

SWISS STATISTICS OF CATHETER ABLATIONS

2023



Schweizerische Stiftung für Rhythmologie
Fondation Suisse de Rythmologie
Fondazione Svizzera di Ritmologia

Overview

Ablation centers	33
Included in this statistic	29
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Number of patients	9765
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Number of interventions*	10194
thereof number of EPS	434
Number of ablations	11416

** All completely recorded and non-aborted interventions are evaluated.*

Ablation Centers

Clinic No.	Center	Interventions/ thereof incomplete	thereof aborted	Ablations*
101	Universitätsspital Basel	1073 / 0 (0%)	0	1054
102	Inselspital Bern	1419 / 0 (0%)	1	1499
103	Hôpital Cantonal Universitaire de Genève	362 / 0 (0%)	0	398
104	Centre Hospitalier Universitaire Vaudois (CHUV)	448 / 2 (0%)	0	455
105	Universitätsspital Zürich	543 / 0 (0%)	4	497
106	Universitäts-Kinderkliniken Zürich	52 / 0 (0%)	0	37
201	Kantonsspital Aarau	203 / 0 (0%)	6	165
202	Kantonsspital Baden	144 / 0 (0%)	0	136
209	Kantonsspital Graubünden, Chur	7 / 0 (0%)	1	6
211	Hôpital Fribourgeois	219 / 0 (0%)	0	230
214	HerzZentrum & Rhythmologie Hirslanden, Zürich	414 / 0 (0%)	0	571
216	Istituto Cardiocentro Ticino	263 / 0 (0%)	1	289
217	Kantonsspital Luzern, Sursee und Wolhusen	394 / 3 (1%)	3	421
218	Klinik St. Anna, Luzern	359 / 0 (0%)	0	396
220	Hôpital de la Tour	297 / 0 (0%)	0	315
228	Hôpital de Sion	68 / 0 (0%)	0	64
230	Solothurner Spitäler AG	261 / 0 (0%)	2	245
231	Kantonsspital St. Gallen	481 / 0 (0%)	0	497
233	GZO Spital Wetzikon	206 / 0 (0%)	0	201
234	Kantonsspital Winterthur	200 / 0 (0%)	0	259
236	Stadtspital Triemli, Zürich	497 / 0 (0%)	1	528
239	Klinik Beau-Site Bern	495 / 0 (0%)	3	476
241	HerzKlinik Hirslanden, Zürich	323 / 0 (0%)	0	324
246	Hirslandenklinik Aarau	265 / 0 (0%)	2	253
250	Klinik Im Park, Zürich	654 / 0 (0%)	9	878
267	Clinique Cécil	382 / 0 (0%)	0	424
278	Centre de Cardiologie du Valais	74 / 0 (0%)	0	65
284	Clinique de Genolier	121 / 0 (0%)	0	110
292	HerzKlinik Kreuzlingen	8 / 0 (0%)	0	7
Total	29	10232 / 5 (0%)	33	10800

* Only ablations of completely recorded and non-aborted interventions are evaluated.

Omissions

4 centers that did not report data to SwissEPnet and are therefore not included in the statistics

No.	Center
251	Herzzentrum Bodensee, Kreuzlingen
268	Clinique des Grangettes
287	HerzGefässKlinik Bethanien
288	Herz&Rhythmus Zentrum
Total	4

Ablation centers

18 centers with more than 250 interventions

Interventions and Ablations

according to number of interventions

No.	Center	Interventions	thereof aborted	Ablations
102	Inselspital Bern	1419	1	1499
101	Universitätsspital Basel	1073	0	1054
250	Klinik Im Park, Zürich	654	9	878
105	Universitätsspital Zürich	543	4	497
236	Stadtspital Triemli, Zürich	497	1	528
239	Klinik Beau-Site Bern	495	3	476
231	Kantonsspital St. Gallen	481	0	497
104	Centre Hospitalier Universitaire Vaudois (CHUV)	446	0	455
214	HerzZentrum & Rhythmologie Hirslanden, Zürich	414	0	571
217	Kantonsspital Luzern, Sursee und Wolhusen	391	3	421
267	Clinique Cécil	382	0	424
103	Hôpital Cantonal Universitaire de Genève	362	0	398
218	Klinik St. Anna, Luzern	359	0	396
241	HerzKlinik Hirslanden, Zürich	323	0	324
220	Hôpital de la Tour	297	0	315
246	Hirslandenklinik Aarau	265	2	253
216	Istituto Cardiocentro Ticino	263	1	289
230	Solothurner Spitäler AG	261	2	245
Total	18	8925	26	9520

Ablation Procedures

according to number of interventions

No.	Center	AF	RAFlu	LAFu	AT	AP	AVNRT	VT	PVC	AVN	AVN(R)	CN	Other
102	Inselspital Bern	765	325	90	32	38	142	58	67	20	51	2	3
101	Universitätsspital Basel	606	186	12	22	19	114	49	53	14	41	9	1
250	Klinik Im Park, Zürich	426	285	41	46	13	89	13	18	0	14	0	2
105	Universitätsspital Zürich	211	67	17	21	14	82	44	57	12	10	0	1
236	Stadtspital Triemli, Zürich	269	109	23	16	13	76	7	6	0	32	0	1
239	Klinik Beau-Site Bern	301	90	18	25	9	33	7	15	3	7	0	0
231	Kantonsspital St. Gallen	263	84	9	15	15	78	14	14	0	17	0	0
104	Centre Hospitalier Universitaire Vaudois (CHUV)	155	83	19	18	29	53	47	32	5	26	3	0
214	HerzZentrum & Rhythmologie Hirslanden, Zürich	252	186	15	24	14	41	11	30	4	21	1	4
217	Kantonsspital Luzern, Sursee und Wolhusen	227	87	7	10	7	51	15	13	2	16	0	1
267	Clinique Cécil	197	66	13	15	12	57	3	21	7	40	4	3
103	Hôpital Cantonal Universitaire de Genève	135	116	40	10	14	37	20	13	1	28	0	0
218	Klinik St. Anna, Luzern	226	66	8	6	6	56	1	25	1	6	0	0
241	HerzKlinik Hirslanden, Zürich	170	73	0	4	7	40	1	17	11	1	0	0
220	Hôpital de la Tour	144	59	16	13	18	42	6	14	10	23	1	0
246	Hirslandenklinik Aarau	130	41	3	14	10	46	1	3	6	21	0	0
216	Istituto Cardiocentro Ticino	133	66	8	13	8	33	8	5	3	10	0	2
230	Solothurner Spitäler AG	121	49	1	17	4	33	4	16	3	9	0	0
Total	18	4731	2038	340	321	250	1103	309	419	102	373	20	18

Ablation centers

6 centers with 100 to 250 interventions

Interventions and Ablations

according to number of interventions

No.	Center	Interventions	thereof aborted	Ablations
211	Hôpital Fribourgeois	219	0	230
233	GZO Spital Wetzikon	206	0	201
201	Kantonsspital Aarau	203	6	165
234	Kantonsspital Winterthur	200	0	259
202	Kantonsspital Baden	144	0	136
284	Clinique de Genolier	121	0	110
Total	6	1093	6	1101

Ablation Procedures

according to number of interventions

No.	Center	AF	RAFlu	LAFlu	AT	AP	AVNRT	VT	PVC	AVN	AVN(R)	CN	Other
211	Hôpital Fribourgeois	104	49	1	8	9	45	0	5	11	15	0	0
233	GZO Spital Wetzikon	99	60	2	4	4	27	1	3	1	11	0	1
234	Kantonsspital Winterthur	124	64	20	7	3	26	0	9	7	6	0	0
201	Kantonsspital Aarau	94	24	5	5	3	35	10	12	0	6	0	7
202	Kantonsspital Baden	92	22	5	3	1	32	0	0	0	3	0	0
284	Clinique de Genolier	51	49	1	2	2	8	0	1	1	3	0	0
Total	6	564	268	34	29	22	173	11	30	20	44	0	8

Ablation centers

5 centers with less than 100 interventions

Interventions and Ablations

according to number of interventions

No.	Center	Interventions	thereof aborted	Ablations
278	Centre de Cardiologie du Valais	74	0	65
228	Hôpital de Sion	68	0	64
106	Universitäts-Kinderkliniken Zürich	52	0	37
292	Herzkllinik Kreuzlingen	8	0	7
209	Kantonsspital Graubünden, Chur	7	1	6
Total	5	209	1	179

Ablation procedures

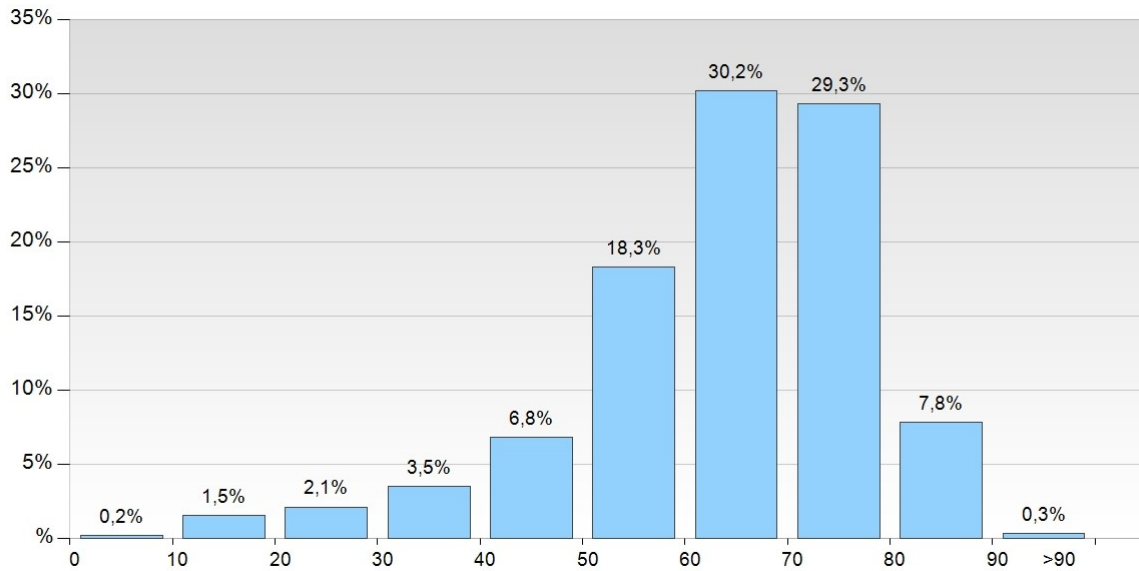
according to number of interventions

No.	Center	AF	RAFlu	LAFlu	AT	AP	AVNRT	VT	PVC	AVN	AVN(R)	CN	Other
278	Centre de Cardiologie du Valais	31	4	0	4	5	9	1	0	0	11	0	0
228	Hôpital de Sion	5	23	1	3	6	28	0	0	3	2	0	0
106	Universitäts-Kinderkliniken Zürich	0	0	0	4	25	10	0	0	0	0	0	1
292	Herzkllinik Kreuzlingen	4	1	0	1	0	1	0	0	0	0	0	0
209	Kantonsspital Graubünden, Chur	4	1	0	0	0	1	0	0	0	0	0	0
Total	5	44	29	1	12	36	49	1	0	3	13	0	1

All ablation types

Number of ablations, not aborted: 11416

Age distribution (years)



Age (years)	min.	Ø	max.
Female	0	64	101
Male	0	64	96
All	0	64	101

Number of patients	n	%
Females	3475	35,59
Males	6290	64,41
Total	9765	

Anesthesia	n	%
Local	7127	69,91
General	3067	30,09
Total	10194	

Combinations of ablations performed during one intervention

Number of interventions		9760
AF		3781
	AVNRT	1138
	RAFlu	1088
AF	RAFlu	926
	PVC	398
	AVN(R)	391
	VT	284
	AP	277
AF		214
	AT	199
AF	LAFIu	121
	AVN	111
	LAFIu	103
	AVNRT	73
AF	LAFIu	72
AF	RAFlu	58
	RAFlu	46
AF	AT	45
	LAFIu	37
AF	AVNRT	36
	AVN(R)	31
	RAFlu	23
	AT	23
	PVC	21
AF	RAFlu	20
	AT	20
	VT	20
	Other	19
	AT	19
	AVNRT	19
	CN	16
	RAFlu	14
	AVNRT	14
	AP	14
AF	RAFlu	14
	AVNRT	14
	AT	13
	VT	10
	PVC	10
AF	LAFIu	9
	AT	9
	LAFIu	9
	AT	7
	AP	6
	AVNRT	6
	AVNRT	5
	PVC	5
	AVN	5
	AVN(R)	5
	RAFlu	4
	AP	4
AF	AP	4
AF	RAFlu	4
	PVC	4
AF	LAFIu	4
AF	AT	3
	AVNRT	3
	AVN	3
AF	CN	3
	AT	3
	AVNRT	3
	Other	3
	RAFlu	3
	PVC	3
AF	AVN	2
AF	AT	2
	RAFlu	2
	AT	2
	AVNRT	2
AF	RAFlu	2
	AVNRT	2
	AT	2
	VT	2
	AT	2
	AVN(R)	2
AF	Other	2
	LAFIu	2
	RAFlu	2
	AT	2
AF	RAFlu	2
	AT	2
AF	AVNRT	2
	PVC	2
	RAFlu	1
	AVNRT	1

AF	RAFIu	PVC	1	
AF	AVNRT	1		
LAFIu	AT	1		
AVNRT	PVC	1		
RAFIu	PVC	1		
RAFIu	AVN	1		
RAFIu	Other	1		
LAFIu	RAFIu	1		
AF	LAFIu	AVNRT	1	
AF	RAFIu	AT	Other	1
AP	AVNRT	1		
AF	RAFIu	CN	1	
AF	LAFIu	AP	1	
AT	AP	1		
LAFIu	RAFIu	VT	1	
AVNRT	Other	1		
LAFIu	PVC	1		
RAFIu	AVN	1		
AF	RAFIu	VT	1	
RAFIu	AVN(R)	1		
RAFIu	AT	1		
AF	LAFIu	AT	1	
AF	RAFIu	AT	1	
AF	AT	PVC	1	
AF	VT	1		
AF	LAFIu	RAFIu	AVNRT	1
AT	PVC	1		
RAFIu	VT	1		
AF	LAFIu	RAFIu	AT	1
LAFIu	RAFIu	AVN	1	
LAFIu	AVNRT	1		
VT	AVN	1		

Only completely documented and non-aborted interventions are counted.

Ablation procedures or EPS

Atrial Fibrillation	5339
Paroxysmal	3464
Persistent	1803
Long-standing Persistent	72

Left Atrial Flutter	375
Roof-dependent	135
Perimitral	180
Peri-Incisional	20
Peri Ostial Pulm. Vein	27
Other	120

Accessory Pathway	308
Concealed	105
WPW	171
Asymptomatic Preexcitation	27
Atrio-Fascicular	0
PJRT	8
Mahaim	2
Other	2

AVN (to Resync.)	125
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AVN (Rate Control)	430
Paroxysmal	82
Persistent	223
Long-standing Persistent	125

Cardioneuro Ablation	20
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Other Arrhythmia	27
PAC	11
JET	7
SNT	1
Other	9

Right Atrial Flutter	2335
Cavotricuspid	2288
Scar Related	59
Other	14

Atrial Tachycardia	362
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AVNRT	1325
Slow-Fast	1217
Fast-Slow	47
Slow-Slow	75

VT	321
Monomorphic	275
Polymorphic	49
RVOT / Cusp / PA	55
Tricuspid Annulus	5
Right Pap Muscle	3
Parahisian	5
BB Reentry	4
LVOT / Cusp	44
Mitral Annulus	45
Fascicular	11
Left Pap Muscle	14
Epicardial LV / RV	26
Other	174

PVC	449
Monomorphic	403
Polymorphic	44
Ischemic	8
RVOT	196
LVOT / Aortic Cusp	152
Left Fascicular VT	11
HP System	19
Other	109

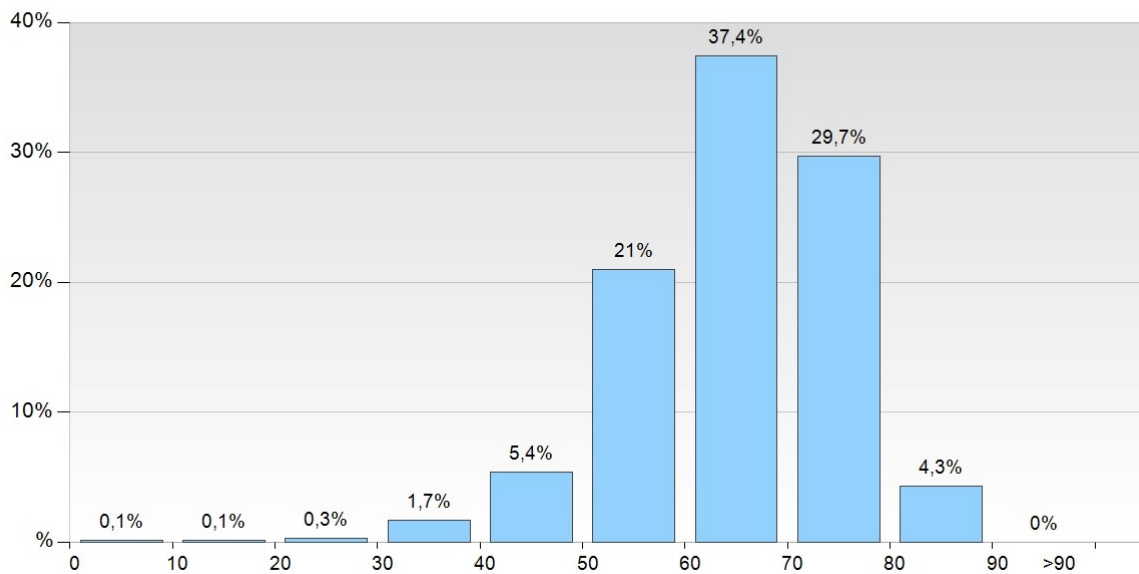
EPS only	434
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Atrial Fibrillation

