

Author Year	Study type	Sample size	Ablation technique	Catheter	High power protocol	Low power protocol	Contact Force	Irrigation	Follow-up (months)	Success rate (High vs. Low power)	Ablation time (min) [High vs. Low power]	RF time (min) [High vs. Low power]	Fluoroscopy time (min) [High vs. Low power]	Complications (High vs. Low power)
Yavin et al 2020 ³⁹	Non-randomized prospective	224	PVI +/- additional lines	3.5 mm open irrigated CF sensing	45-50 W / 8 s (posterior), 15 s (ridge & right septum)	20 W/20 s (posterior); 35-40 W/ 30 s (anterior)	10.2 +/- 5 g (HPSD) 12.8 +/- 4.9 g (LPLD)	8 ml/min for < 30 W 17 ml/min for >=30 - 50W	12.4 (HPSD) 22.8 (LPLD)	87.5 % vs 93.8% p = 0.02 acute 79.5 % vs 69.6 % p = 0.09 chronic	41.5 +/- 7.3 vs 63.7 +/- 11.6 (p<0.001)	17.2 (17.5, 14.6-29.2) [†] +/- 31.1 (31, 24.6-70.1) [†] (p<0.001)		Steam pop (0.89% HPSD), phrenic nerve paralysis (0.89% LPLD)
Kottmaier et al 2020 ²⁹	Non-randomized prospective	197	PVI	3.5 mm open irrigated, non-CF sensing	70 W / 5-7 s (N = 97)	30-40 W / 20-40 s (N = 100)	N/A	20 ml/min (HPSD), 17 ml/min (LPLD)	12	83.1% vs. 65.1% (p < 0.001)		12.4 ± 3.4 vs. 35.6 ± 12.1 (p < 0.001)	6.3 ± 3.9 vs. 6 ± 3.8 (p = 0.37)	None
Vasallo et al 2019 ³⁰	Retrospective	76	PVI	3.5 mm open irrigated CF sensing	45-50 W / 6-8 s (N = 41)	30 W / 30 s (N = 35)	8-15 g / 10-20 g (HPSD), 10-30 g (LPLD)	35 ml/min (HPSD), 17 ml/min (LPLD)	6-12	87.8% vs. 74.3% at 6 months (p = 0.23) 82.9% vs. 68.6% at 12 months (p = 0.14)		31.8 ± 11.2 vs. 75.9 ± 33.3 (p < 0.001)	8.8 ± 6.6 vs. 8.5 ± 3.5 (p = 0.22)	None
Winkle et al 2019 ³¹	Retrospective	10,284 pts (13,974 ablations)	PVI	3.5 mm irrigated	45-50 W / 5-12 s / 2-10 s (posterior wall) [N = 11,436 ablations]	35 W / 20 s (N = 2,538 ablations)			In-hospital	Not specified				Atriosophageal fistula (0.0087% vs. 0.12%, p = 0.021), Cardiac tamponade [‡] (0.24%), Stroke [‡] (0.086%), PV stenosis [‡] (0.014%), Phrenic nerve paralysis [‡] (0.014%), Left atrial steam pops [‡] (0.014%)
Baher et al 2018 ³²	Retrospective	687	PVI +/- linear ablations +/- posterior wall debulking	3.5 mm irrigated (CF and non-CF sensing)	50 W / 5 s (N = 574)	≤35 W / 10-30 s (N = 113)	10-20 g		30	58% vs. 59%, p = 0.80	37.9 ± 13.9 vs. 55.0 ± 19.2 (p < 0.001)			Severe esophageal LGE on post-ablation MRI (2.8% vs. 2.7%, p = 0.37), no AEF
Matiello et al 2008 ³³	Non-randomized prospective	221	PVI	8 mm tip (50 W), 3.5 mm open irrigated (30 W, 40 W)	40 W (N = 89) & 50 W (N = 90)	30 W (N = 42)	N/A	16 ml/min	12	53% (50 W) vs. 55% (40 W) vs. 35% (30 W), p = 0.03				Cardiac tamponade (0.56% vs. 0%), TIA (1.7% vs. 2.4%), p = NS
Kanj et al 2007 ³⁴	Randomized controlled trial	180	PVI	8 mm tip (70 W), 3.5 mm open irrigated (50 W, 35 W)	50 W (N = 61) & 70 W (N = 59)	35 W (N = 60)	N/A	17-30 ml/min	6	78% (70 W) vs. 82% (50 W) vs. 68% (35 W), p = 0.043			46 ± 2 (70 W) vs. 28 ± 1 (50 W) vs. 53 ± 2 (35 W), p < 0.05	Pericardial effusion (20%), Esophageal erythema (6.6%), TIA (1.6%) – All in the 50 W group.
Nilsson et al 2006 ³⁵	Non-randomized prospective	90	PVI (segmental)	5 mm open irrigated	45 W / 20 s (N = 45)	30 W / 120 s (N = 45)	N/A		15 ± 7 [§]	76% vs. 74%, p = NS	94 ± 33 vs. 127 ± 57 (p < 0.01)	19 ± 14, 36 ± 17 (p < 0.001)	55 ± 16, 73 ± 23 (p < 0.001)	TIA (2.2% vs. 2.2%), p = NS
Yamada et al 2005 ³⁶	Non-randomized prospective	108	PVI (segmental)	8 mm tip (40 W), 4 mm tip (30 W)	40 W / 60 s (N = 61)	30 W / 60 s (N = 47)	N/A		6	68% vs. 53%, p = 0.14			71 ± 26 vs. 104 ± 38 (p < 0.001)	None
Mansour et al 2004 ³⁷	Non-randomized prospective	80	PVI (segmental and circumferential)		50 W / 12-15 s with circumferential PVI (N = 40)	25-30 W / 30 s with segmental PVI (N = 40)	N/A		11 ± 2.5 [§] (circumferential 150 W) & 21 ± 4.7 [§] (segmental 25-30 W)	75% vs. 60%, p = 0.15		71.4 ± 26.6 vs. 44.0 ± 26.9 (p = 0.01)	14.4 ± 4.5 vs. 16.4 ± 4.2, p = NS	Cardiac tamponade (2.5% vs. 5%), stroke (2.5% vs. 2.5%), p = NS
Haissaguerre et al 2000 ³⁸	Non-randomized prospective	90	PVI (segmental)	4 mm tip	45-50 W (N = 35)	25-30 W (N = 55)	N/A		8 ± 5 [§]	71% [§]				PV stenosis (13.5% vs. 0.63%, p < 0.01)

Abbreviations: AEF, atriosophageal fistula; CF, contact force; HPSD, high power short duration; LGE, late gadolinium enhancement; LPLD, low power long duration; min, minutes; ml/min, milliliters per min; MRI, magnetic resonance imaging; N, sample size; N/A, not applicable; NS, not significant; PV, pulmonary vein; PVI, pulmonary vein isolation; RF, radiofrequency; s, seconds; TIA, transient ischemic attack; W, watt

[†] RF time reported as median and interquartile range

[‡] Reported only for overall population, not separately in the high and low power groups, except for AEF as listed above

[§] Expressed as mean \pm standard deviation (in months)

^{*} Only overall success rate reported. No data available for high power vs. low power group

Table 1: Studies comparing high power ablation strategies to low power ablation strategies for atrial fibrillation (AF) ablation