

Conclusions: This prospective randomized study shows that when utilizing a power of 40 Watts a lower PVs reconnection is shown at follow-up. In nearly 30% of paroxysmal AF pts, despite permanent PVs isolation at repeat procedure, arrhythmia recurrence due to non PV triggers was shown

2808 | BEDSIDE

Ganglionated plexi ablation vs linear ablation in patients undergoing pulmonary vein isolation for persistent/longstanding persistent atrial fibrillation: a randomized comparison

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Introduction: The optimal ablation technique for persistent and longstanding persistent Atrial Fibrillation (AF) is unclear. Both Linear Lesions (LL) and Ganglionated Plexi (GP) ablation have been used, in addition to Pulmonary Vein Isolation (PVI), but no direct comparison of the two methods exists.

Methods: Two hundred sixty four consecutive patients with persistent/longstanding persistent AF were randomly assigned to 2 different ablation schemes: PVI+LL (n=132) and PVI+GP ablation (n=132). Consistent Sinus Rhythm (SR) off antiarrhythmic drug was assessed after follow-up of at least 3 years with the use of an implanted monitoring device (IMD).

Results: All procedural endpoints were acutely achieved. At 12 months following a single procedure, 47% of patients treated with PVI+LL were in SR compared to 54% of patients treated with PVI+GP (p=0.29). At 3 years, 34% of patients with PVI+LL and 49% of patients with PVI+GP maintained SR (p=0.035). Atrial flutter was more frequent in PVI+LL than in PVI+GP ablation group (18% versus 6%, P=0.002). After a second procedure in 78 patients of the PVI+LL group and 55 patients of the PVI+GP group, the long-term overall success rate was 52% and 68%, respectively (p=0.006).

Conclusions: PVI+GP ablation confers superior clinical results with less ablation-related left atrial flutter and reduced AF recurrence compared to PVI+LL at 3 years of follow-up.

2809 | BENCH

Cerebral magnetic resonance imaging (dMRI) pre and 24 hour after catheter ablation of AF under therapeutic warfarin: prevalence of silent thromboembolic lesion from a multicenter study

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Introduction: Silent thromboembolic lesion (STL) as detected by diffusion cerebral magnetic resonance imaging (dMRI) following catheter ablation of atrial fibrillation (AF) with open irrigated radiofrequency energy (RF) has been reported in 14% of the cases while performing the procedure with warfarin discontinuation. We sought to determine the prevalence of STL while performing AF ablation without warfarin discontinuation with open irrigated RF energy.

Methods: Consecutive patients undergoing RF ablation for AF with "therapeutic" warfarin and undergoing heparin bolus before transeptal were included in this prospective multicenter study. All patients underwent pre-ablation and post-ablation (within 24 hours) dMRI. All patients had to maintain ACT above 300 secs during the entire procedure. During the ablation if sinus rhythm could not be achieved, electrical cardioversion was utilized to restore sinus rhythm.

Results: 146 patients (62±9 years, 74% male, paroxysmal 25%, persistent 30%, long-standing persistent 45%, CHADS₂ ≥2 11%) were included. The mean INR was 2.5±0.3. Pre and post-procedural dMRI was obtained in all cases. Sinus rhythm was restored with cardioversion in 35 pts (24%) of the cases. The incidence of post-ablation STL was 2.1% in overall population. When sorting the results by AF type we found that it was 0% (0/37) in paroxysmal patients, 0% in PER pts (0/43) and 4.5% in LSP pts (3/66).

At multivariable analysis cardioversion did not show prognostic association with STL (odds ratio 1.9 (0.30 to 13.11), p=.48). All pts with STL had a single brain lesion less < 5 mm.

Conclusion: This study shows that if catheter ablation of AF is performed under "therapeutic" warfarin the risk of STL is limited to patients with LSP where extensive ablation was performed. In addition lesions were small and did not correlate with cardioversion.