Ablation of Atrial Fibrillation (AF)	n
All interventions	5339
AF combined with others	1344
AF combined with RAFLa	926
AF only	3781

The following statistics include AF only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	0	68	88
Male	0	64	91
All	0	65	91

Number of patients	n	%
Females	1205	32,51
Males	2502	67,49
Total	3707	

Atrial Fibrillation

Cardiopathy (Underlying heart disease)	n	%
None	2188	57,87
Hypertensive Cardiomyopathy	523	13,83
Ischemic	327	8,65
Tachycardiomyopathy	312	8,25
Valvular	151	3,99
Dilated	137	3,62
H(O)CM	63	1,67
Other	38	1,01
Congenital	16	0,42
Post Valvular Surgery	9	0,24
Infiltrative	7	0,19
Brugada Syndrome	4	0,11
CABG	3	0,08
Channelopathy long QT	1	0,03
Angioplasty	1	0,03
RV Cardiomyopathy	1	0,03
Channelopathy short QT	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
Post Congenital Surgery	0	0
Total	3781	

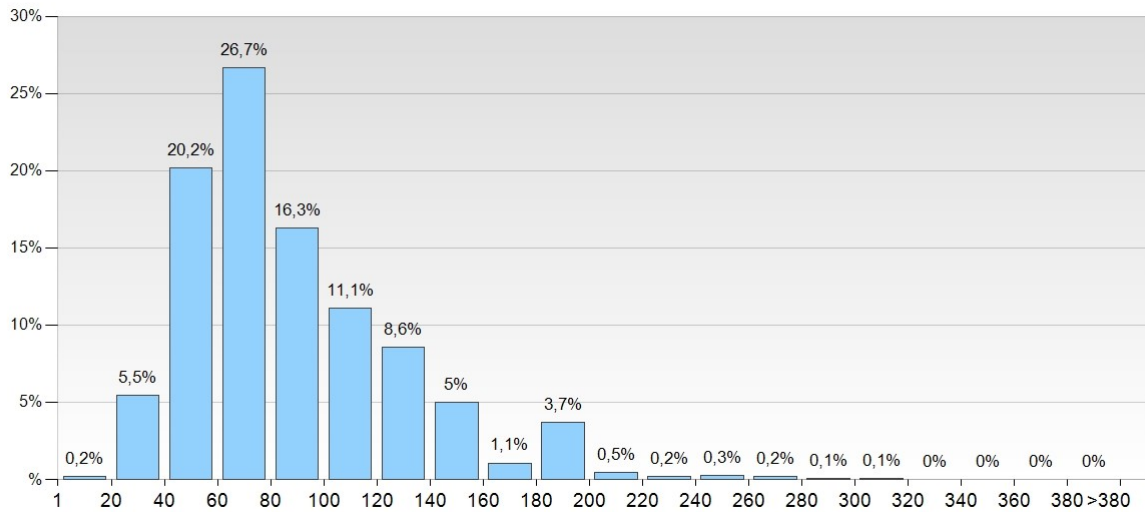
Symptoms	n
Palpitations	3085
Dyspnea	1064
Fatigue	647
Dizziness	313
Other	187
None	186
Syncope	73
Angina Pectoris	47
SCD	4

Atrial Fibrillation

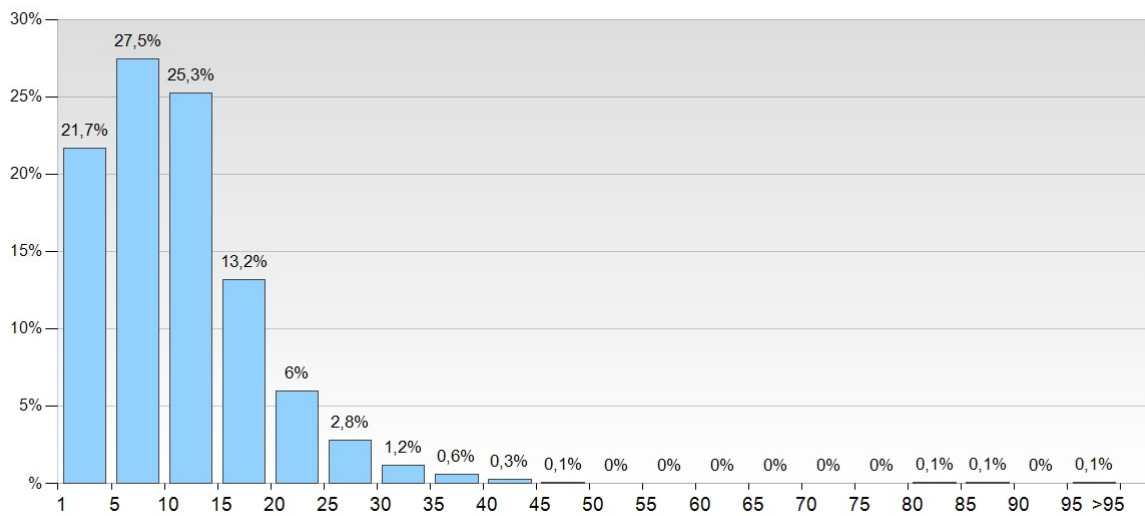
Anesthesia	n	%
Local	2149	56,84
General	1632	43,16
Total	3781	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	3	85,8	370	3780	1
Fluoroscopy time	1	11	379	3745	36

Investigation time (minutes)



Fluoroscopy time (minutes)



Atrial Fibrillation

Type of AF	n	%
Paroxysmal	2487	65,78
Persistent	1250	33,06
Long-standing Persistent (>1 Year)	44	1,16

EHRA-Score	n	%
Score I	359	9,49
Score II	2106	55,7
Score III	1228	32,48
Score IV	88	2,33

Type of Intervention	n	%
Percutaneous	3779	99,95
Hybrid (Epicardial + Endovascular)	2	0,05
Surgical Ablation	0	0

Intervention	n	%
Primary Intervention	3058	80,88
Redo	723	19,12

Antiarrhythmic Drugs	n
Beta Blocker	2649
None	652
Amiodarone	635
Flecainide	279
Calcium Antagonist	101
Sotalol	81
Dronedarone	27
Other	21
Digitalis	11
Propafenone	7

Thromboembolic Risk Factors	n
Hypertension	1714
Prior MI, Per. Artery Disease, Aortic Plaque	344
Diabetes	306
Congestive Heart Failure, LV dysfunction	254
Stroke, TIA, Other Embolic Event	146

Atrial Fibrillation

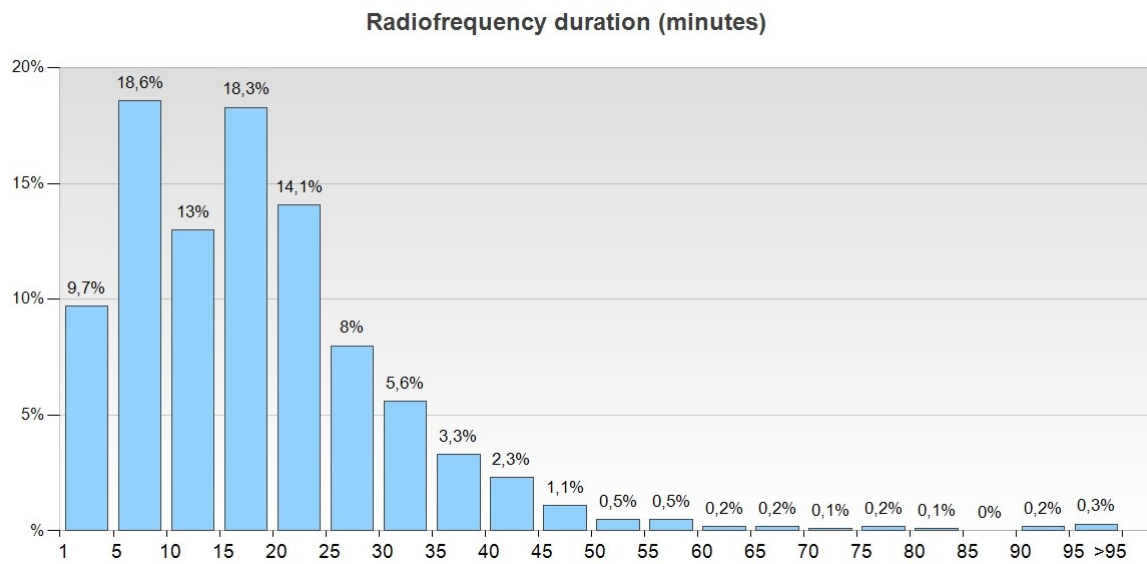
Anticoagulation, Antiaggregation	n
Factor Xa-Antagonist	3387
None	236
Vitamin K-Antagonist	89
Direct Thrombin Inhibitor	49
Clopidogrel	24
Aspirin	22
Other	11
Prasugrel	3
Ticagrelor	2

CHA₂DS₂-VASc Score	n
Score = 0	663
Score = 1	1001
Score = 2	972
Score = 3	716
Score = 4	322
Score = 5	84
Score = 6	18
Score = 7	4
Average Score	1,83

Site of Ablation	n
LSPV	3485
RSPV	3466
LIPV	3443
RIPV	3418
Roof Line	180
Other Lines	176
Non-PV Focus	85
CFAE	66
RMPV	62
SVC	54
Other Veins	44
Mitral Isthmus Line	42
Septal Line	18
Vein of Marshall	17

Atrial Fibrillation

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	18	567	1680	66
Irrigated Technology				1557	
RF Duty Cycled				77	



Atrial Fibrillation

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	2	22,2	860	794	41

	n
Additional RF or Cryo Cath Needed	4

	n
Laser ablation	6

	n
Contact force	737

	n
Pulsed field	1143

	n
Ethanol	6

	n
Radio ablation	0

Access	n	%
Trans-septal, Puncture	3567	94,34
Trans-septal, PFO	208	5,5
Other	6	0,16
Venous	0	0
Arterial	0	0
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Total	3781	

Atrial Fibrillation

Mapping	n	%
3D Mapping	2095	55,41
Conventional	905	23,94
Lasso	545	14,41
Basket	148	3,91
HD Mesh	68	1,8
Non Contact	15	0,4
Other	5	0,13
Total	3781	

Catheter Steering	n	%
Conventional	3773	99,79
Stereotaxis	6	0,16
Other	2	0,05
Hansen	0	0
Total	3781	

Results	n
All Veins Isolated	3762
Roof Line Block Confirmed	107
Mitral Isthmus Line Block Confirmed	22
Not All Veins Isolated	18
Mitral Isthmus Line Block Not Confirmed	3
Roof Line Block Not Confirmed	2

Sinus Rhythm	n
Spontaneous	2172
With Electrical Cardioversion / Stimulation	1094
By Ablation	641
AAD	92
Not Achieved	22

Atrial Fibrillation

Periprocedural Complications	n
No complications	3743
Phrenic Nerve Paralysis	10
Other	7
Pericardial Effusion	4
Inguinal Hematoma	3
AV Fistula	3
Stroke	3
Tamponade	3
Pseudoaneurysm	2
Infection	1
PV Stenosis	1
Pulmonary Oedema	1
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Myocardial Infarction	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Valvular Lesion	0
Death	0

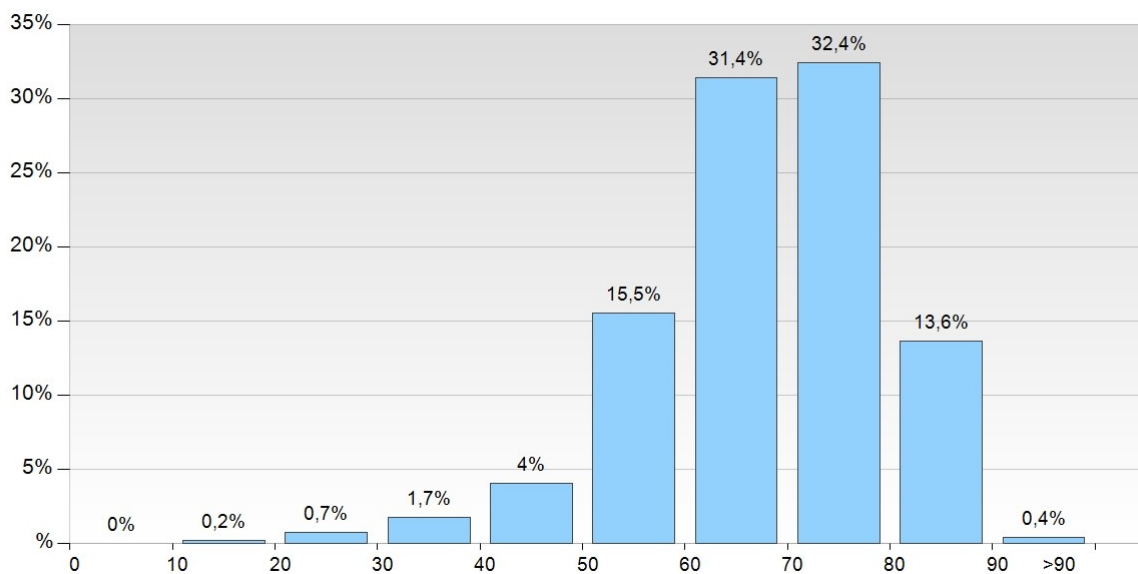
Right Atrial Flutter

Ablation of Right Atrial Flutter (RAFlu)

	n
All interventions	2335
RAFlu combined with others	1201
RAFlu only	1088

The following statistics include RAFlu only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	19	69	90
Male	20	68	96
All	19	68	96

Number of patients	n	%
Females	233	21,84
Males	834	78,16
Total	1067	

Right Atrial Flutter

Cardiopathy (Underlying heart disease)	n	%
None	521	47,89
Ischemic	142	13,05
Valvular	95	8,73
Tachycardiomyopathy	92	8,46
Hypertensive Cardiomyopathy	89	8,18
Dilated	40	3,68
Congenital	30	2,76
Other	27	2,48
Post Valvular Surgery	18	1,65
H(O)CM	11	1,01
Infiltrative	7	0,64
Post Congenital Surgery	6	0,55
RV Cardiomyopathy	4	0,37
CABG	3	0,28
Angioplasty	2	0,18
Brugada Syndrome	1	0,09
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
Total	1088	

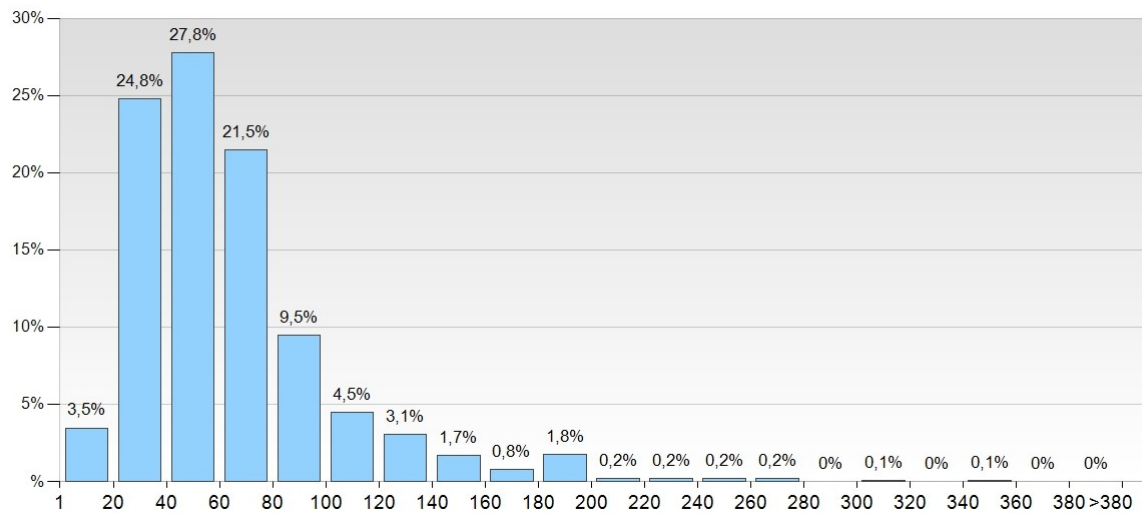
Symptoms	n
Palpitations	816
Dyspnea	367
Fatigue	199
Dizziness	74
Other	67
None	63
Angina Pectoris	17
Syncope	13
SCD	1

