

# SWISS STATISTICS OF CATHETER ABLATIONS 2021



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

## Overview

<b>Ablation centers</b>	<b>32</b>
<b>Included in this statistic</b>	<b>30</b>
<b>Number of patients</b>	<b>7943</b>
<b>Number of interventions*</b>	<b>8268</b>
thereof number of EPS	<b>512</b>
<b>Number of ablations</b>	<b>9076</b>

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

## Ablation Centers

Clinic No.	Center	Interventions/ thereof incomplete	thereof aborted	Ablations*
101	Universitätsspital Basel	818 / 0 (0%)	2	830
102	Inselspital Bern	1177 / 0 (0%)	3	1269
103	Hôpital Cantonal Universitaire de Genève	259 / 0 (0%)	0	290
104	Centre Hospitalier Universitaire Vaudois (CHUV)	413 / 0 (0%)	3	428
105	Universitätsspital Zürich	549 / 0 (0%)	4	576
106	Universitäts-Kinderkliniken Zürich	54 / 0 (0%)	0	44
201	Kantonsspital Aarau	132 / 0 (0%)	5	121
202	Kantonsspital Baden	103 / 0 (0%)	3	105
209	Kantonsspital Graubünden, Chur	48 / 0 (0%)	0	44
211	Hôpital Fribourgeois	112 / 0 (0%)	0	118
214	HerzZentrum & Rhythmologie Hirslanden, Zürich	163 / 0 (0%)	0	188
216	Cardiocentro Ticino, Lugano	176 / 0 (0%)	0	173
217	Kantonsspital Luzern, Sursee und Wolhusen	603 / 0 (0%)	0	743
218	Klinik St. Anna, Luzern	44 / 0 (0%)	0	45
220	Hôpital de la Tour	289 / 0 (0%)	0	340
228	Hôpital de Sion	59 / 0 (0%)	3	55
230	Solothurner Spitäler AG	235 / 0 (0%)	0	235
231	Kantonsspital St. Gallen	382 / 0 (0%)	2	356
233	GZO Spital Wetzikon	172 / 0 (0%)	0	174
234	Kantonsspital Winterthur	174 / 0 (0%)	0	229
236	Stadtspital Triemli, Zürich	453 / 0 (0%)	1	511
239	Klinik Beau-Site Bern	326 / 0 (0%)	3	328
241	HerzKlinik Hirslanden, Zürich	299 / 0 (0%)	3	398
246	Hirslandenklinik Aarau	238 / 0 (0%)	1	258
250	Klinik Im Park, Zürich	530 / 0 (0%)	2	689
267	Clinique Cécil	373 / 0 (0%)	0	410
268	Clinique des Grangettes	2 / 1 (50%)	0	1
278	Centre de Cardiologie du Valais	25 / 8 (32%)	0	16
284	Clinique de Genolier	97 / 0 (0%)	1	93
287	HerzGefässKlinik Bethanien	8 / 0 (0%)	0	9
<b>Total</b>	<b>30</b>	<b>8313 / 9 (0%)</b>	<b>36</b>	<b>9076</b>

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

## Omissions

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

No.	Center
251	Herzzentrum Bodensee, Kreuzlingen
288	Herz&Rhythmus Zentrum
Total	2

### 2 centers with more than 10% incomplete data reporting

No.	Center	interventions	thereof incomplete	incomplete (%)
268	Clinique des Grangettes	2	1	50
278	Centre de Cardiologie du Valais	25	8	32
Total	2			

