

**Supplementary Table S1:** Cohorts reporting on superior vena cava isolation in patients with atrial fibrillation

Author	Energy source	N	Index	Previous Source	AF type	SVC-trigger	Female (%)	Age	HF (%)	FU	Recurrence (%)	Safety	Feasibility	SVCI Procedural data
<b>CPVI+ as needed SVCI</b>														
Tsai et al 2000 Taiwan	RF (CPVI +SVCI)	8	Yes	N/A	PAF	yes (8)	50	55 ± 12	N/R	9±3 mo	(0/8)	0 SVCS	75% (6/8) 2 partly eliminated	mean RF apps: 5±3
Arruda et al 2008 USA	RF	24	Yes	N/A	PAF, PeAF	yes	N/R	N/R	N/R	450 ± 180 d	0	0 SVCS 0 SNI	N/R	N/R
Chen et al 2011 China	RF, CPVI + additional linear ablation (MAI, CTI, roof line & CS) ± SVCI	132	Yes	N/A	AF or atypical Flutter	35/132	50 (3/6)	N/R	excluded	N/R	N/R	6/132 SNI	N/R	N/R
Miyazaki et al 2014 Japan	RF (CPVI ± SVCI)± CFAEs/CTI	836 44/792	Yes	N/A	PAF, PeAF	yes	30 vs. 24	59 ± 11 vs.63 ± 10	N/R	17 mo (9-27)	11.4 1.5 ± 0.7 procedures	2 PNI (t)	100	N/R
Shi et al 2015 China	RF (CPVI+SVCI)± LA bottom line, MAI, CTI	30	Yes	N/A	PAF	yes	40	59 ± 16	N/R	18 ± 6 mo	6.6 (2) ER 3.3(1) LR	0 PNI 0 SNI 0 tamponade	70%	mean SVCIT (min): 14.3 ± 11.5 mean SVCI FT (min): 9.6 ± 3.8 mean RF apps: 11.2 ± 3.1
Xu et al 2017 China	RF (CPVI± CFAE,LA roof, AT ablation)±SVCI	102	Yes	N/A	PeAF	1/102	37	63 ± 9	8	12 mo	56.9	Zero	N/R	mean PT (min): 166±22 mean FT (min): 17±3
Tanaka et al 2018 Japan	RF [CPVI±Linear ablations (LA roof± bottom ± MAI)]±CTI	113	Yes	N/A	PAF, PeAF	38.1 % (43/113)	28	63 ±12	7	N/R	N/R	2 PNI 0SNI	N/R	mean SVC mapping: 10.8±5.5 min mean RF app: 4.2±0.9 vs.. 10.2±2.8; p<0.0001 mean RF energy (J) 5,042±1,581 vs.. 10,582±2,335, p<0.000 mean SVCIT (min) 3.3±1.2 vs.. 10.2±2.8 p<0.0001

[illegible]

Arruda et al 2008 USA	RF	217	Yes	N/A	PAF, PeAF	No	N/R	N/R	N/R	450 ± 180 d	N/R	0 SVCS 0 SNI 2 PNI (t)	82% 40 patients (18%) PNI at risk	N/R
Gianni et al 2017 Italy	RF CPVI+ SVCI	105	Yes or redo	N/A	PAF, PeAF	No	18	67 ± 9	N/R	9 ± 6mo	N/R	2 PNI 0 SNI	98% (2 obviating PNI)	Mean PT (min): 125± 37 Median SVCI RF time (sec) : 134 (89–203)
Arceluz et al 2018 Spain	LB (CPVI±SVCI)	13	Yes	N/A	PAF, PeAF	No	15	59 ± 11	30.7	19 ± 3 mo	15	3 PNI (p) (23%)	61% (8/13) (3 PNI 1 laser malfunction 1 lead failure)	mean SVCI power (W) : 6.3 ± 2.3 mean SVCIT (min): 5.38 ± 2.4
Rubio Campal et al 2020 Spain	CB (PVI+SVCI)	30	yes or redo	N/A	PAF, PeAF	No	26	62 ± 9	N/R	5 ± 2 mo	11	1 PNI (t) 1 SNI (t) 0 SVCS	89% (2 no SVC potential)	mean cryo time (sec): 92 ± 15 Mean no of freeze: 2.3 ± 1 Mean SVCIT (sec): 37 ± 20 mean FT (min); PV 17 ± 2 mean FT (min); SVC 1.5 ± 0.9
Omuro et al 2021 Japan	RF (CPVI+ SVCI vs. CPVI)	153 102/51	Yes	N/A	NPAF	No	22	65 ± 10	26.1	18 mo	N/R	0 vs. 1 vascular 0 PNI	100%	N/R
Gu et al 2021 China	RF( non-PV foci, SVCI, CFAE, linear ablation)	64	redo	RF PVI	PAF, PeAF	no	45	61 ± 11	N/R	20 ± 10 mo	21 vs. 50 independent protector (HR: 0.338; 95% CI: 0.131–0.873; p = 0.025)	N/R	N/R	N/R
<b>Mixed modalities and index procedures</b>														
Kimura et al 2012 Japan	RF (CPVI± linear, CFAE)	41	Yes or redo	N/R	PAF, PeAF	(yes if index, no in redo)	19	59 ± 9	N/R	12 ± 7 mo	12.2	1 PNI (t)	100%	mean RF (sec): 365 ± 204 No of SVCI app times: 12 ± 6 mean RF power 20± 5 W
Fukumoto et al 2014 Japan	RF (CPVI + SVCI)	25	yes or redo	N/R	PAF, PeAF	yes (13) empiric (12)	24	57 ± 9	N/R	619 ± 5d	4 (1/25)	1 PNI (t)	100%	Mean RF apps: 10 ± 6.5

N=study population, Index= first ablation procedure, redo= repeat ablation procedure due to arrhythmia recurrence, AF=atrial fibrillation, SVC=superior vena cava, HF=heart failure, FU= follow up period, SCVI= SVC isolation, RF= radiofrequency, CB= cryoablation, LB= laser ablation, CPVI= circumferential pulmonary vein isolation, CTI= cavotricuspid isthmus, MAI= mitral annulus isthmus, CFAE=complex fractionated atrial electrograms, CMAPs= compound motor action potentials, PAF=paroxysmal AF, PeAF= persistent AF, L-PeAF= long standing PeAF, mo= months, h=hours, NS= non-significant, ER= early arrhythmia recurrence, LR= late arrhythmia recurrence, PNI=phrenic nerve injury, SNI= sinus node injury, PVS.= pulmonary vein stenosis, SCVS.= SVC stenosis, (p)=permanent, (t)= transient, SVCIT= SVC isolation time, app=application, FT= fluoroscopy time, PT= procedure time, AT=ablation time, min= minutes, N/A= not applicable, N/R= not reported.