Right Atrial Flutter

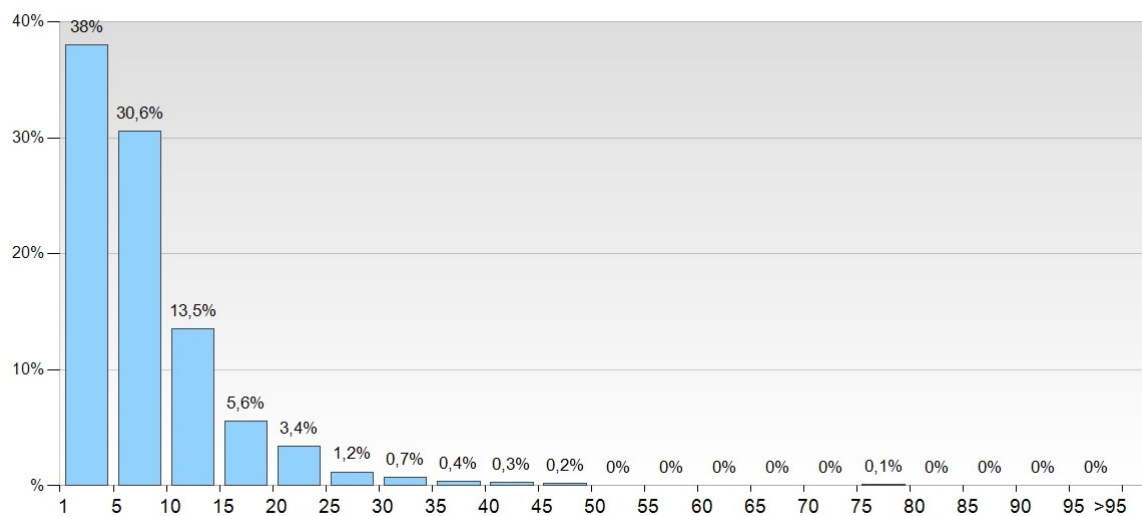
Anesthesia	n	%
Local	941	86,49
General	147	13,51
Total	1088	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	1	61,2	340	1087	1
Fluoroscopy time	1	7,5	79	1022	66

Investigation time (minutes)



Fluoroscopy time (minutes)



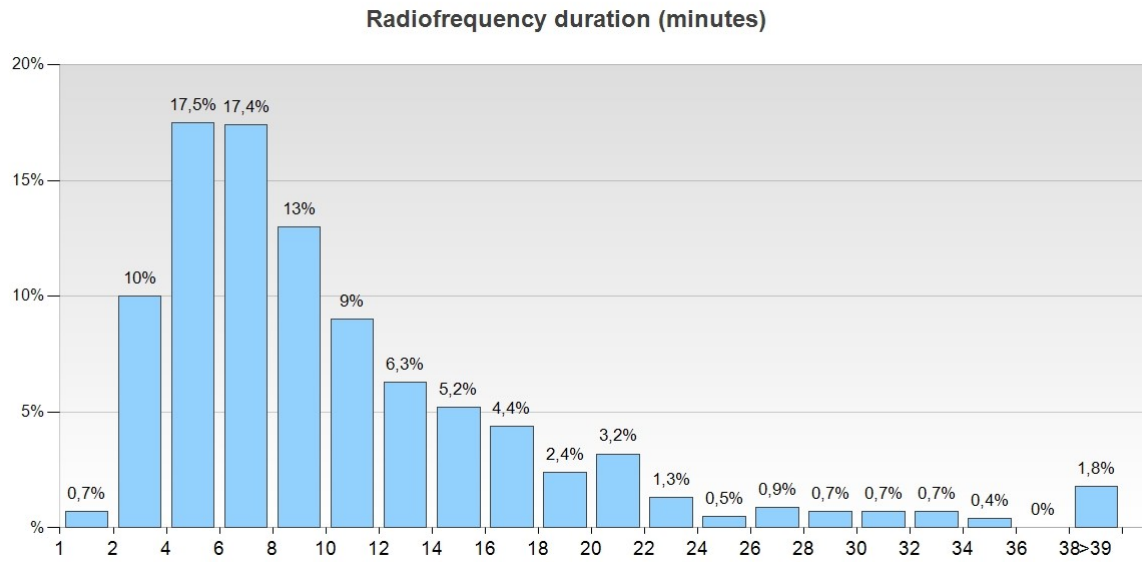
Right Atrial Flutter

Type of Flutter	n
Cavotricuspid	1064
Scar related	33
Other	8

Intervention	n	%
Primary Intervention	970	89,15
Redo	118	10,85

Right Atrial Flutter

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	10	126	1031	41
Irrigated Technology				772	



Right Atrial Flutter

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	2	10,6	35	16	0

	n
Additional RF or Cryo Cath Needed	1

	n
Contact force	138

	n
Pulsed field	1

	n
Ethanol	0

Access	n	%
Venous	1085	99,72
Epicardial, Thoracotomy	2	0,18
Other	1	0,09
Arterial	0	0
Trans-septal, Puncture	0	0
Trans-septal, PFO	0	0
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Total	1088	

Mapping	n	%
3D Mapping	583	53,58
Conventional	486	44,67
Lasso	14	1,29
HD Mesh	2	0,18
Non Contact	2	0,18
Basket	1	0,09
Other	0	0
Total	1088	

Right Atrial Flutter

Catheter Steering	n	%
Conventional	1086	99,82
Stereotaxis	2	0,18
Hansen	0	0
Other	0	0
Total	1088	

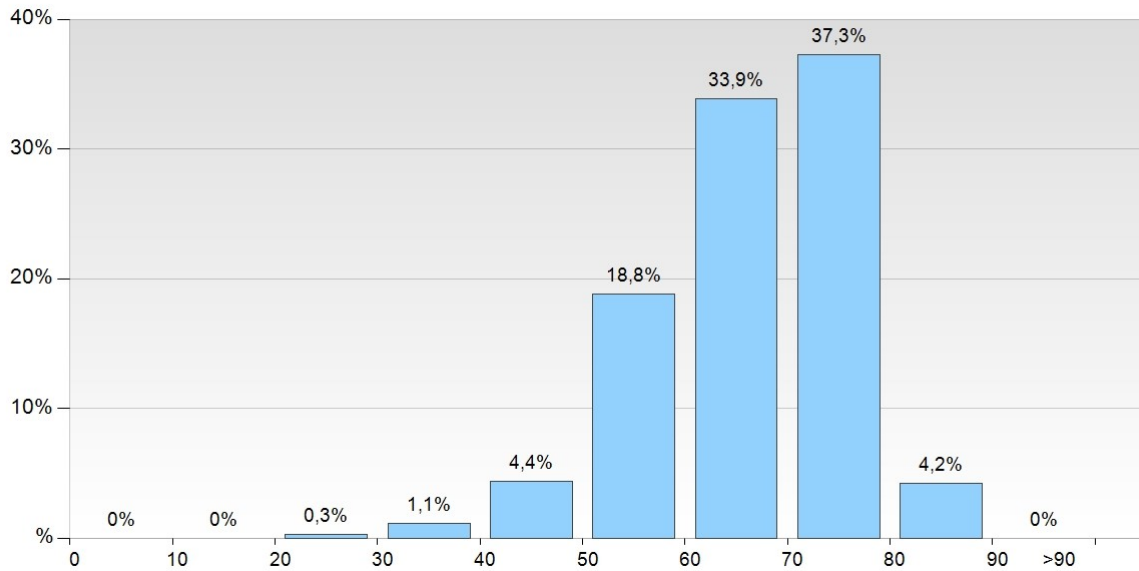
Results	n	%
Block confirmed	1063	97,7
Block not confirmed	25	2,3

Periprocedural Complications	n
No complications	1085
Other	2
AV Fistula	1
Inguinal Hematoma	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0

Atrial Fibrillation combined with Right Atrial Flutter

Number of interventions (AF with RAFlu): 926

Age distribution (years)



Age (years)	min.	Ø	max.
Female	33	68	88
Male	27	66	85
All	27	67	88

Number of patients	n	%
Females	253	27,41
Males	670	72,59
Total	923	

Atrial Fibrillation combined with Right Atrial Flutter

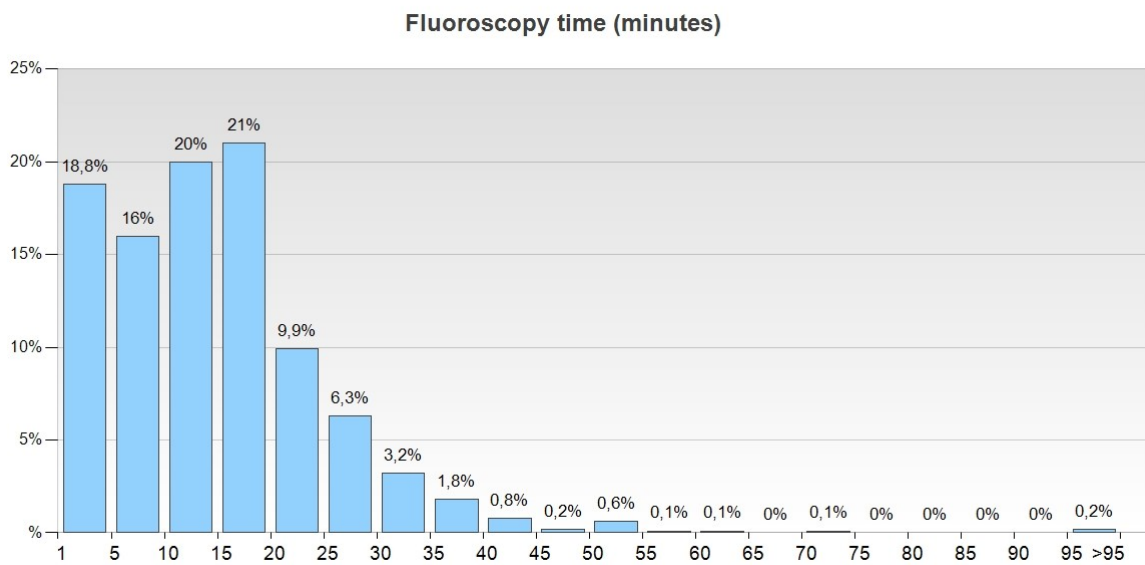
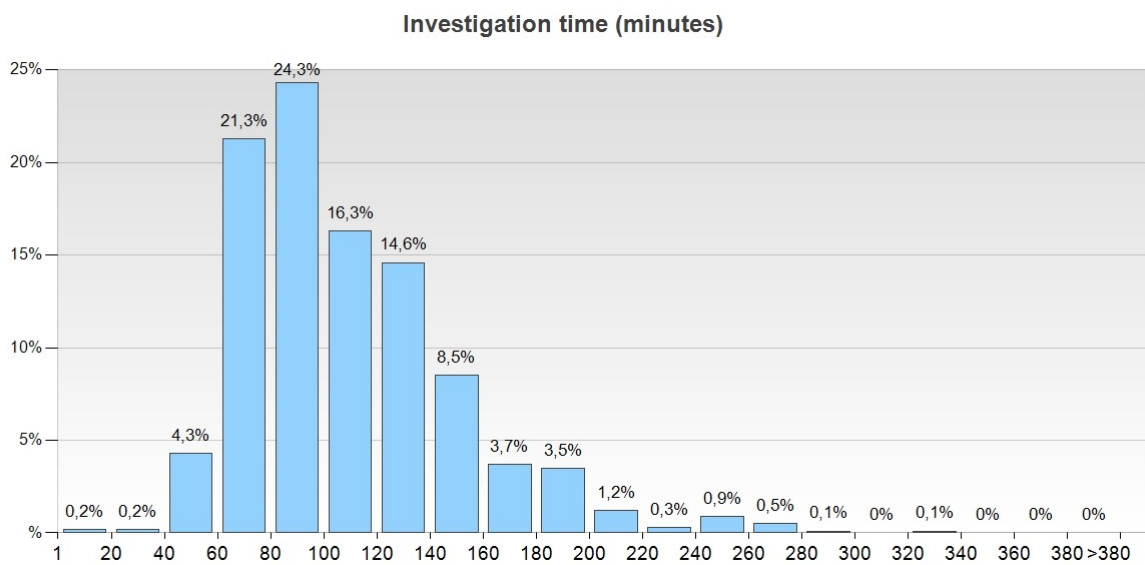
Cardiopathy (Underlying heart disease)	n	%
None	542	58,53
Tachycardiomyopathy	91	9,83
Hypertensive Cardiomyopathy	84	9,07
Ischemic	60	6,48
Valvular	57	6,16
Dilated	26	2,81
Angioplasty	25	2,7
Other	19	2,05
H(O)CM	6	0,65
Congenital	6	0,65
Post Valvular Surgery	3	0,32
CABG	3	0,32
Post Congenital Surgery	2	0,22
Brugada Syndrome	2	0,22
Infiltrative	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
RV Cardiomyopathy	0	0
Total	926	

Symptoms	n
Palpitations	802
Fatigue	312
Dyspnea	204
Dizziness	61
Other	49
Syncope	22
None	13
Angina Pectoris	11
SCD	2

Atrial Fibrillation combined with Right Atrial Flutter

Anesthesia	n	%
Local	411	44,38
General	515	55,62
Total	926	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	8	106,2	330	926	0
Fluoroscopy time	1	14,7	347	918	8



Atrial Fibrillation combined with Right Atrial Flutter

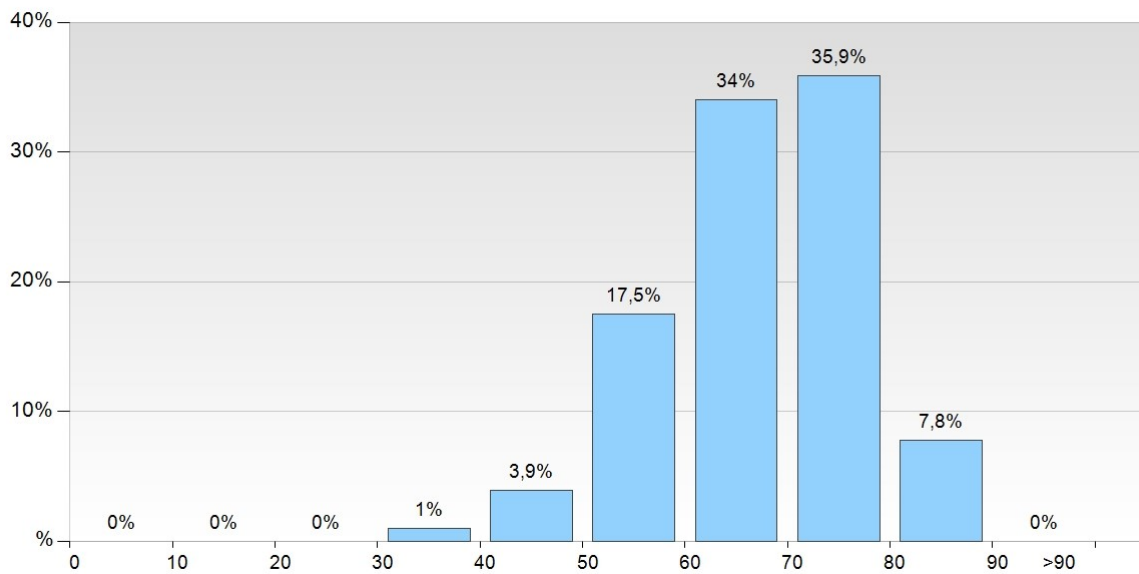
Periprocedural Complications	n
No complications	915
Other	5
Tamponade	4
Inguinal Hematoma	1
Pericardial Effusion	1
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0

Left Atrial Flutter

Ablation of Left Atrial Flutter (LAFlu)	n
All interventions	375
LAFlu combined with others	263
LAFlu only	103

The following statistics include LAFlu only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	38	69	83
Male	41	68	84
All	38	68	84

Number of patients	n	%
Females	35	35
Males	65	65
Total	100	

Left Atrial Flutter

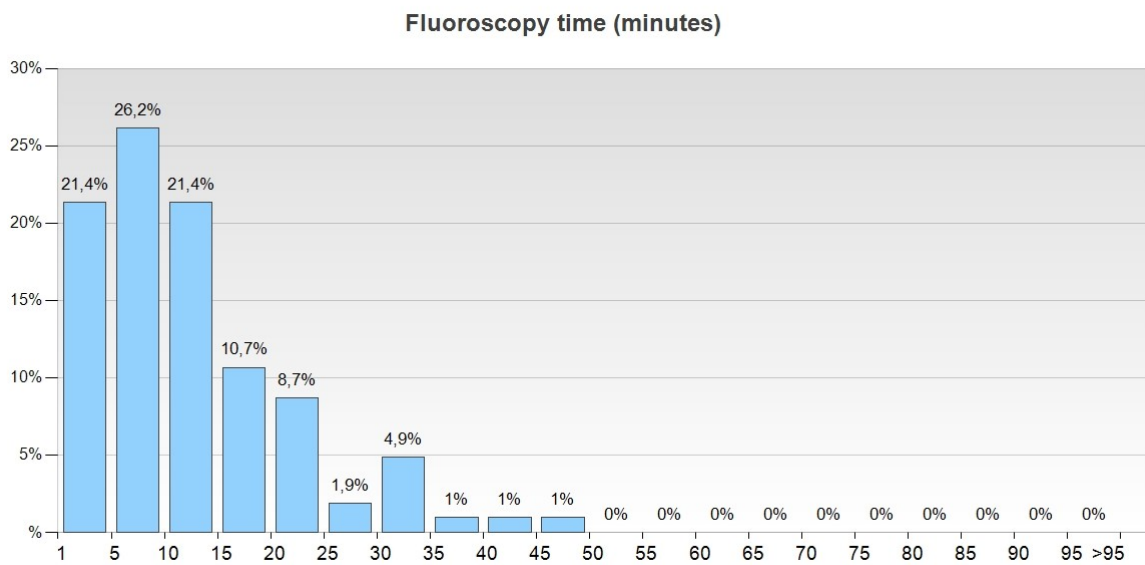
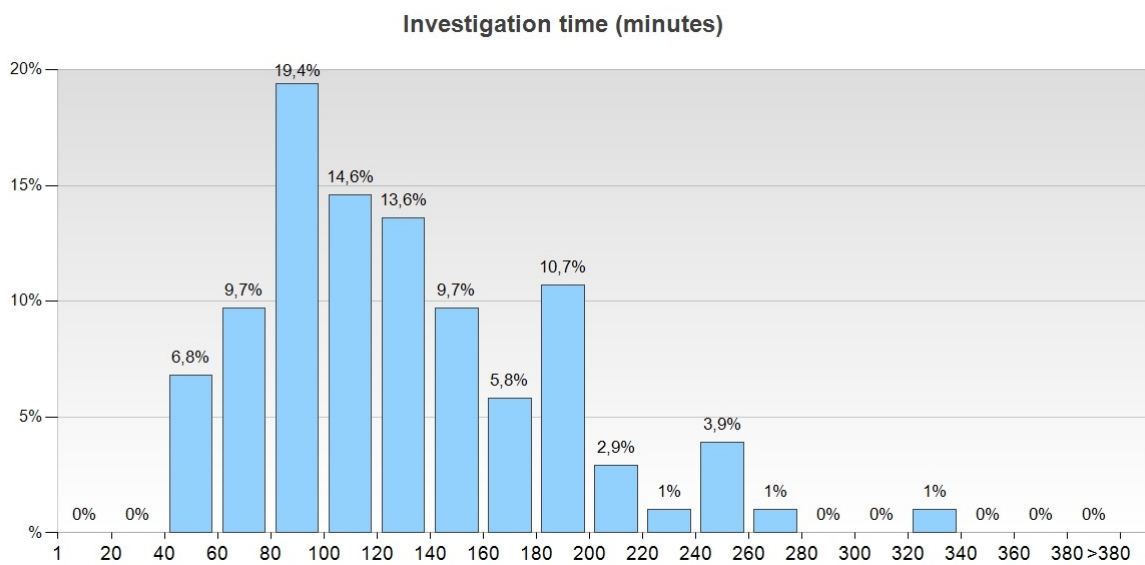
Cardiopathy (Underlying heart disease)	n	%
None	37	35,92
Hypertensive Cardiomyopathy	15	14,56
Ischemic	13	12,62
Tachycardiomyopathy	10	9,71
Valvular	9	8,74
H(O)CM	5	4,85
Other	5	4,85
Congenital	4	3,88
Dilated	3	2,91
Post Congenital Surgery	1	0,97
RV Cardiomyopathy	1	0,97
Infiltrative	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
CABG	0	0
Angioplasty	0	0
Post Valvular Surgery	0	0
Total	103	