## Ablation centers

### 13 centers with more than 250 interventions

#### Interventions and Ablations

according to number of interventions

No.	Center	Interventions	thereof aborted	Ablations
102	Inselspital Bern	1177	3	1269
101	Universitätsspital Basel	818	2	830
217	Kantonsspital Luzern, Sursee und Wolhusen	603	0	743
105	Universitätsspital Zürich	549	4	576
250	Klinik Im Park, Zürich	530	2	689
236	Stadtspital Triemli, Zürich	453	1	511
104	Centre Hospitalier Universitaire Vaudois (CHUV)	413	3	428
231	Kantonsspital St. Gallen	382	2	356
267	Clinique Cécil	373	0	410
239	Klinik Beau-Site Bern	326	3	328
241	HerzKlinik Hirslanden, Zürich	299	3	398
220	Hôpital de la Tour	289	0	340
103	Hôpital Cantonal Universitaire de Genève	259	0	290
Total	13	6471	23	7168

## Ablation Procedures

according to number of interventions

No.	Center	AF	RAFlu	LAFlu	AT	AP	AVNRT	VT	PVC	AVN	AVN(R)	Other
102	Inselspital Bern	564	289	52	39	39	136	46	42	25	35	2
101	Universitätsspital Basel	387	166	5	27	22	90	30	50	14	39	0
217	Kantonsspital Luzern, Sursee und Wolhusen	290	175	14	44	25	93	19	46	16	21	0
105	Universitätsspital Zürich	213	122	16	22	24	93	21	45	5	15	0
250	Klinik Im Park, Zürich	286	182	26	36	7	93	12	21	2	18	6
236	Stadtspital Triemli, Zürich	251	104	25	19	22	70	0	4	2	14	0
104	Centre Hospitalier Universitaire Vaudois (CHUV)	135	73	20	17	28	49	38	32	0	36	0
231	Kantonsspital St. Gallen	169	51	8	11	22	54	13	13	0	14	1
267	Clinique Cécil	160	82	8	16	17	55	4	19	7	37	5
239	Klinik Beau-Site Bern	162	56	12	26	6	25	3	17	3	18	0
241	HerzKlinik Hirslanden, Zürich	152	116	6	16	11	50	6	16	3	18	4
220	Hôpital de la Tour	141	70	8	17	12	50	2	9	13	18	0
103	Hôpital Cantonal Universitaire de Genève	88	78	26	13	4	32	8	14	7	18	2
Total	13	2998	1564	226	303	239	890	202	328	97	301	20

## Ablation centers

### 9 centers with 100 to 250 interventions

#### Interventions and Ablations

according to number of interventions

No.	Center	Interventions	thereof aborted	Ablations
246	Hirslandenklinik Aarau	238	1	258
230	Solothurner Spitäler AG	235	0	235
216	Cardiocentro Ticino, Lugano	176	0	173
234	Kantonsspital Winterthur	174	0	229
233	GZO Spital Wetzikon	172	0	174
214	HerzZentrum & Rhythmologie Hirslanden, Zürich	163	0	188
201	Kantonsspital Aarau	132	5	121
211	Hôpital Fribourgeois	112	0	118
202	Kantonsspital Baden	103	3	105
Total	9	1505	9	1601

## Ablation Procedures

according to number of interventions

No.	Center	AF	RAFlu	LAFlu	AT	AP	AVNRT	VT	PVC	AVN	AVN(R)	Other
246	Hirslandenklinik Aarau	120	30	5	17	6	53	1	5	4	17	0
230	Solothurner Spitäler AG	100	31	1	19	7	33	10	28	1	5	0
216	Cardiocentro Ticino, Lugano	71	37	1	6	8	13	11	7	2	17	0
234	Kantonsspital Winterthur	110	55	17	2	4	29	1	4	5	2	0
233	GZO Spital Wetzikon	81	41	2	4	1	28	3	3	2	9	0
214	HerzZentrum & Rhythmologie Hirslanden, Zürich	84	37	6	10	1	24	7	8	4	5	2
201	Kantonsspital Aarau	43	33	2	7	3	24	2	3	0	4	0
211	Hôpital Fribourgeois	51	21	1	2	6	15	1	2	7	12	0
202	Kantonsspital Baden	56	16	3	5	2	20	0	0	0	3	0
Total	9	716	301	38	72	38	239	36	60	25	74	2

