Optimal Method and Outcomes of Catheter Ablation of Persistent AF: The STAR AF 2 Trial

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on behalf of the STAR AF 2 Investigators

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Disclosures

- Dr Verma reports having served on advisory boards for and receiving grant support from Bayer, Boehringer Ingelheim, Medtronic, Biosense Webster, and St Jude Medical.
- Dr Betts reports lecture fees and grant support from St Jude Medical.
- Dr Macle reports receiving consulting fees from St Jude Medical, Biosense Webster, Bristol Meyers Squibb, and Pfizer and grant support from St Jude Medical and Biosense Webster.
- Dr Morillo reports receiving consulting fees from Boston Scientific, Medtronic, St Jude Medical, and Boehringer Ingelheim and grant support from Boston Scientific, Biosense Webster, Pfizer, and Merck.
- Dr Sanders reports having served on advisory boards for and receiving grant support and lecture fees from Biosense-Webster, Medtronic, St Jude Medical, Sanofi-Aventis, and Merck; receiving lecture fees and grant support from Biotronik; and receiving grant support from Sorin.
- Drs. Jiang, Chen, Deisenhofer, and Mantovan do not have any disclosures.

Background/Purpose

- Catheter ablation outcomes in persistent atrial fibrillation are not well known (AF), but are likely lower than those of paroxysmal AF
- In order to improve outcomes, guidelines suggest “more extensive ablation” in addition to pulmonary vein isolation (PVI) – but unclear if this helps
- We sought to compare the efficacy of three different AF ablation strategies in patients with persistent AF:

  (1) PVI alone

  (2) PVI plus ablation of complex electrograms

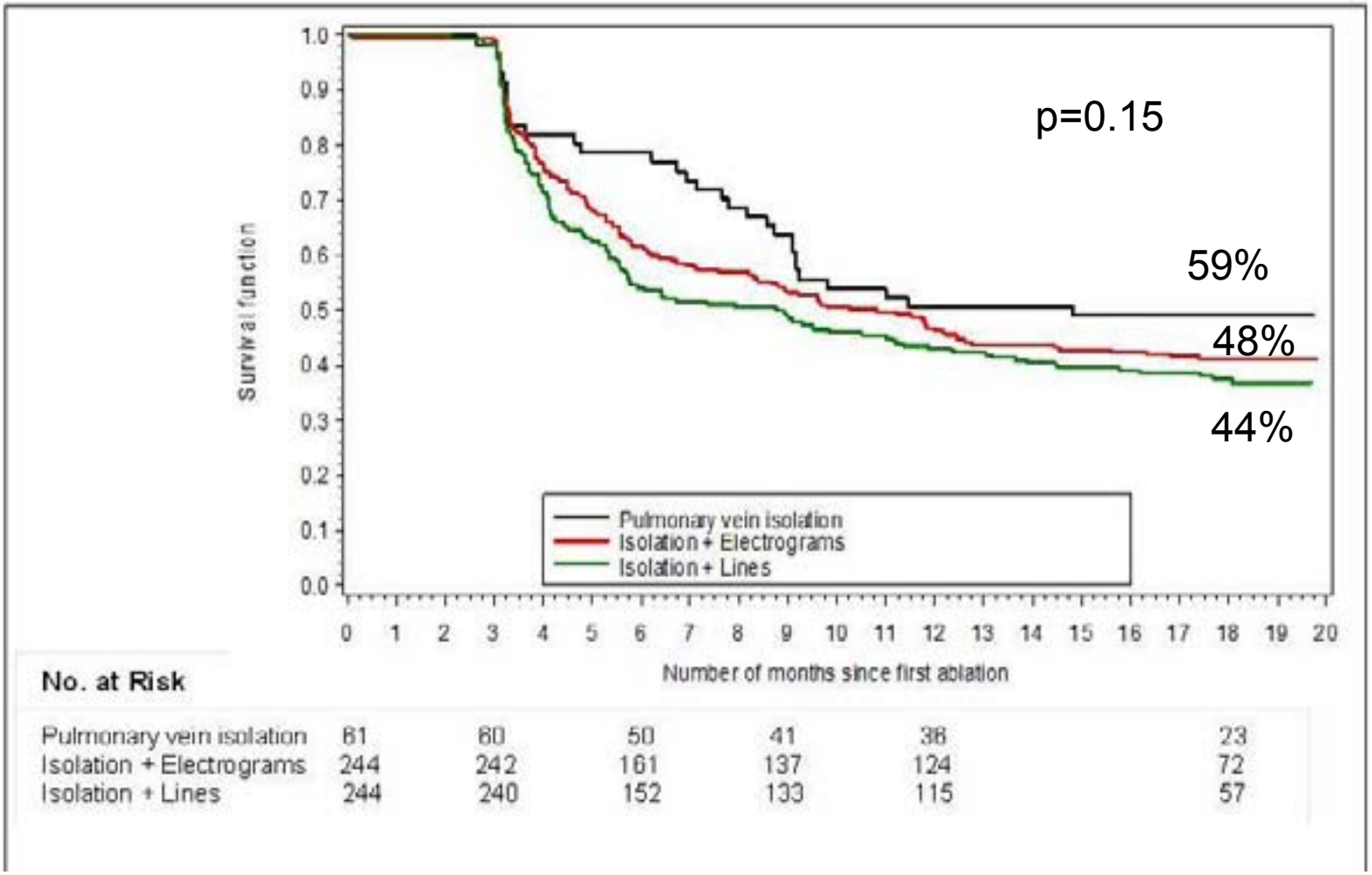
  (3) PVI plus linear ablation

Procedural Characteristics

	PVI	PVI+Electrograms	PVI+Lines	p value
Procedure time (min)	166.95 ± 54.83	229.16 ± 83.20	222.56 ± 89.37	<0.0001
Mapping time (min)	13.89 ± 6.64	18.75 ± 14.01	14.38 ± 7.68	<0.0001
Fluoroscopy time (min)	29.35 ± 16.21	42.11 ± 21.70	40.91 ± 24.97	0.0003

Results - Primary Outcome

Documented AF > 30 seconds after <u>one</u> procedure with or without AAD



No. at Risk

Pulmonary vein isolation	61	60	50	41	36	23
Isolation + Electrograms	244	242	161	137	124	72
Isolation + Lines	244	240	152	133	115	57

Results - Complications

Category	PVI (n=64)	PVI+CFE (n=254)	PVI+Lines (n=250)	Total (n=568)
Access site hematoma	2	0	3	5
Access site arteriovenous fistula or pseudoaneurysm	0	3	3	6
Pericarditis	0	1	2	3
Fluid overload	0	1	3	4
Sedation related complication	0	3	5	8
Skin burn	1	0	0	1
Cardiac tamponade	1	0	2	3
Transient ischemic attack or Stroke	0	2	1	3
Atrial esophageal fistula - procedural death	0	1	0	1

Take Home Points

- Largest randomized trial to examine outcomes of catheter ablation in persistent AF
- PVI alone achieved reasonable success rates
  - comparable to prior published success rates in paroxysmal ("episodic") AF
  - may be an effective strategy for persistent AF
- Additional ablation increased procedural time (and may increase risk) without any additional benefit in AF reduction
  - need to change thinking from guidelines