Symptoms	n
Palpitations	76
Dyspnea	41
Fatigue	25
None	6
Dizziness	5
Other	5
Angina Pectoris	2
Syncope	1
SCD	0

Left Atrial Flutter

Anesthesia	n	%
Local	55	53,4
General	48	46,6
Total	103	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	40	128	324	103	0
Fluoroscopy time	1	12,1	46	101	2



Left Atrial Flutter

Type of Flutter	n
Perimitral	48
Roof-dependent	35
Other	33
Peri Ostial Pulmonary Vein	9
Peri-Incisional	3

EHRA-Score	n	%
Score I	6	5,83
Score II	56	54,37
Score III	41	39,81
Score IV	0	0

Type of Intervention	n	%
Percutaneous	103	100
Hybrid (Epicardial + Endovascular)	0	0
Surgical Ablation	0	0

Intervention	n	%
Primary Intervention	46	44,66
Redo	57	55,34

Antiarrhythmic Drugs	n
Beta Blocker	79
None	11
Amiodarone	9
Sotalol	7
Other	5
Flecainide	4
Calcium Antagonist	1
Propafenone	0
Dronedarone	0
Digitalis	0

Left Atrial Flutter

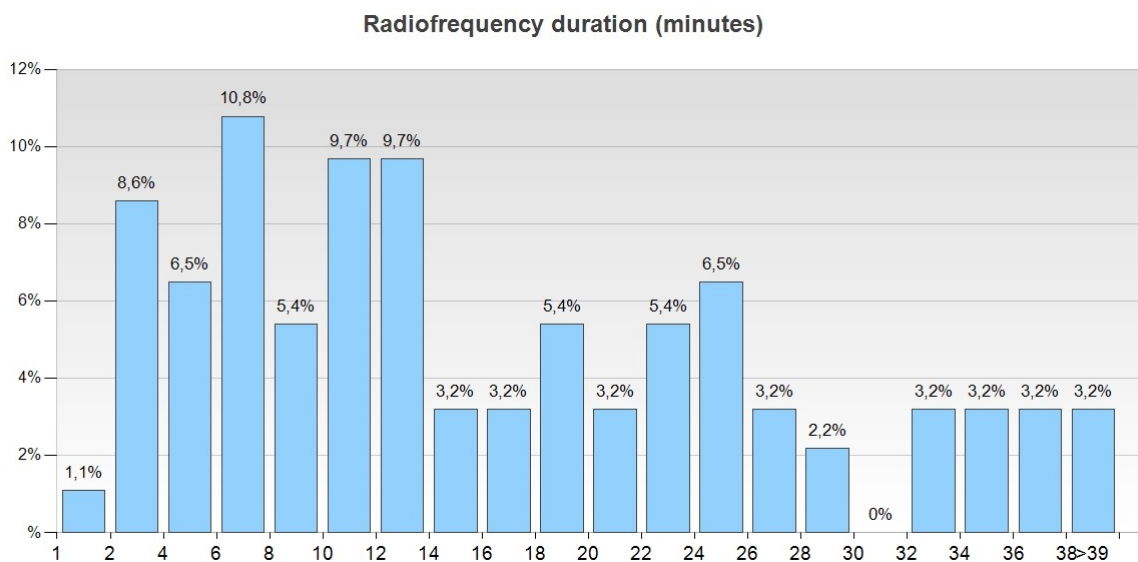
Thromboembolic Risk Factors	n
Hypertension	43
Diabetes	12
Prior MI, Per. Artery Disease, Aortic Plaque	12
Congestive Heart Failure, LV dysfunction	12
Stroke, TIA, Other Embolic Event	2

Anticoagulation, Antiaggregation	n
Factor Xa-Antagonist	85
Vitamin K-Antagonist	6
Direct Thrombin Inhibitor	5
Other	5
None	2
Clopidogrel	0
Prasugrel	0
Ticagrelor	0
Aspirin	0

CHA₂DS₂-VASc Score	n
Score = 0	13
Score = 1	27
Score = 2	19
Score = 3	28
Score = 4	14
Score = 5	1
Score = 6	1
Score = 7	0
Average Score	2,10

Left Atrial Flutter

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	26	956	90	3
Irrigated Technology				85	
RF Duty Cycled				0	



Left Atrial Flutter

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	0	0	0	0	0

	n
Laser ablation	0

	n
Contact force	20

	n
Pulsed field	11

	n
Ethanol	0

Access	n	%
Trans-septal, Puncture	94	91,26
Trans-septal, PFO	4	3,88
Arterial	3	2,91
Other	2	1,94
Venous	0	0
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Total	103	

Mapping	n	%
3D Mapping	96	93,2
Conventional	2	1,94
HD Mesh	2	1,94
Non Contact	2	1,94
Lasso	1	0,97
Basket	0	0
Other	0	0
Total	103	

Left Atrial Flutter

Catheter Steering	n	%
Conventional	103	100
Stereotaxis	0	0
Hansen	0	0
Other	0	0
Total	103	

Results	n	%
Block confirmed	95	92,23
Block not confirmed	8	7,77

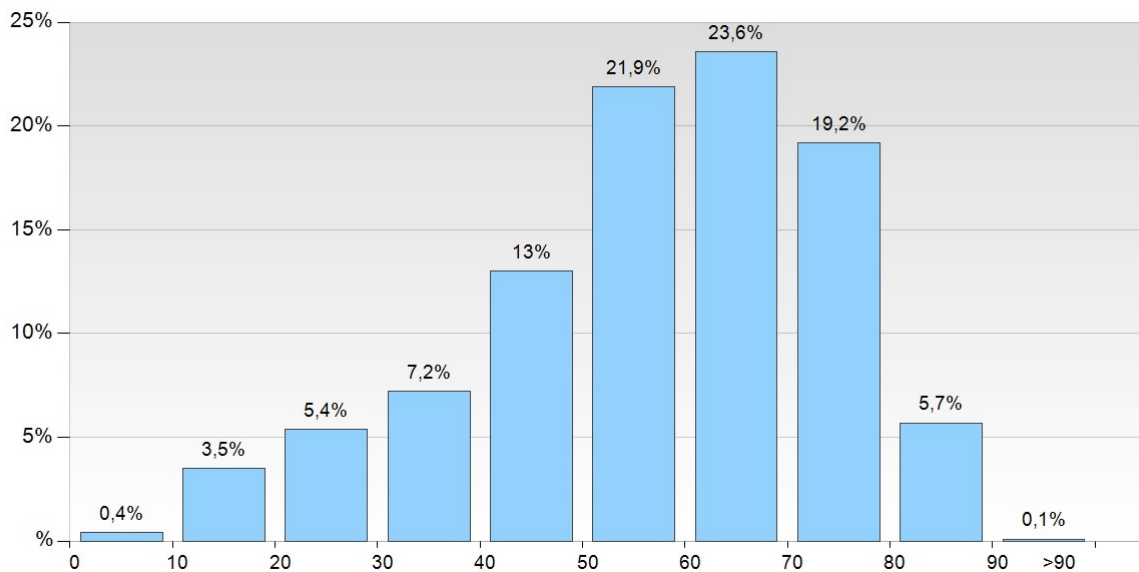
Periprocedural Complications	n
No complications	103
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0
Other	0

Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Ablation of AVNRT	n
All interventions	1325
AVNRT combined with others	114
AVNRT only	1138

The following statistics include AVNRT only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	10	55	93
Male	0	60	90
All	0	57	93

Number of patients	n	%
Females	598	52,97
Males	531	47,03
Total	1129	

Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Cardiopathy (Underlying heart disease)	n	%
None	944	82,95
Ischemic	54	4,75
Tachycardiomyopathy	36	3,16
Hypertensive Cardiomyopathy	35	3,08
Valvular	25	2,2
Other	15	1,32
Dilated	12	1,05
Congenital	10	0,88
H(O)CM	4	0,35
Post Congenital Surgery	1	0,09
Angioplasty	1	0,09
Post Valvular Surgery	1	0,09
Infiltrative	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
RV Cardiomyopathy	0	0
CABG	0	0
Total	1138	

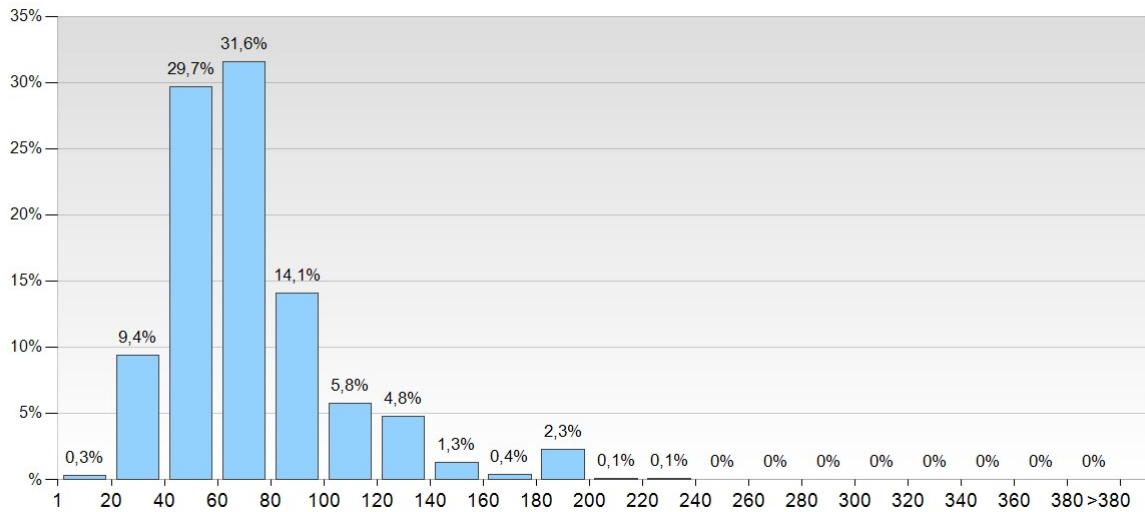
Symptoms	n
Palpitations	1041
Dizziness	123
Dyspnea	86
Fatigue	72
Syncope	56
Other	51
None	40
Angina Pectoris	18
SCD	0

Atrioventricular Nodal Reentry Tachycardia (AVNRT)

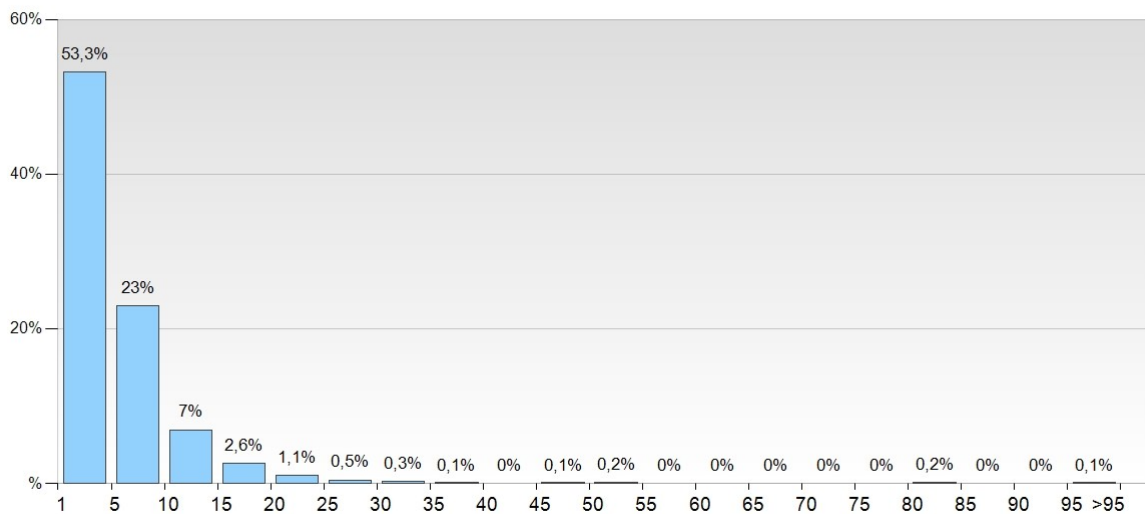
Anesthesia	n	%
Local	1086	95,43
General	52	4,57
Total	1138	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	1	69,5	228	1136	2
Fluoroscopy time	1	5,5	137	1008	130

Investigation time (minutes)



Fluoroscopy time (minutes)

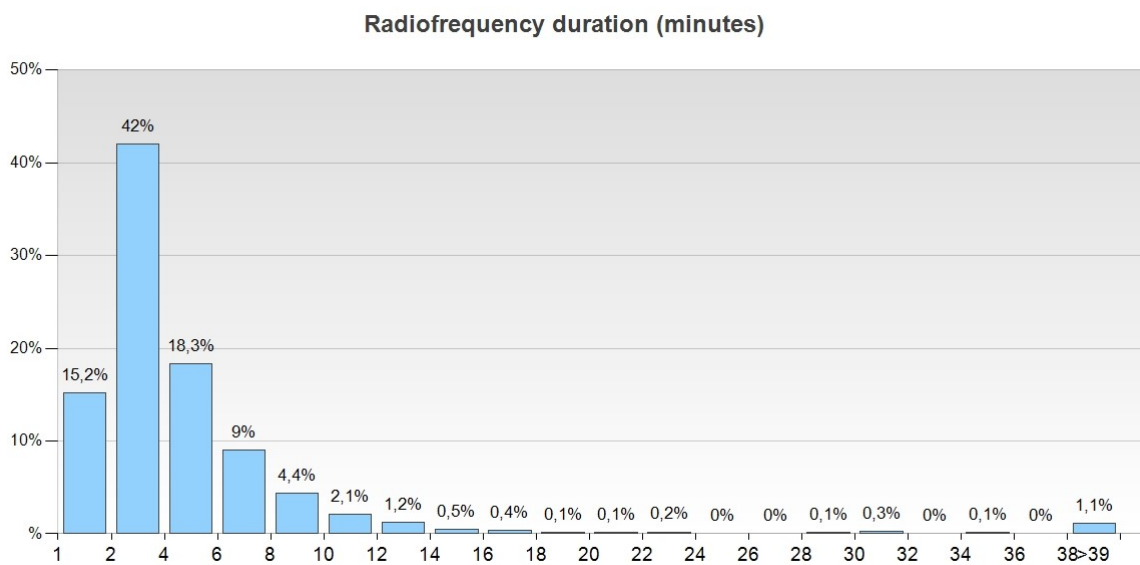


Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Type	n
Slow-Fast	1050
Slow-Slow	69
Fast-Slow	33

Intervention	n	%
Primary Intervention	1080	94,9
Redo	58	5,1

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	5	717	1072	56
Irrigated Technology				178	



Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	3	19	37	7	2

	n
Contact force	84

	n
Pulsed field	0

	n
Ethanol	0

Access	n	%
Venous	1136	99,82
Other	2	0,18
Arterial	0	0
Trans-septal, Puncture	0	0
Trans-septal, PFO	0	0
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Total	1138	

Mapping	n	%
3D Mapping	736	64,67
Conventional	391	34,36
Lasso	4	0,35
Basket	3	0,26
HD Mesh	2	0,18
Other	1	0,09
Non Contact	1	0,09
Total	1138	

Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Catheter Steering	n	%
Conventional	1138	100
Stereotaxis	0	0
Hansen	0	0
Other	0	0
Total	1138	