2810 | BEDSIDE

Anatomical characteristics of mitral isthmus requiring ablation inside the coronary sinus for creation of complete linear block in patients with atrial fibrillation

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Background: Radiofrequency energy delivery inside the coronary sinus (CS) is

often required to achieve complete linear block at the mitral isthmus (MI). The purpose of this study is to elucidate the morphologic characteristics of the MI which may need ablating inside the CS.

Method and results: Ninety-eight consecutive patients (mean age 64±11, 74 male [76%], 51 persistent AF [52%]) who underwent the first linear ablation at the MI during catheter ablation for AF/AT were enrolled in the study. All patients underwent 64-slice MDCT scanning prior to the procedure and its anatomical features of the MI were analyzed.

Complete block along the mitral isthmus was achieved in 85 (87%) patients, of which 45 (53%) patients required radiofrequency ablation inside the CS (Group CS), and RF application was not required in the other 40 (47%) patients (Group Non-CS). There were no significant differences in the MI length, isthmus depth, CS diameter, CS cross-sectional area, and the distance between the CS and the MI. However, group CS patients were more likely to have interposed circumflex artery between the CS and the MI (40% vs. 18% p=0.02).

Conclusion: Interposition of the circumflex artery between the MI and the CS is associated with a higher probability of requiring ablation inside the CS to achieve complete mitral isthmus block.

HEART FAILURE: THE BIOMARKER BOOM

2819 | BENCH

Involvement of BAG3 and HSPB7 loci in various etiologies of systolic heart failure: results of a European collaboration assembling more than 2,000 patients

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Background and purpose: Genetic background of multifactorial systolic heart failure (systHF) is still poorly understood. However, through a recent genome wide association study we have identified two loci significantly associated with sporadic Dilated Cardiomyopathy (DCM): BAG3 and HSPB7 loci. We further studied these two loci and hypothesized (1) that the loci could also be involved in systHF due to coronary artery disease (CAD) and (2) that the loci could be involved in the severity of systHF and not only in the susceptibility to develop HF.

Methods: We genotyped polymorphisms (SNPs) previously associated with DCM (rs2234962 for BAG3 locus, rs10927875 and rs945417 for HSPB7 locus) in a European population of 1160 patients with systHF due to CAD (ischemic-HF) and 1322 controls. The severity of systHF (assessed by left ventricle ejection fraction or LVEF, LV end diastolic diameter or LVEDD, age and NYHA dyspnea at inclusion) was also compared according to the SNPs in the cohort of ischemic-HF patients as well as in a European cohort of 1141 patients with DCM.

Results: We observed that SNPs related to HSPB7 locus were significantly associated with ischemic-HF (MAF of rs10927875 and rs945417 were less frequent in patients than controls, adjusted p value 0.0017 and 0.0016 respectively) whereas SNP related to BAG3 locus was not. In cohorts of patients with ischemic-HF or DCM, the two loci were not associated with severity of HF, except LVEDD that was significantly associated with rs2234962 (BAG3 locus) both in DCM patients (591 patients with LVEDD available) and ischemic-HF patients (348 patients with LVEDD available) (p=0.0086 and 0.012 respectively).

Conclusions: Out of the two loci previously associated with DCM we observed that HSPB7 locus was also associated with ischemic-HF whereas BAG3 locus was not, suggesting differential involvement according to the underlying cause of HF. Severity of HF was not related to the two loci, except BAG3 locus associated with LV diameter in both populations.

2820 | BEDSIDE

Metabolomics in heart failure as a novel diagnostic tool

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Purpose: Diagnosis and risk stratification of heart failure (HF) is often challenging and predominantly relies on clinical symptoms, imaging techniques and biomarkers such as N-terminal (NT)-pro-B-type-natriuretic-peptide (BNP). The clinical utility of these biomarkers is limited by their lack of specificity for HF and inadequate sensitivity for the detection of early disease stages. We sought to identify and validate novel metabolite biomarkers for three HF subgroups: Dilated (DCM) and ischemic cardiomyopathy (ICM) as well as HF with preserved ejection fraction (HFpEF).

Methods: Metabolite profiling of plasma samples was performed by both un-