## Ablation centers

### 8 centers with less than 100 interventions

#### Interventions and Ablations

*according to number of interventions*

No.	Center	Interventions	thereof aborted	Ablations
284	Clinique de Genolier	97	1	93
228	Hôpital de Sion	59	3	55
106	Universitäts-Kinderkliniken Zürich	54	0	44
209	Kantonsspital Graubünden, Chur	48	0	44
218	Klinik St. Anna, Luzern	44	0	45
278	Centre de Cardiologie du Valais	17	0	16
287	HerzGefässKlinik Bethanien	8	0	9
268	Clinique des Grangettes	1	0	1
Total	8	328	4	307

## Ablation procedures

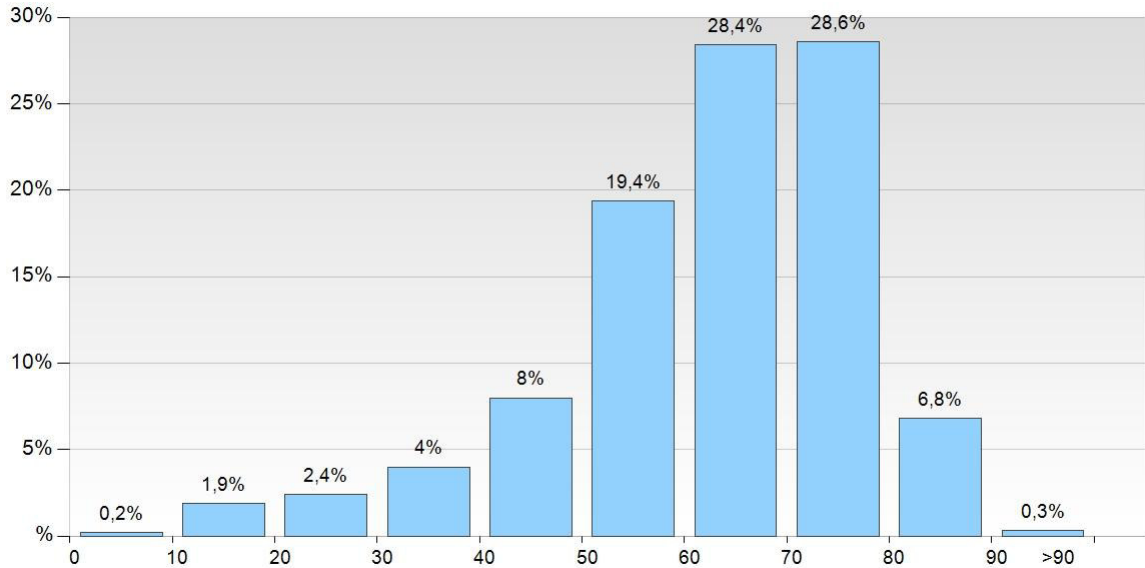
*according to number of interventions*

No.	Center	AF	RAFlu	LAFlu	AT	AP	AVNRT	VT	PVC	AVN	AVN(R)	Other
284	Clinique de Genolier	32	39	2	1	1	10	1	0	1	6	0
228	Hôpital de Sion	3	18	0	3	3	24	1	0	2	1	0
106	Universitäts-Kinderkliniken Zürich	0	0	0	0	28	15	0	1	0	0	0
209	Kantonsspital Graubünden, Chur	26	2	1	1	1	12	0	0	0	0	1
218	Klinik St. Anna, Luzern	13	13	0	1	3	14	0	0	0	0	1
278	Centre de Cardiologie du Valais	11	1	0	1	2	1	0	0	0	0	0
287	HerzGefässKlinik Bethanien	1	2	0	1	0	0	0	0	0	5	0
268	Clinique des Grangettes	0	0	0	0	0	0	0	0	0	1	0
Total	8	86	75	3	8	38	76	2	1	3	13	2

## All ablation types

Number of ablations, not aborted: 9076

Age distribution (years)