Results	n	%
Success	1127	99,03
No success	11	0,97

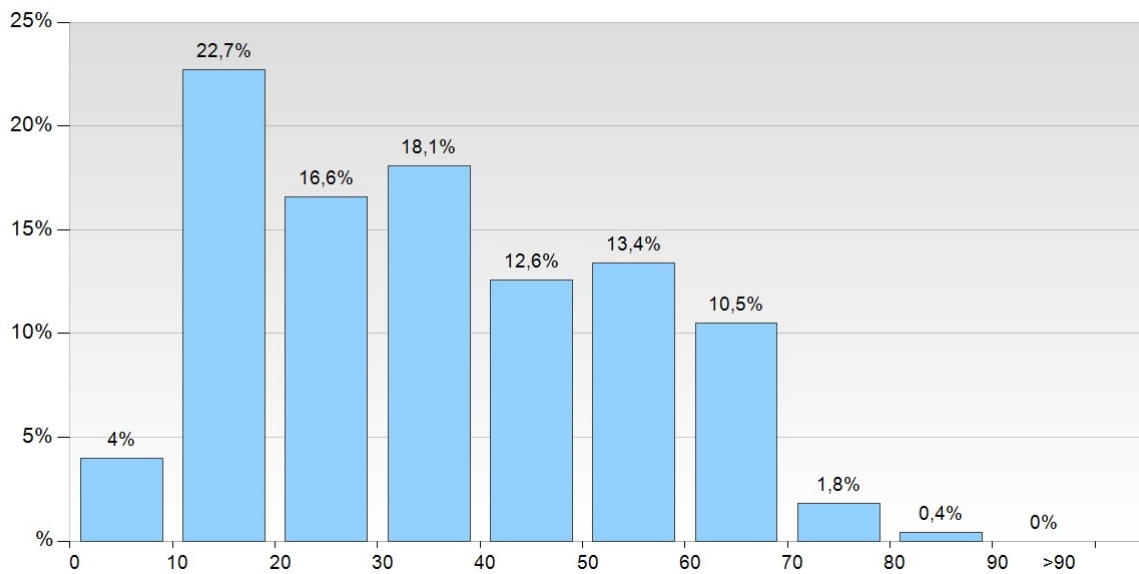
Periprocedural Complications	n
No complications	1134
Transient AV Block	1
High Degree or Complete AV Block	1
Valvular Lesions	1
Other	1
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Pulmonary Oedema	0
Death	0

Accessory Pathway

Ablation of Accessory Pathway (AP)	n
All interventions	308
AP combined with others	17
AP only	277

The following statistics include AP only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	7	37	85
Male	6	35	76
All	6	36	85

Number of patients	n	%
Females	114	42,54
Males	154	57,46
Total	268	

Accessory Pathway

Cardiopathy (Underlying heart disease)	n	%
None	257	92,78
Valvular	4	1,44
Congenital	4	1,44
Ischemic	4	1,44
Tachycardiomyopathy	3	1,08
Hypertensive Cardiomyopathy	3	1,08
Other	1	0,36
H(O)CM	1	0,36
Dilated	0	0
Infiltrative	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
RV Cardiomyopathy	0	0
CABG	0	0
Angioplasty	0	0
Post Congenital Surgery	0	0
Post Valvular Surgery	0	0
Total	277	

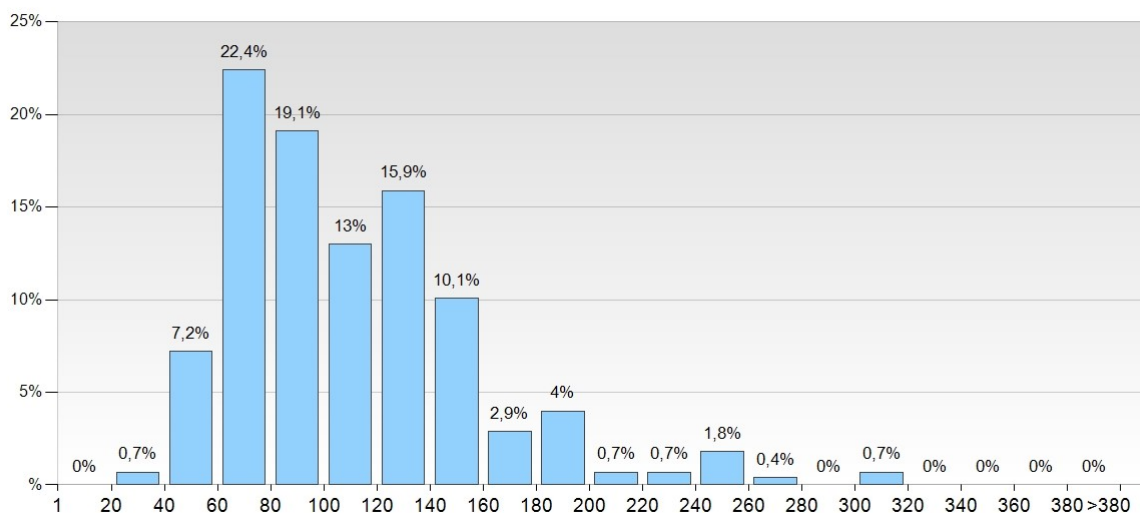
Symptoms	n
Palpitations	222
None	46
Fatigue	21
Dizziness	20
Dyspnea	15
Syncope	8
Other	8
Angina Pectoris	3
SCD	2

Accessory Pathway

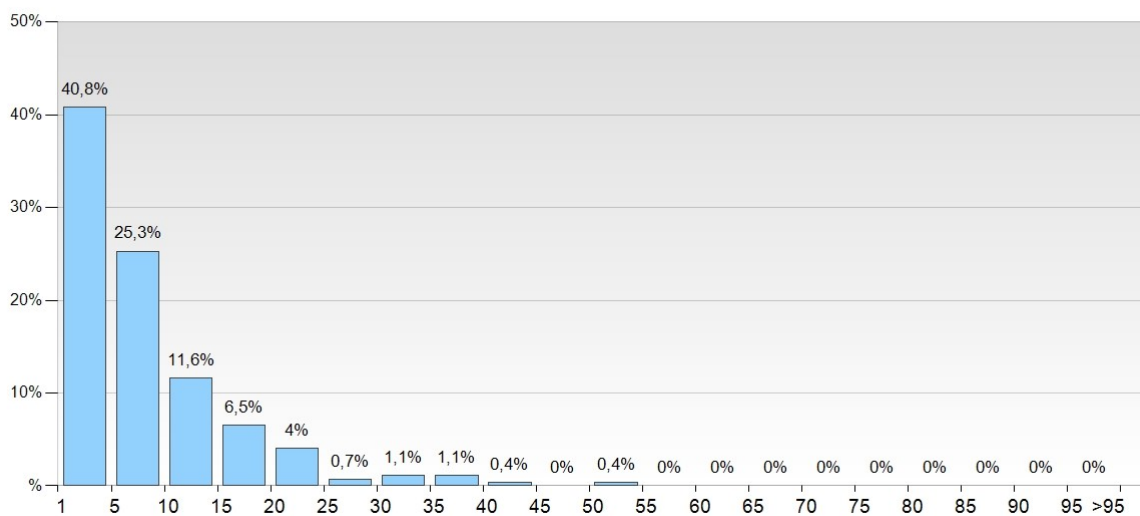
Anesthesia	n	%
Local	215	77,62
General	62	22,38
Total	277	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	35	107,7	307	276	1
Fluoroscopy time	1	7,9	53	254	23

Investigation time (minutes)



Fluoroscopy time (minutes)



Accessory Pathway

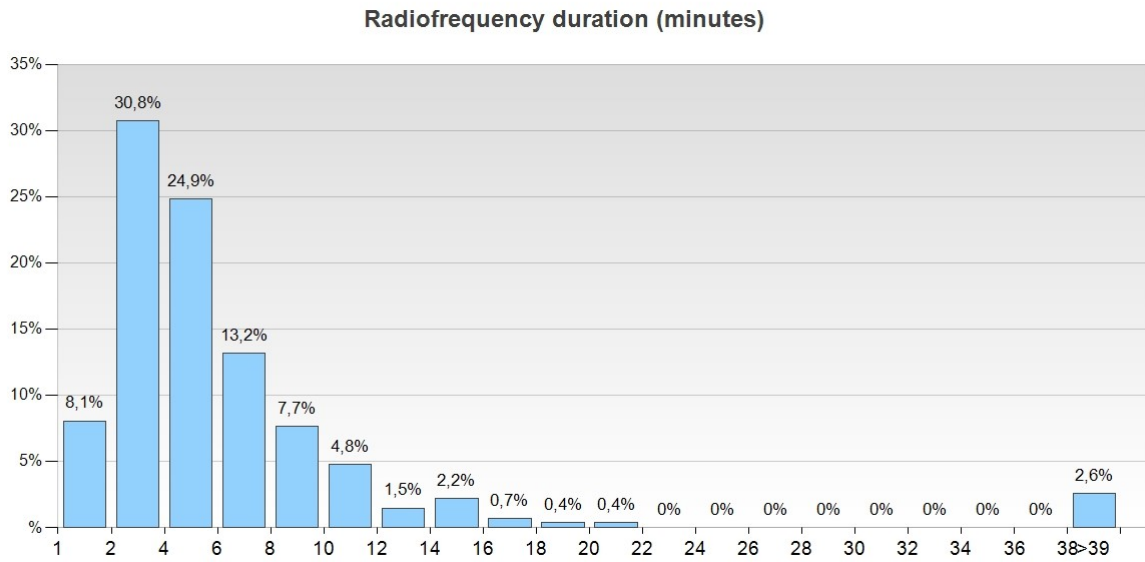
Type	n
WPW	155
Concealed	92
Asymptomatic Preexcitation	27
PJRT	6
Mahaim	2
Other	2
Atrio-Fascicular	0

Intervention	n	%
Primary Intervention	247	89,17
Redo	30	10,83

Site of Ablation	n
left	173
right	115
left: Free Wall	95
right: Posteroseptal	57
left: Posteroseptal	48
left: Posterior	35
right: Free Wall	20
right: Anteroseptal	11
right: Midseptal	10
right: Parahisian	9
right: Coronary Sinus Aneurysm	8
right: Posterior	5

Accessory Pathway

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	9	348	265	8
Irrigated Technology				195	



Accessory Pathway

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	1	5	9	4	1

	n
Contact force	62

	n
Pulsed field	0

	n
Ethanol	0

Access	n	%
Venous	140	50,54
Trans-septal, Puncture	115	41,52
Arterial	15	5,42
Trans-septal, PFO	7	2,53
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Other	0	0
Total	277	

Mapping	n	%
3D Mapping	229	82,67
Conventional	45	16,25
Lasso	2	0,72
Basket	1	0,36
Non Contact	0	0
HD Mesh	0	0
Other	0	0
Total	277	

Accessory Pathway

Catheter Steering	n	%
Conventional	276	99,64
Stereotaxis	1	0,36
Hansen	0	0
Other	0	0
Total	277	

Results	n	%
Success	265	95,67
No success	12	4,33

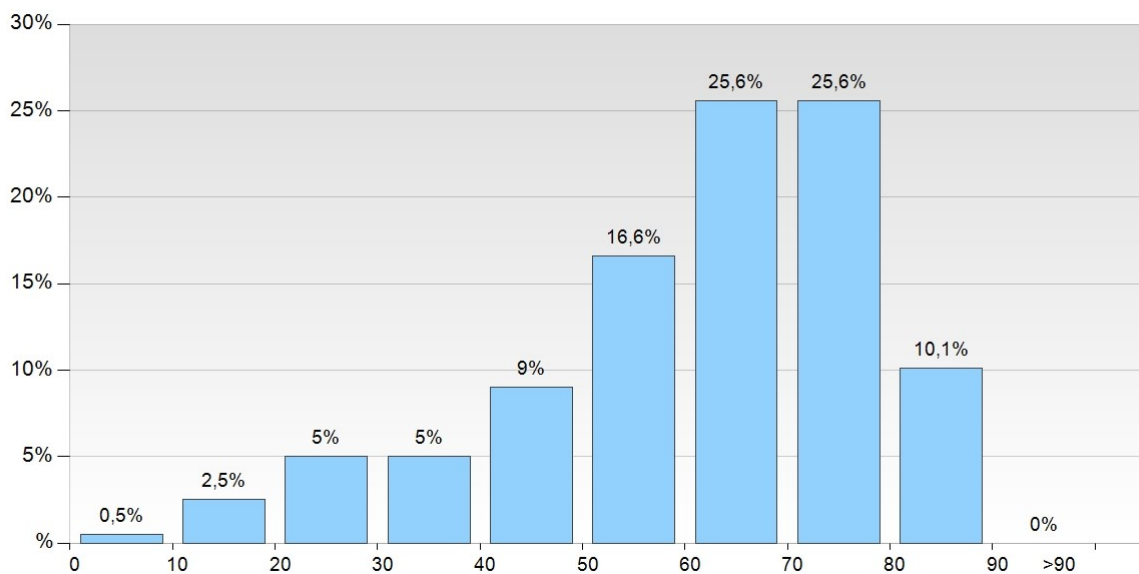
Periprocedural Complications	n
No complications	276
Transient AV Block	1
High Degree or Complete AV Block	1
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0
Other	0

Atrial Tachycardia

Ablation of Atrial Tachycardia (AT)	n
All interventions	362
AT combined with others	150
AT only	199

The following statistics include AT only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	0	60	83
Male	11	62	86
All	0	61	86

Number of patients	n	%
Females	95	50
Males	95	50
Total	190	

Atrial Tachycardia

Cardiopathy (Underlying heart disease)	n	%
None	111	55,78
Ischemic	19	9,55
Tachycardiomyopathy	18	9,05
Hypertensive Cardiomyopathy	12	6,03
Valvular	11	5,53
Congenital	10	5,03
Other	8	4,02
Dilated	4	2,01
Post Congenital Surgery	4	2,01
Infiltrative	2	1,01
H(O)CM	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
RV Cardiomyopathy	0	0
CABG	0	0
Angioplasty	0	0
Post Valvular Surgery	0	0
Total	199	

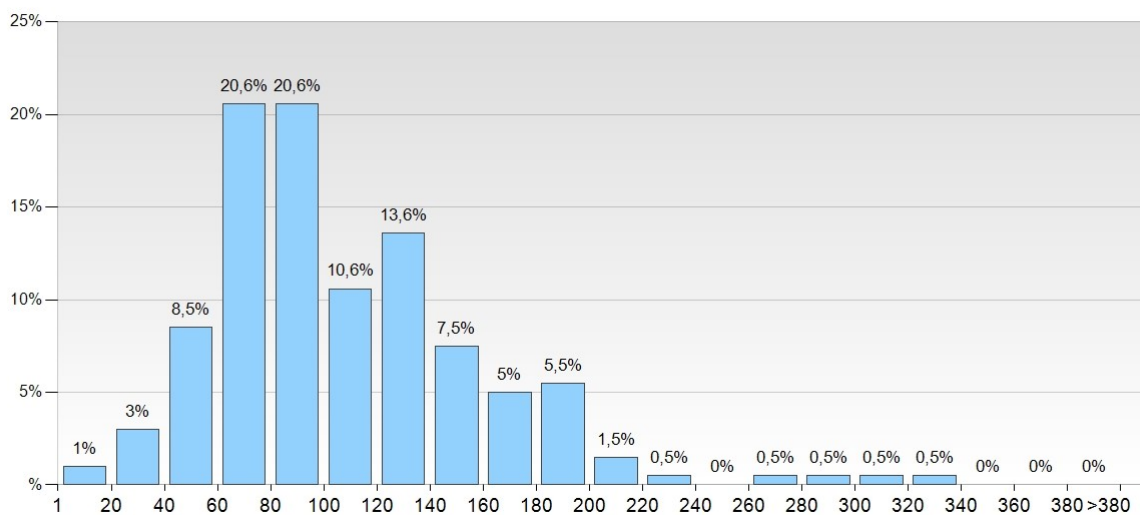
Symptoms	n
Palpitations	177
Dyspnea	38
Fatigue	25
Dizziness	24
Syncope	10
Other	10
None	3
Angina Pectoris	3
SCD	0

Atrial Tachycardia

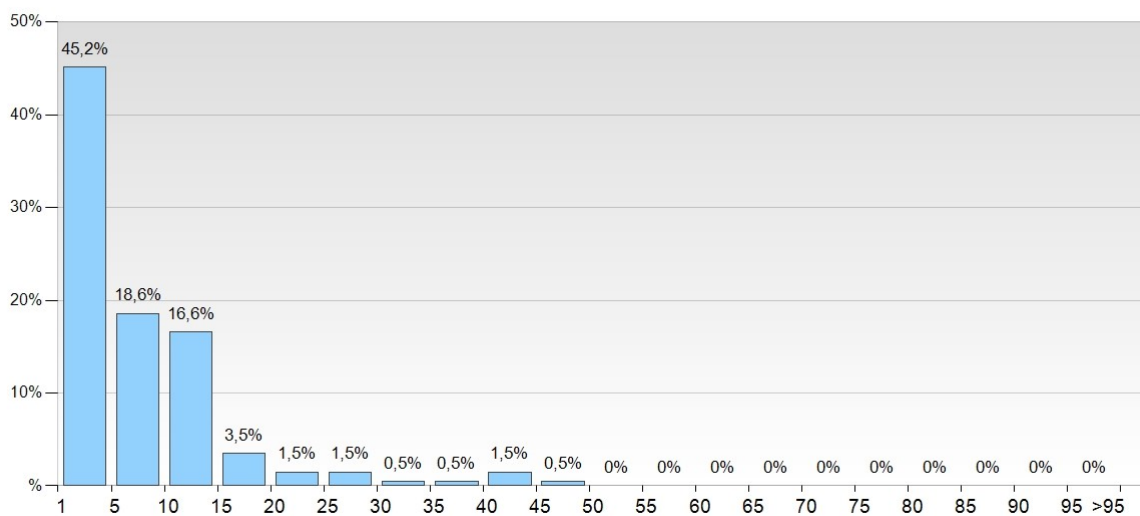
Anesthesia	n	%
Local	166	83,42
General	33	16,58
Total	199	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	3	105,4	326	199	0
Fluoroscopy time	1	7,3	45	179	20

