recorded for 34 cases in Japan and 27 in U.S., ranging from 4-6. In anterior/roof segments, most common LSI target values were 5.0 (41.2%) and 4.0 (26.5%) in Japan, and 5-6 (59.3%) and 6 (22.2%) in the U.S. In posterior/inferior segments, most common LSI targets were 4.5 (38.2%) and 4.0 (26.5%) in Japan, and 5 (37.0%) and 4-5 (25.9%) in the U.S. Average CF target values were recorded for 30 U.S. cases, ranging from 5-15 g, most commonly 10 g in both anterior/roof (93.3%), and posterior/inferior segments (64.3%).

Conclusion: Use of bidirectional catheters, steerable sheaths, and automated lesion marking were common in both Japanese and U.S. experiences with new CF catheters. However, the most commonly used lesion delivery parameters varied considerably by geography, with LSI and FTI chosen most commonly in Japan, and LSI and average CF chosen most commonly in the U.S.