EMBARGOED UNITL 20th NOVEMBER 2022 1730HRS SGT

Catheter ablation for atrial fibrillation – new approaches and technology to attain more durable pulmonary vein isolation (PVI)

Context:

Catheter ablation is an established treatment option in patients with symptomatic atrial fibrillation (AF) who either failed at least one anti-arrhythmic drug or prefer upfront ablation. Current modalities include radiofrequency ablation (RFA) and cryoablation but 1- year freedom from AF remains 70-80% for those with paroxysmal AF and 50-60% for those with persistent AF. In addition, there are concerns on risk of collateral tissue damage such as pulmonary vein (PV) stenosis, phrenic nerve injury and atrioesophageal fistula which can be catastrophic to patients. Heavy research is ongoing on newer approaches to ablation using existing energy modality as well as development of newer technologies to provide more durable pulmonary vein isolation (PVI).

Summary:

In this symposium, the various speakers touch on ways to improve AF ablation outcomes.

One such approach is by adopting the high-power short duration (HPSD) ablation approach. Definition of HPSD shows some significant variability in the literature but suggests the use of at least 50W of ablation generator power output for 4 – 10 seconds per lesion. HPSD has been shown to improve surface size, but limit depth of ablation lesion driven mainly by resistive heating mechanism. It has been shown to have higher first pass isolation, lower risk of complications as well as lower procedural and radiofrequency time.

Secondly, there has also been innovation in ablation catheters to improve delivery of RFA energy to attain the optimal ablation lesion. One such example is the novel flex tip catheter (TactiFlex TM SE) which has a mesh tip that allows for more effective electrode tip cooling and consequently lowers the risk of char and steam pop.

Pulsed field ablation (PFA) has attained significant interest given myocardial tissue selectivity with no risk of PV stenosis, phrenic nerve injury and atrioesophageal fistula reported thus far. PFA was able to achieve 100% pulmonary vein isolation (PVI) acutely but durability of PVI at 3 months remapping study was 84.5% with the optimised energy cohort. Ongoing clinical trials on PFA such as the ADVENT, BEAT AF and ADVANTAGE looking at use of PFA in a mix of paroxysmal and persistent AF patients will inform us further on the efficacy and safety of PFA in AF ablation.

Message:

Dr Vivek Reddy MD, Mount Sinai Medical Centre, New York, United States of America (USA) stated that “Initial data on PFA is quite promising with good procedural performance and early safety outcome although we should await ongoing US FDA trials to draw robust conclusions”.

Session details:

Symposium 7 – Atrial Fibrillation 2 – New Ablation Technologies: 19th November 2022 10.30 – 11.40AM SGT

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