Investigation time (minutes)



Fluoroscopy time (minutes)



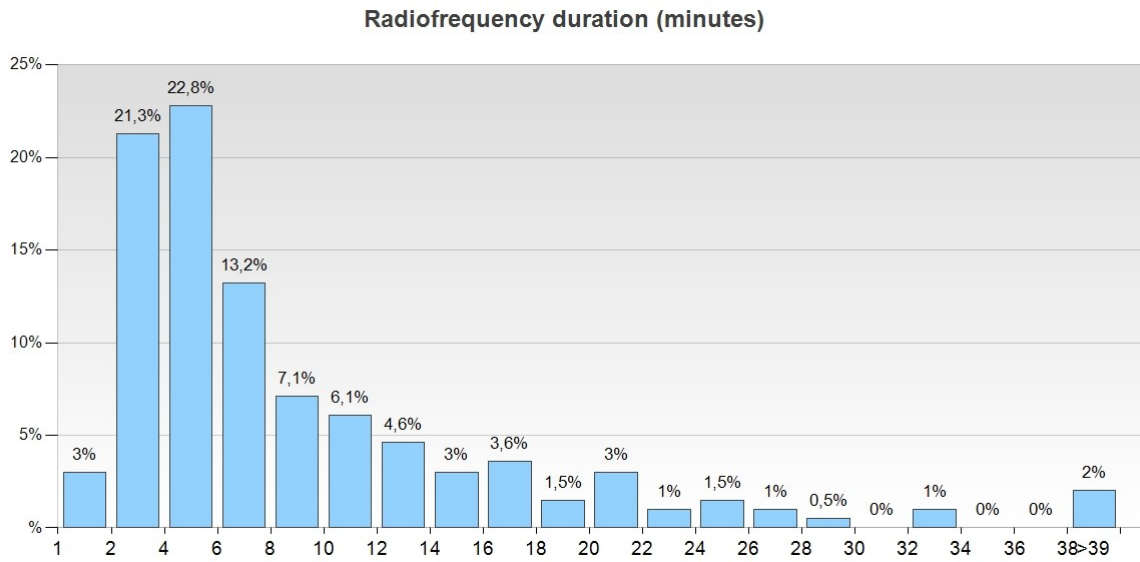
Atrial Tachycardia

Intervention	n	%
Primary Intervention	176	88,44
Redo	23	11,56

Site of Ablation	n
right	152
left	58
right: Other Right	51
right: Septal Right	36
right: Crista Terminalis	34
right: Peritricuspid	33
left: Other Left	20
left: Septal Left	14
right: Right Appendage	12
left: Periostial PV	12
left: Perimitral	12
left: Left Atrial Appendage	5

Atrial Tachycardia

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	9	120	190	7
Irrigated Technology				167	



Atrial Tachycardia

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	0	0	0	0	0

	n
Contact force	48

	n
Pulsed field	1

	n
Ethanol	0

Access	n	%
Venous	145	72,86
Trans-septal, Puncture	40	20,1
Arterial	7	3,52
Trans-septal, PFO	5	2,51
Trans-septal Puncture+arterial	1	0,5
Other	1	0,5
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Total	199	

Mapping	n	%
3D Mapping	172	86,43
Conventional	16	8,04
Basket	3	1,51
HD Mesh	3	1,51
Non Contact	3	1,51
Lasso	2	1,01
Other	0	0
Total	199	

Atrial Tachycardia

Catheter Steering	n	%
Conventional	199	100
Stereotaxis	0	0
Hansen	0	0
Other	0	0
Total	199	

Results	n	%
Success	186	93,47
No success	13	6,53

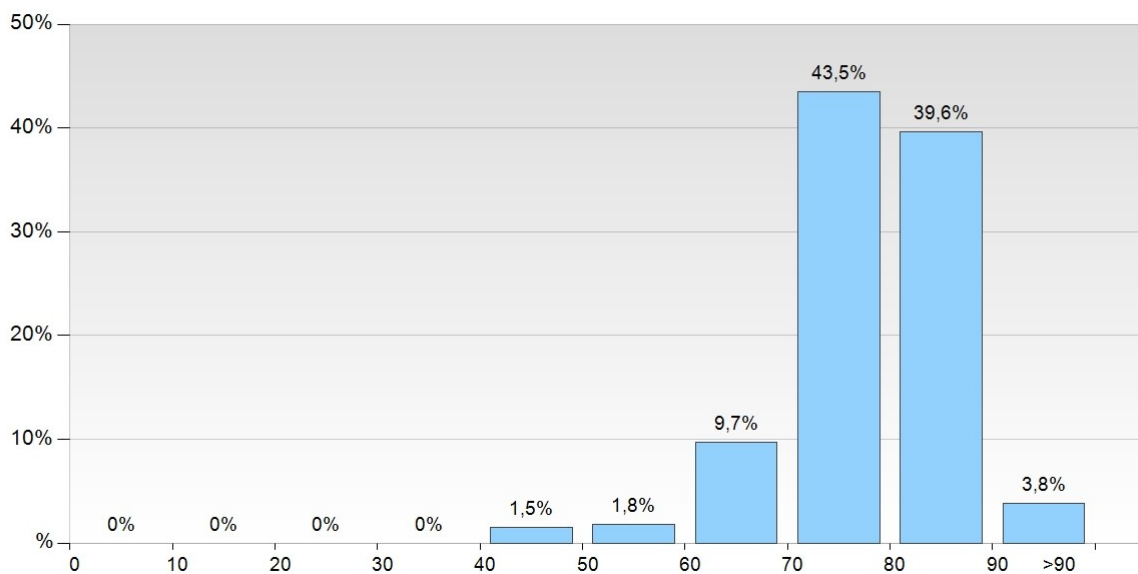
Periprocedural Complications	n
No complications	199
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0
Other	0

Atrioventricular Node (Rate Control in Atr. Fibrillation)

Ablation of AVN(R)	n
All interventions	430
AVN(R) combined with others	8
AVN(R) only	391

The following statistics include AVN(R) only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	48	79	101
Male	43	77	93
All	43	79	101

Number of patients	n	%
Females	227	59,11
Males	157	40,89
Total	384	

Atrioventricular Node (Rate Control in Atr. Fibrillation)

Cardiopathy (Underlying heart disease)	n	%
None	106	27,11
Tachycardiomyopathy	91	23,27
Ischemic	55	14,07
Hypertensive Cardiomyopathy	47	12,02
Valvular	41	10,49
Dilated	18	4,6
Other	18	4,6
H(O)CM	5	1,28
Infiltrative	5	1,28
Post Valvular Surgery	4	1,02
Angioplasty	1	0,26
Congenital	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
RV Cardiomyopathy	0	0
CABG	0	0
Post Congenital Surgery	0	0
Total	391	

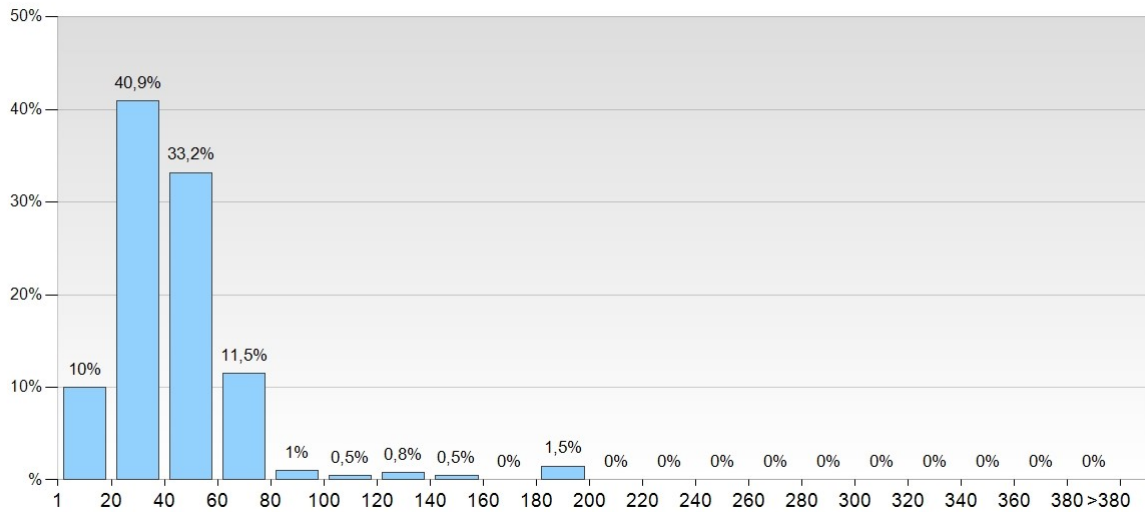
Symptoms	n
Palpitations	280
Dyspnea	194
Fatigue	112
Dizziness	30
Other	18
None	14
Syncope	4
Angina Pectoris	4
SCD	1

Atrioventricular Node (Rate Control in Atr. Fibrillation)

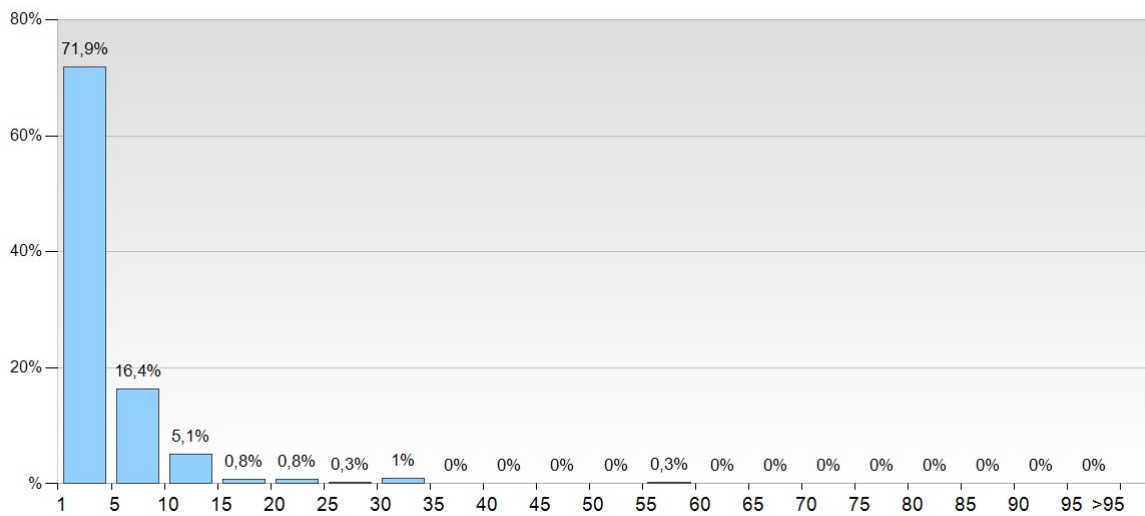
Anesthesia	n	%
Local	387	98,98
General	4	1,02
Total	391	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	1	41,3	180	391	0
Fluoroscopy time	1	4,1	55	377	14

Investigation time (minutes)



Fluoroscopy time (minutes)



Atrioventricular Node (Rate Control in Atr. Fibrillation)

Type of Fibrillation	n	%
Paroxysmal	70	17,9
Persistent	207	52,94
Long-standing Persistent (>1 Year)	114	29,16

EHRA-Score	n	%
Score I	14	3,58
Score II	137	35,04
Score III	192	49,1
Score IV	48	12,28

Intervention	n	%
Primary Intervention	345	88,24
Redo	25	6,39
Previous AF Abl. Procedure	21	5,37

Antiarrhythmic Drugs	n
Beta Blocker	312
Amiodarone	107
Calcium Antagonist	33
Digitalis	20
None	18
Other	15
Sotalol	9
Flecainide	8
Propafenone	1
Dronedarone	1

Atrioventricular Node (Rate Control in Atr. Fibrillation)

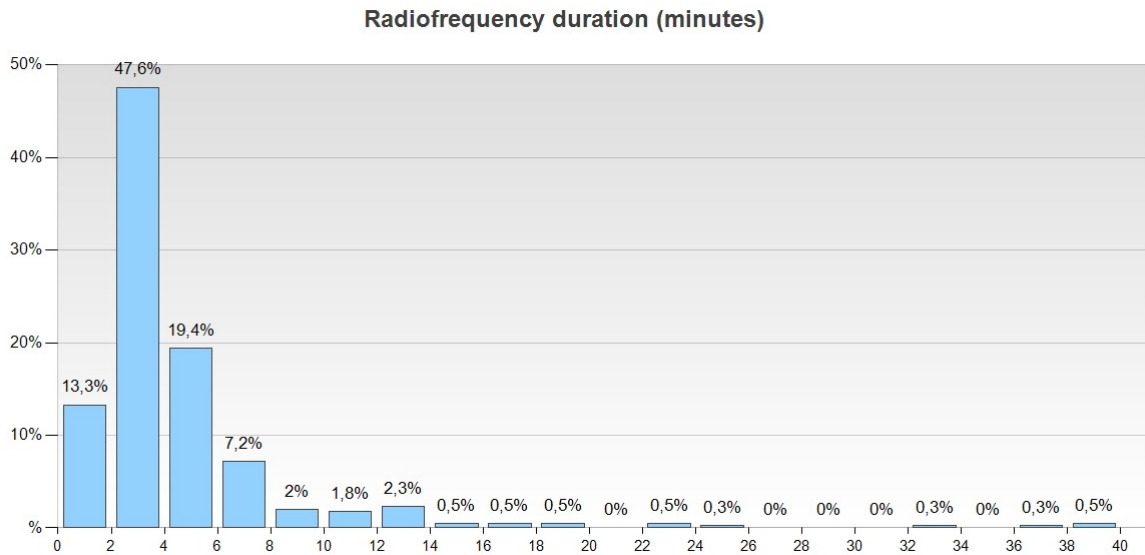
Thromboembolic Risk Factors	n
Hypertension	222
Congestive Heart Failure, LV dysfunction	94
Diabetes	53
Prior MI, Per. Artery Disease, Aortic Plaque	48
Stroke, TIA, Pther Embolic Event	16

Anticoagulation, Antiaggregation	n
Factor Xa-Antagonist	323
Vitamin K-Antagonist	22
Other	20
Direct Thrombin Inhibitor	12
None	11
Aspirin	5
Clopidogrel	3
Prasugrel	0
Ticagrelor	0

CHA₂DS₂-VASc Score	n
Score = 0	4
Score = 1	20
Score = 2	66
Score = 3	119
Score = 4	112
Score = 5	53
Score = 6	9
Score = 7	6
Average Score	3,37

Atrioventricular Node (Rate Control in Atr. Fibrillation)

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	5	180	380	11
Irrigated Technology				260	



Atrioventricular Node (Rate Control in Atr. Fibrillation)

Cryoablation	min.	Ø	max.	n	n₀*
Total Duration (minutes)	0	0	0	0	0

	n
Contact force	30

	n
Pulsed field	0

	n
Ethanol	0

Access	n	%
Venous	382	97,7
Arterial	5	1,28
Trans-septal, Puncture	3	0,77
Other	1	0,26
Trans-septal, PFO	0	0
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Total	391	

Mapping	n	%
Conventional	291	74,42
3D Mapping	96	24,55
Other	3	0,77
Basket	1	0,26
Lasso	0	0
Non Contact	0	0
HD Mesh	0	0
Total	391	

Atrioventricular Node (Rate Control in Atr. Fibrillation)

Catheter Steering	n	%
Conventional	387	98,98
Other	4	1,02
Stereotaxis	0	0
Hansen	0	0
Total	391	

Results	n	%
Success	389	99,49
No success	2	0,51

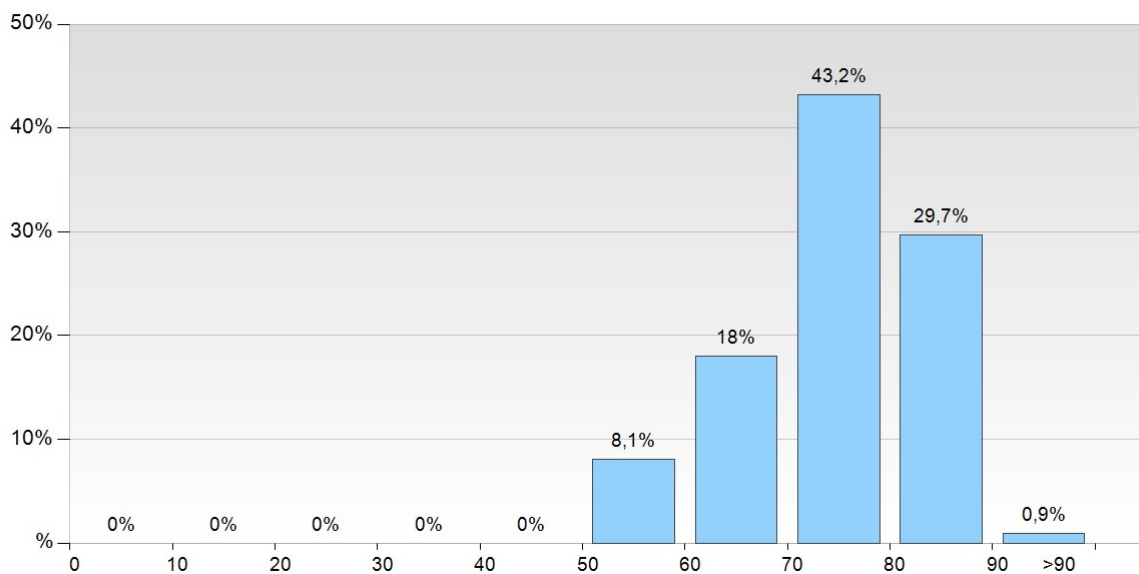
Periprocedural Complications	n
No complications	391
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0
Other	0

