lowed the left atrial electrogram recorded within a PV.

Results: Electrical isolation was achieved in 56 of 62 left superior PVs (LSPV, 90%), 59 of 62 right superior PVs (RSPV, 95%), 54 of 60 left inferior PVs (LIPV, 90%) and 14 of 14 right inferior PVs (RIPV, 100%). After isolation, there were residual low-amplitude, low-frequency potentials in 32% of the LSPVs, 16% of the RSPVs, 18% of the LIPVs, and in none of the RIPVs. Among the 48 of 62 patients who had complete isolation of all targeted PVs, there was a residual potential in at least 1 PV in 22 patients (46%). After 55 ± 42 days of follow-up, there was a recurrence of atrial fibrillation in 12 of 31 patients (39%) with and in 10 of 31 patients (32%) without residual potentials (p=0.6). Total duration of RF energy application was 23.1 ± 10.8 and 18.3 ± 6.7minutes in patients with and without residual potentials (p=0.06).

Conclusions: Low-amplitude and low-frequency residual potentials are occasionally observed after PV isolation. These potentials do not predict recurrence of atrial fibrillation. Attempts to ablate these potentials may result in unnecessary applications of RF energy.

9:30 a.m.

885-5 Which Is the Optimal Ablation Endpoint for Pulmonary Vein Disarticulation? Insight From Circumferential Pulmonary Vein Ablation for Atrial Fibrillation

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Background: Current approaches to atrial fibrillation (AF) ablation seek to eliminate critical connections between left atrial substrate and arrhythmogenic pulmonary vein (PV) triggers. PV potentials can be mapped and eliminated with a limited number of lesions, but this approach has limitations due to highly variable PV geometry and muscle fiber distribution.We evaluated the relationship of PV potentials to voltage abatment around PV ostia obtained by circumferential radiofrequency ablation. **Methods:** Circumferential PV ablation using 3D electroanatomical guidance was performed in 251 patients with paroxysmal (n=179) or permanent (n=72) AF. Endpoint for lesion completeness was bipolar electrogram amplitude <0.1 mV inside the circular line. **Results:** Among 980 lesions surrounding individual PVs (n=956) or 2 ipsilateral veins with close openings or common ostium (n=24), 75% were complete. In preablation maps, PV potentials preceded by far-field atrial activity were detected in 401/1146 (35%) near-ostial points. This pattern was mostly observed in superior PVs (superolateral, n=99 [80%]); superoseptal, n=82 [67%]) and less frequently in inferior veins (inferolateral, n=61 [49%]; inferoseptal, n=25 [20%]). In postablation maps, PV potentials were not recorded in any of the complete lesions, whereas they were found in 106 of 270 incomplete lesions. At 10.4±4.5 month follow-up, proportion of PVs with complete lesions was similar between patients with (n=50) and without (n=201) recurrence. **Conclusions:** Absence of discrete electrical activity within circular lesions correlated with PV potential abolition but not with AF recurrence, suggesting that circumferential PV ablation may alter critical pathways, cardiac innervation and other undefined factors to modify AF frequency and physiology beyond PV disarticulation.

9:45 a.m.

885-6 Focal Versus Isolation Ablation of Pulmonary Vein Triggers for Atrial Fibrillation: Short-Term Outcome

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Background: Focal ablation and pulmonary vein(PV) isolation have both been advocated as catheter based procedures that can eliminate PV triggers for paroxysmal atral fibrillation (PAF). Methods: We compared the outcome following focal (n=42 pts) versus PV isolation (n=41 pts) for frequent drug refractory PAF with triggers isolated to PVs. To provide a fair comparison of the two techniques and to decrease the influence of a learning curve on outcome: 1) the results represent our single center experience with only the outcome of a single operator with >30 PAF ablation procedures included; 2) the outcome of the first 10 pts undergoing focal ablation were excluded; and 3) only short-term results were compared (EP lab negative response to isoproterenol and/or cardioversion and 2 month follow up after hospitalization). Only PV with atrial fibrillation triggers documented using multipolar catheter recording techniques were targeted during both types of ablation strategies. All ablation sites for both techniques were documented and tagged using electroanatomic mapping. Results: All patients had frequent (median=daily with range of daily to once/week) symptomatic PAF and had failed a median of 4 drugs. See Table. Conclusions: PV isolation appears to facilitate acute elimination of focal triggers originating from PVs. This beneficial effect appears more marginal at 2 mos for prevention of AF. Both PV isolation and focal trigger ablation can be performed with a low serious complication rate.

Ablation Strategy	Focal Trigger Ablation n=32	PV Isolation n=41
Age(yrs)	50 ± 12	52 ± 12
LA size(cm)	4.3 ± 0.7	4.3 ± 0.6
PAF from PV at end of EP	5/32 (16%)	1/41 (2%)
PAF at 2 mos	10/27 (37%)	8/40 (20%)
PV stenosis, Stroke, tamponade	0	1