Atrioventricular Node (to resynchronisation)

Ablation of AVN	n
All interventions	125
AVN combined with others	11
AVN only	111

The following statistics include AVN only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	53	77	93
Male	51	75	89
All	51	75	93

Number of patients	n	%
Females	35	31,53
Males	76	68,47
Total	111	

Atrioventricular Node (to resynchronisation)

Cardiopathy (Underlying heart disease)	n	%
Ischemic	24	21,62
Tachycardiomyopathy	21	18,92
Dilated	20	18,02
None	15	13,51
Hypertensive Cardiomyopathy	11	9,91
Valvular	9	8,11
Other	6	5,41
Infiltrative	2	1,8
Post Congenital Surgery	1	0,9
CABG	1	0,9
Post Valvular Surgery	1	0,9
Congenital	0	0
H(O)CM	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
RV Cardiomyopathy	0	0
Angioplasty	0	0
Total	111	

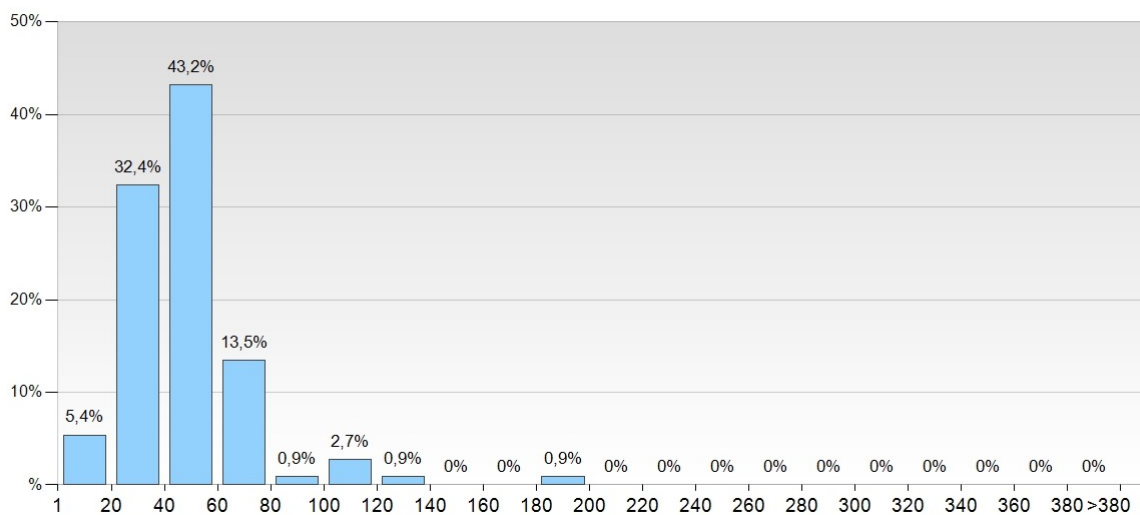
Symptoms	n
Palpitations	77
Dyspnea	54
Fatigue	38
Dizziness	10
Other	9
Syncope	4
Angina Pectoris	2
None	1
SCD	0

Atrioventricular Node (to resynchronisation)

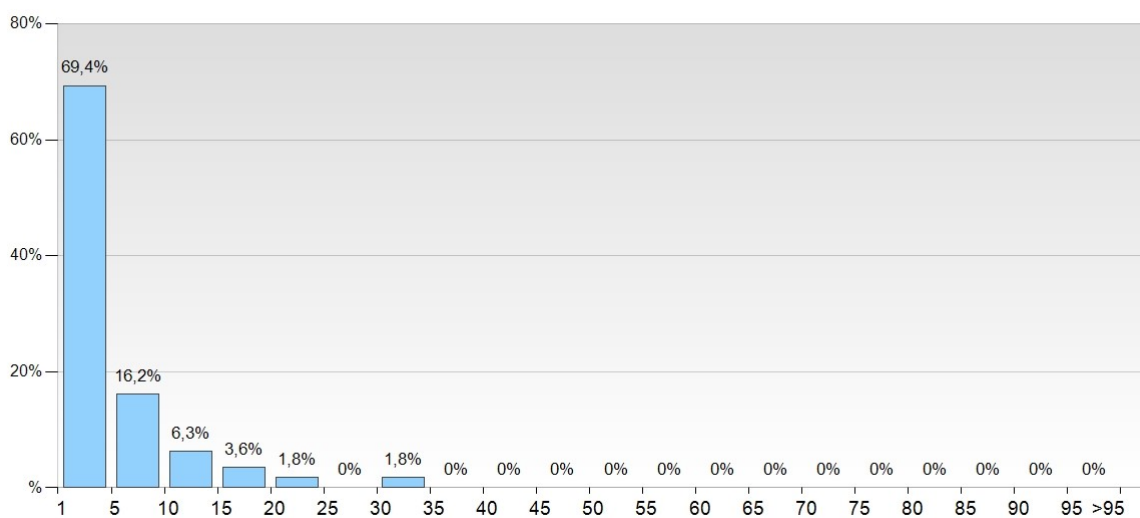
Anesthesia	n	%
Local	110	99,1
General	1	0,9
Total	111	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	5	45,1	180	111	0
Fluoroscopy time	1	4,9	32	110	1

Investigation time (minutes)



Fluoroscopy time (minutes)



Atrioventricular Node (to resynchronisation)

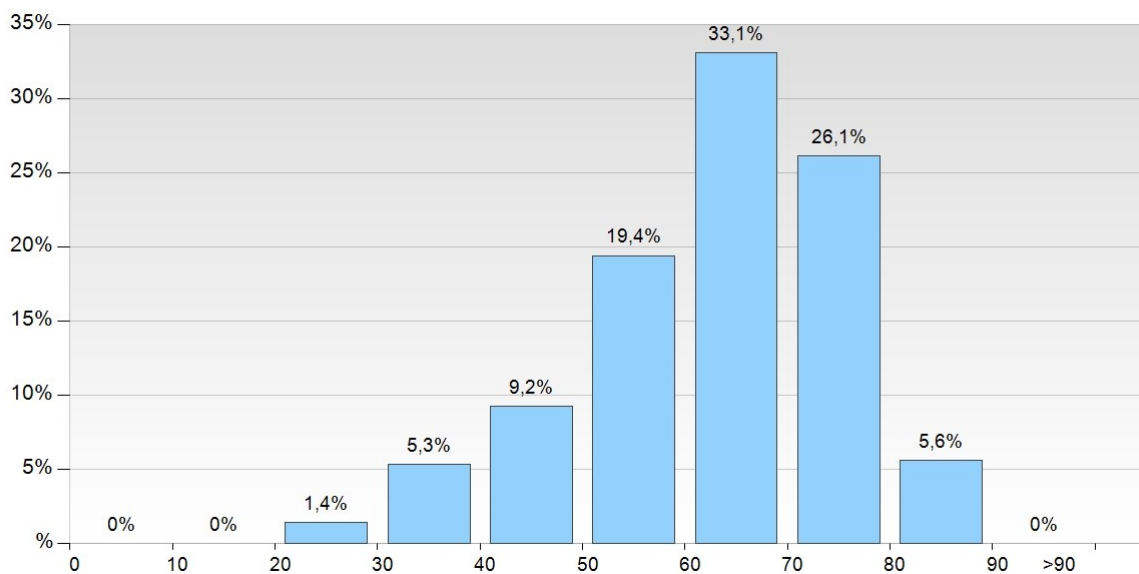
Periprocedural Complications	n
No complications	111
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0
Other	0

Ventricular Tachycardia

Ablation of Ventricular Tachycardia (VT)	n
All interventions	321
VT combined with others	17
VT only	284

The following statistics include VT only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	31	61	87
Male	22	65	87
All	22	64	87

Number of patients	n	%
Females	48	17,58
Males	225	82,42
Total	273	

Ventricular Tachycardia

Cardiopathy (Underlying heart disease)	n	%
Ischemic	125	44,01
None	60	21,13
Dilated	23	8,1
Tachycardiomyopathy	20	7,04
Valvular	9	3,17
RV Cardiomyopathy	9	3,17
Other	8	2,82
Congenital	7	2,46
Infiltrative	7	2,46
Hypertensive Cardiomyopathy	5	1,76
Angioplasty	4	1,41
H(O)CM	3	1,06
Post Valvular Surgery	1	0,35
Brugada Syndrome	1	0,35
Post Congenital Surgery	1	0,35
CABG	1	0,35
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
Total	284	

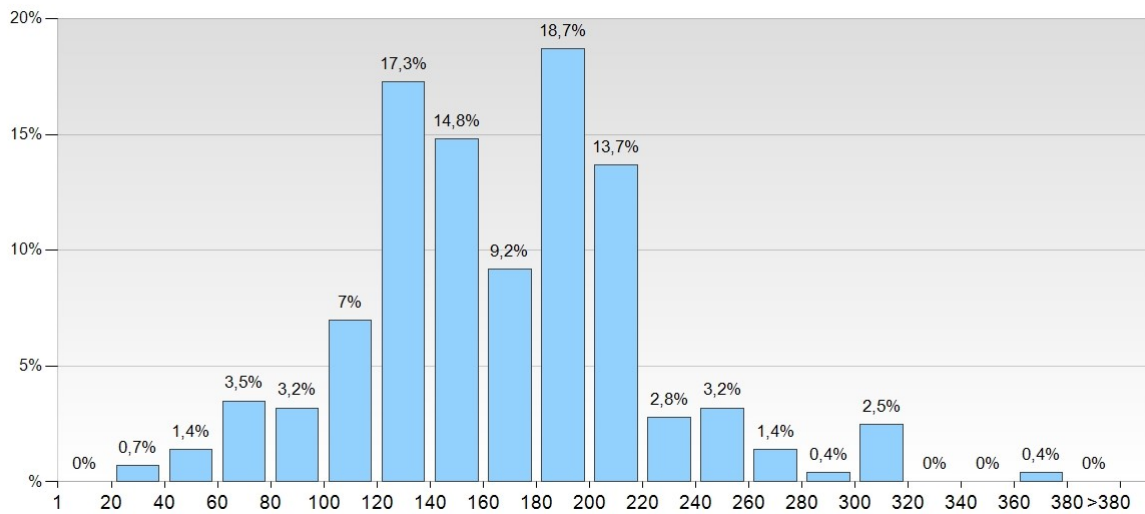
Symptoms	n
Palpitations	200
Dyspnea	50
Syncope	39
SCD	38
Dizziness	35
Other	34
Fatigue	26
None	21
Angina Pectoris	11

Ventricular Tachycardia

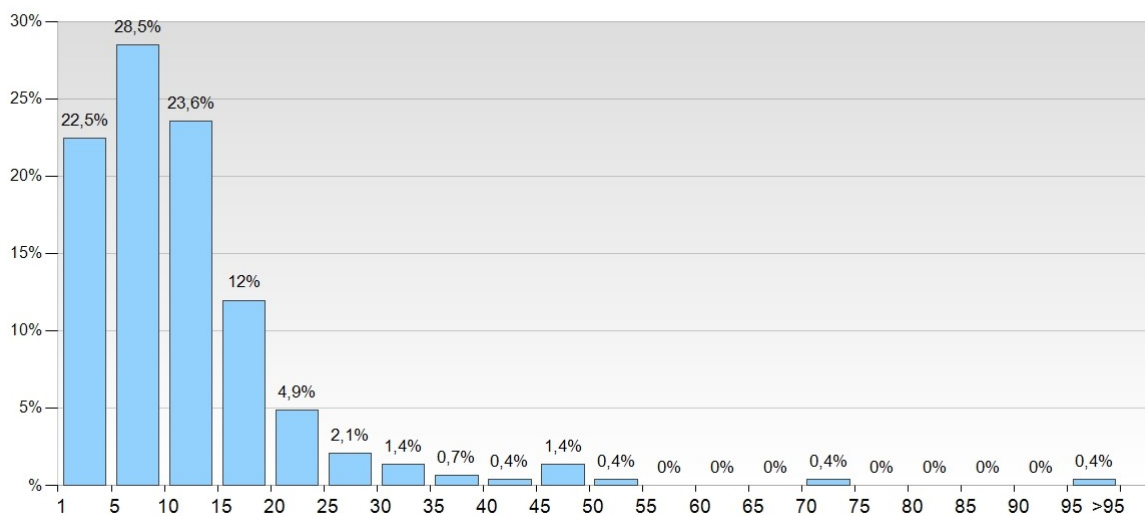
Anesthesia	n	%
Local	175	61,62
General	109	38,38
Total	284	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	28	163,6	368	284	0
Fluoroscopy time	1	12	312	280	4

Investigation time (minutes)



Fluoroscopy time (minutes)



Ventricular Tachycardia

Type	n
Monomorphic	245
Polymorphic	41

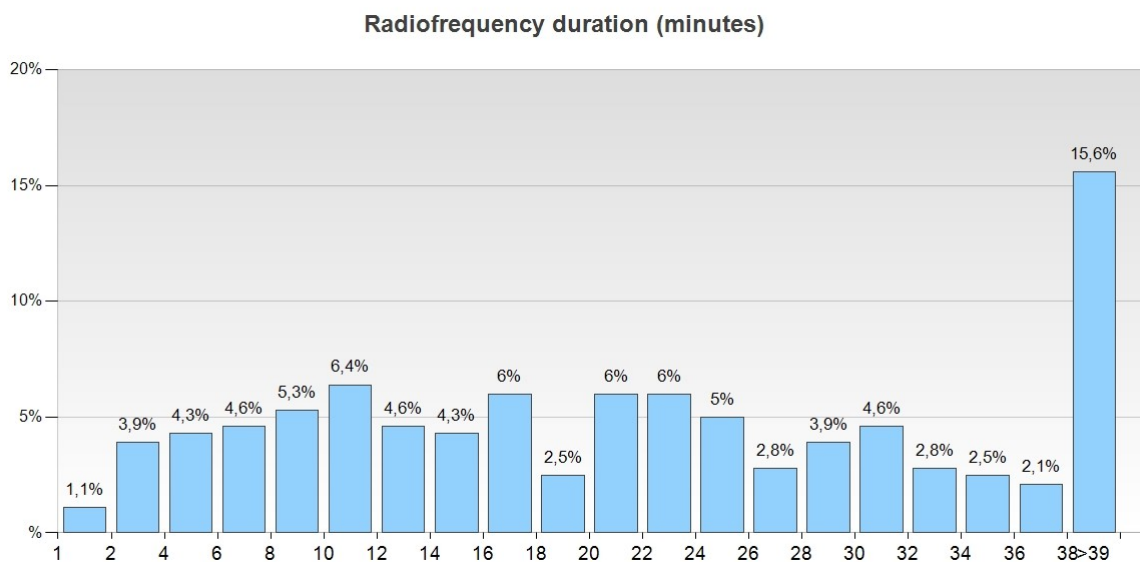
Location	n
Other	157
RVOT / Cusp / PA	48
LVOT / Cusp	40
Mitral Annulus	38
Epicardial LV / RV	25
Left Pap Muscle	13
Fascicular	8
Parahisian	5
Tricuspid Annulus	4
Right Pap Muscle	3
BB Reentry	3

Intervention	n	%
Primary Intervention	223	78,52
Redo	61	21,48

Antiarrhythmic Drugs	n
Beta Blocker	217
Amiodarone	125
None	29
Other	12
Flecainide	10
Sotalol	8
Calcium Antagonist	5
Propafenone	0

Ventricular Tachycardia

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	23	84	268	14
Irrigated Technology				251	



Cryoablation	min.	Ø	max.	n	n ₀ *
Total Duration (minutes)	0	0	0	0	0

	n
Laser ablation	0

	n
Contact force	47

	n
Pulsed field	0

	n
Ethanol	0

	n
Radio ablation	1

	n
Bipolar ablation	0

Number of Induced VT: 498

Ventricular Tachycardia

Access	n	%
Trans-septal, Puncture	131	46,13
Venous	85	29,93
Arterial	44	15,49
Epicardial, Sub-xiphoid	18	6,34
Trans-septal Puncture+arterial	5	1,76
Trans-septal, PFO	1	0,35
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Other	0	0
Total	284	

Mapping	n	%
3D Mapping	246	86,62
Conventional	21	7,39
HD Mesh	15	5,28
Basket	1	0,35
Lasso	1	0,35
Non Contact	0	0
Other	0	0
Total	284	

Ventricular Tachycardia

Catheter Steering	n	%
Conventional	282	99,3
Stereotaxis	2	0,7
Hansen	0	0
Other	0	0
Total	284	

Results	n	%
All Induces VT Ablated	186	65,49
Target VT Ablated	76	26,76
Failure	22	7,75

Periprocedural Complications	n
No complications	275
Tamponade	3
Inguinal Hematoma	2
Other	2
TIA	1
Pericardial Effusion	1
Transient AV Block	1
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
Stroke	0
Myocardial Infarction	0
Pneumothorax	0
Hemothorax	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0

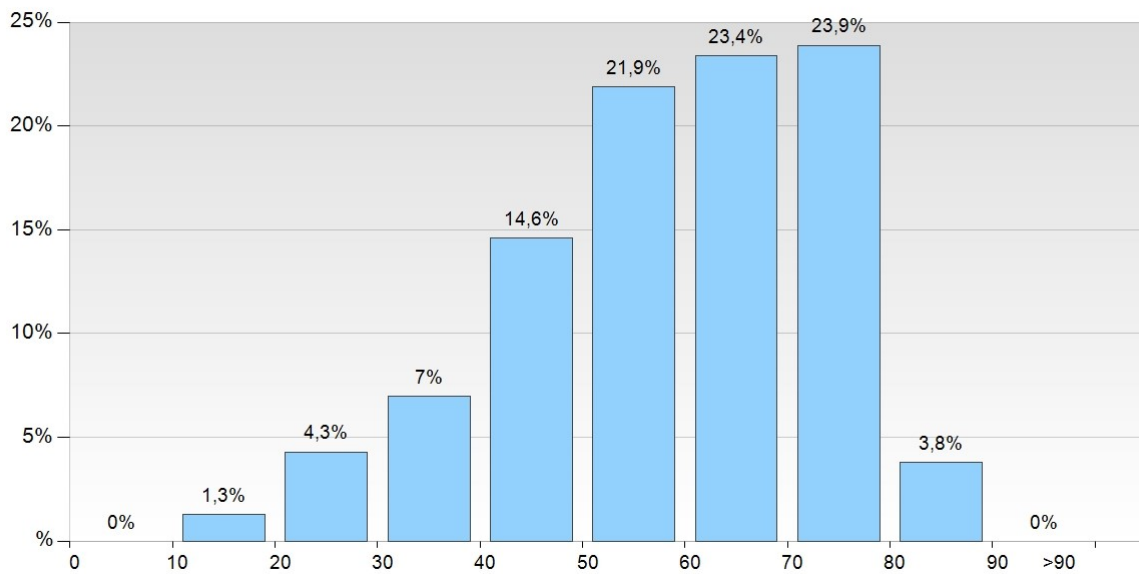
Premature Ventricular Contraction

Ablation of PVC

	n
All interventions	449
PVC combined with others	30
PVC only	398

The following statistics include PVC only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	17	55	87
Male	16	61	83
All	16	59	87

Number of patients	n	%
Females	155	39,74
Males	235	60,26
Total	390	

Premature Ventricular Contraction

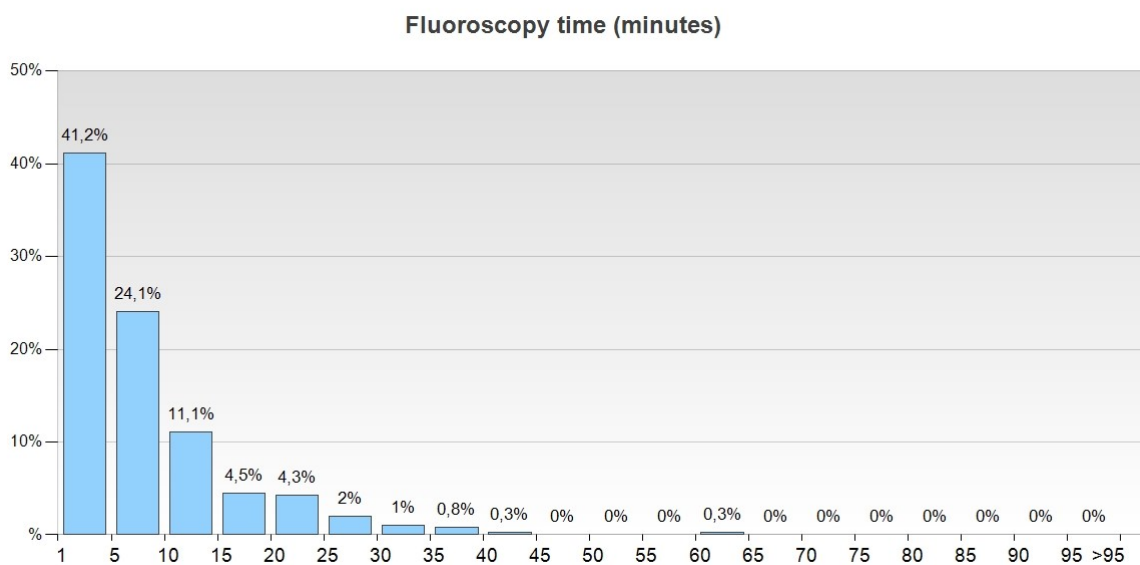
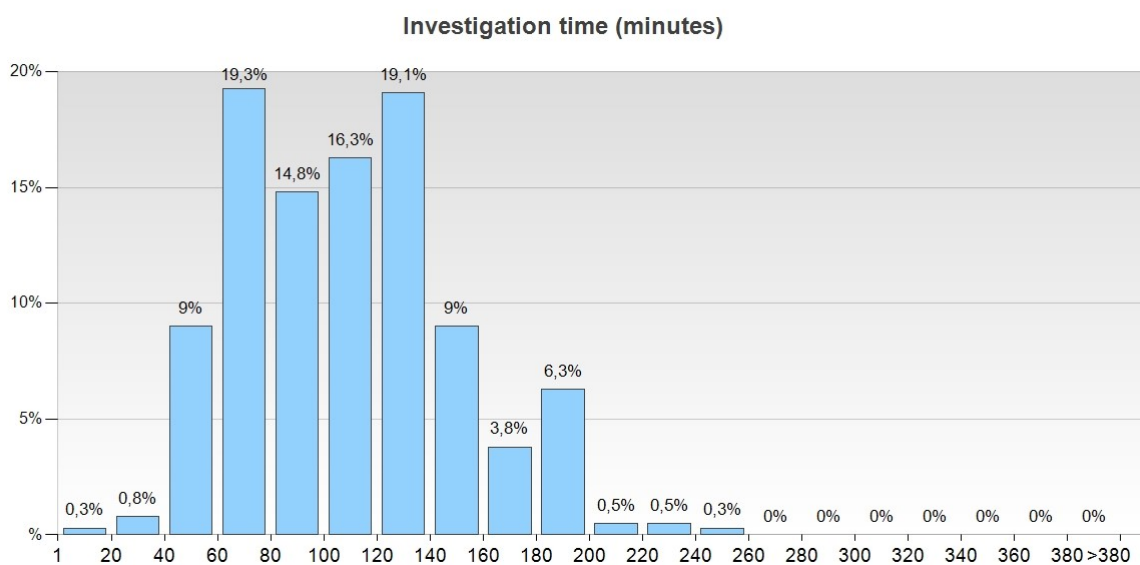
Cardiopathy (Underlying heart disease)	n	%
None	242	60,8
Ischemic	43	10,8
Dilated	36	9,05
Hypertensive Cardiomyopathy	21	5,28
Other	18	4,52
Tachycardiomyopathy	12	3,02
Valvular	11	2,76
H(O)CM	4	1,01
Congenital	3	0,75
Angioplasty	3	0,75
Post Valvular Surgery	2	0,5
RV Cardiomyopathy	2	0,5
Infiltrative	1	0,25
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
CABG	0	0
Post Congenital Surgery	0	0
Total	398	

Symptoms	n
Palpitations	301
Dyspnea	76
Fatigue	45
Dizziness	37
None	30
Other	20
Syncope	13
SCD	5
Angina Pectoris	5

Premature Ventricular Contraction

Anesthesia	n	%
Local	372	93,47
General	26	6,53
Total	398	

Minutes	min.	Ø	max.	n	n ₀ *
Investigation time	2	105,8	246	398	0
Fluoroscopy time	1	7,7	63	356	42



Premature Ventricular Contraction

Type	n
Monomorphic	360
Polymorphic	36
Ischemic	7

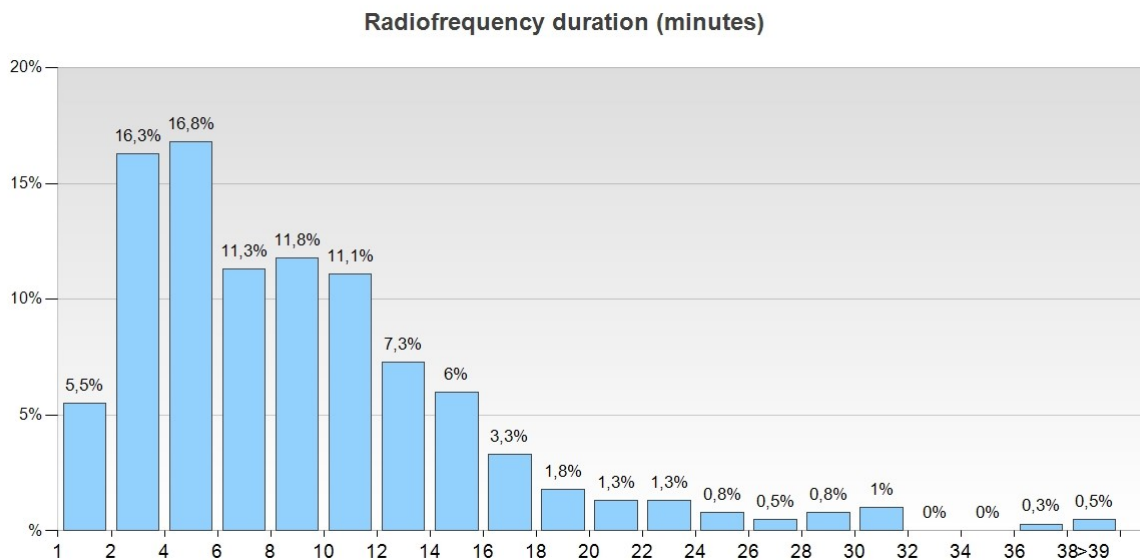
Location	n
RVOT	177
LVOT / Aortic Cusp	135
Other	93
HP System	17
Left Fascicular PVC	8

Site of Ablation	n
Left Ventricle	224
Right Ventricle	208

Intervention	n	%
Primary Intervention	351	88,19
Redo	47	11,81

Premature Ventricular Contraction

Radiofrequency	min.	Ø	max.	n	n ₀ *
Duration (minutes)	1	9	52	388	10
Irrigated Technology				350	



Cryoablation	min.	Ø	max.	n	n ₀ *
Total Duration (minutes)	0	0	0	0	0

	n
Laser ablation	0
	n
Contact force	95
	n
Pulsed field	1
	n
Ethanol	0
	n
Radio ablation	1
	n
Bipolar ablation	0

Premature Ventricular Contraction

Access	n	%
Venous	209	52,51
Arterial	130	32,66
Trans-septal, Puncture	57	14,32
Trans-septal Puncture+arterial	1	0,25
Epicardial, Coronary Sinus	1	0,25
Trans-septal, PFO	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Other	0	0
Total	398	

Mapping	n	%
3D Mapping	380	95,48
Conventional	13	3,27
Basket	3	0,75
Lasso	1	0,25
HD Mesh	1	0,25
Non Contact	0	0
Other	0	0
Total	398	

Premature Ventricular Contraction

Catheter Steering	n	%
Conventional	396	99,5
Stereotaxis	1	0,25
Other	1	0,25
Hansen	0	0
Total	398	

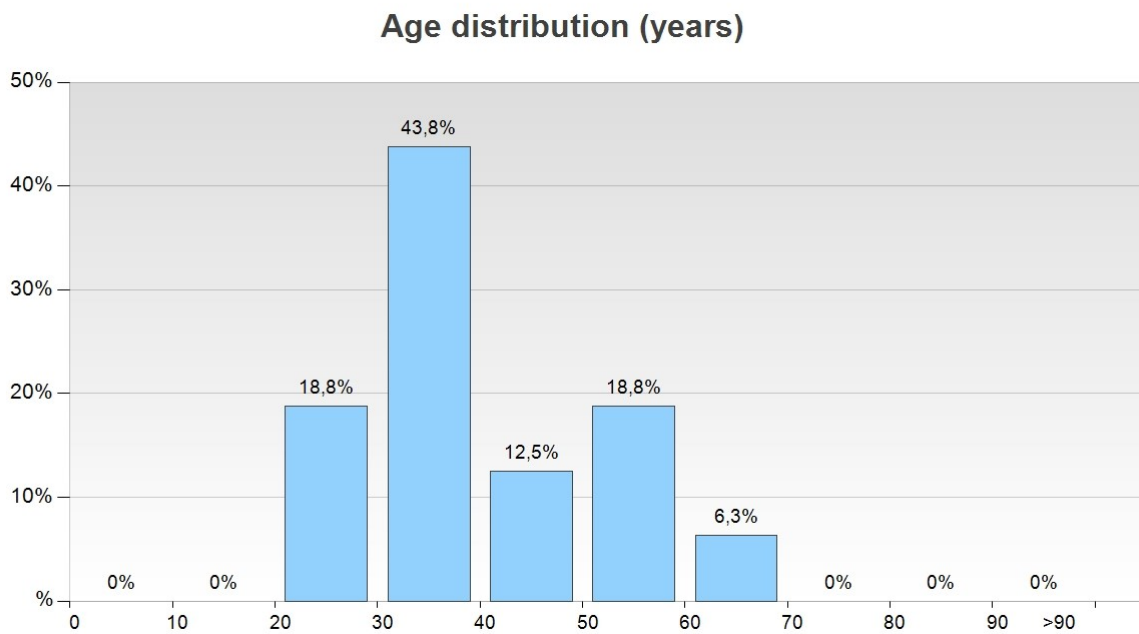
Results	n	%
Success	348	87,44
No Success	50	12,56

Periprocedural Complications	n
No complications	390
Tamponade	3
Transient AV Block	3
Inguinal Hematoma	1
Aortic Dissection	1
AV Fistula	0
Pseudoaneurysm	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Pneumothorax	0
Hemothorax	0
High Degree or Complete AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0
Other	0

Cardioneuro Ablation

Cardioneuro Ablation	n
All interventions	20
Cardioneuro Ablation combined with others	4
Cardioneuro Ablation only	16

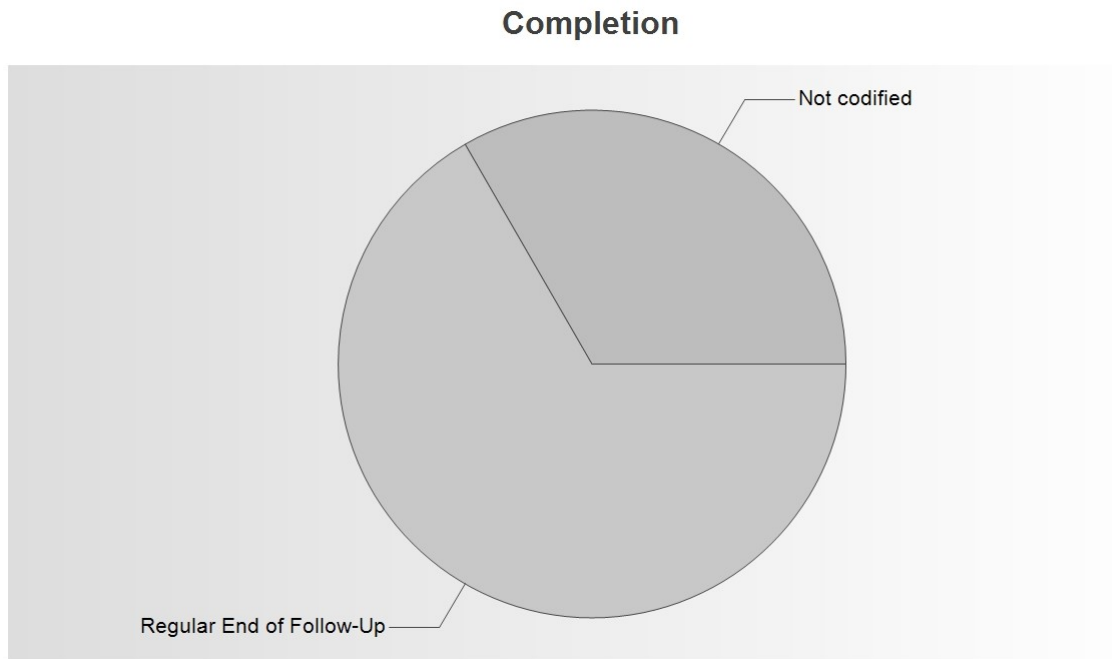
The following statistics include Cardioneuro Ablation only procedures



Age (years)	min.	Ø	max.
Female	25	41	63
Male	24	38	51
All	24	39	63

Number of patients	n	%
Females	8	53,33
Males	7	46,67
Total	15	

Completion



Cause of completion	n	%
Regular End of Follow-Up	2	66,67
Not codified	1	33,33
Lost to Follow-Up	0	0
Death	0	0
Change from Rhythm Control to Rate Control	0	0
Total	3	

The statistics are based on the data from SwissEPnet from 01.01.2023 to 31.12.2023. Its completeness and correctness depends on the complete and correct data entry in the respective hospital. EPS are counted as interventions.

0,0% incomplete records are not included in these statistics.

n₀*: Investigations were reported with 0 minutes and are not included in these statistics.

Ø depicts the arithmetic mean.

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Abbreviations

AF = Atrial Fibrillation
RAFlu = Right Atrial Flutter
LAFlu = Left Atrial Flutter
AT = Atrial Tachycardia
AP = Accessory Pathway
AVNRT = Atrioventricular Nodal Reentry Tachycardia
VT = Ventricular Tachycardia
PVC = Premature Ventricular Contraction
AVN = Atrioventricular Node (to resynchronisation)
AVN(R) = Atrioventricular Node (Rate Control in Atr. Fibrillation)
CN = Cardioneuro Ablation
Other = Other Arrhythmia

The cover picture shows a steerable ablation catheter from the late 90s