Age (years)	min.	Ø	max.
Female	6	64	98
Male	7	63	99
<b>All</b>	<b>6</b>	<b>63</b>	<b>99</b>

Number of patients	n	%
Females	2765	34,81
Males	5178	65,19
<b>Total</b>	<b>7943</b>	

Anesthesia	n	%
Local	6180	74,75
General	2088	25,25
<b>Total</b>	<b>8268</b>	



Combinations of ablations performed during one intervention

<b>Number of interventions</b>	<b>7756</b>
AF	2771
AVNRT	1086
RAFlu	1008
AF RAFlu	738
AVN(R)	368
PVC	366
AP	299
VT	224
AT	218
AVN	106
LAFIu	102
AF LAFIu	75
AF LAFIu RAFlu	51
AF AT	45
AF RAFlu AT	37
AF AVNRT	36
RAFlu AT	28
AT AVNRT	27
LAFIu RAFlu	24
RAFlu AVNRT	17
Other	16
AF RAFlu AVNRT	15
AVN AVN(R)	14
AP AVNRT	8
AF LAFIu AT	6
AF PVC	5
LAFIu AT	5
AVNRT VT	5
RAFlu AP	4
VT PVC	4
AF RAFlu PVC	4
RAFlu PVC	3
AF AT AVNRT	3
AVNRT PVC	3
AVNRT Other	2
RAFlu AVN(R)	2
AT Other	2
AF LAFIu RAFlu AT	2
AP PVC	2
AF AVN(R)	2
AT VT	2
AF RAFlu AVN	2
RAFlu AVN	2
VT AVN	1
AF Other	1
RAFlu AT AVNRT	1
AF AP	1
AF LAFIu AVNRT	1
RAFlu Other	1
AT AVN(R)	1
PVC Other	1
AF VT	1
AF RAFlu VT	1
AT AP	1
AT PVC	1
LAFIu RAFlu AT	1
RAFlu AT Other	1
AF AT AVN(R)	1
AF AVNRT VT	1
AF AT VT	1

Only completely documented and non-aborted interventions are counted.

## Ablation procedures or EPS

<b>Atrial Fibrillation</b>	<b>3800</b>
Paroxysmal	2514
Persistent	1207
Long-standing Persistent	79

<b>Left Atrial Flutter</b>	<b>267</b>
Roof-dependent	96
Perimitral	131
Peri-Incisional	9
Peri Ostial Pulm. Vein	29
Other	81

<b>Accessory Pathway</b>	<b>315</b>
Concealed	117
WPW	172
Asymptomatic Preexcitation	27
Atrio-Fascicular	4
PJRT	2
Mahaim	5
Other	3

<b>AVN (to Resync.)</b>	<b>125</b>
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<b>AVN (Rate Control)</b>	<b>388</b>
Paroxysmal	96
Persistent	180
Long-standing Persistent	112

<b>Other Arrhythmia</b>	<b>24</b>
PAC	8
JET	12
SNT	0
Other	5

<b>Right Atrial Flutter</b>	<b>1940</b>
Cavotricuspid	1907
Scar Related	47
Other	15

<b>Atrial Tachycardia</b>	<b>383</b>
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<b>AVNRT</b>	<b>1205</b>
Slow-Fast	1121
Fast-Slow	50
Slow-Slow	45

<b>VT</b>	<b>240</b>
Monomorphic	209
Polymorphic	36
RVOT / Cusp / PA	42
Tricuspid Annulus	9
Right Pap Muscle	1
Parahisian	7
BB Reentry	4
LVOT / Cusp	44
Mitral Annulus	19
Fascicular	12
Left Pap Muscle	14
Epicardial LV / RV	9
Other	111

<b>PVC</b>	<b>389</b>
Monomorphic	350
Polymorphic	40
Ischemic	3
RVOT	172
LVOT / Aortic Cusp	121
Left Fascicular VT	8
HP System	21
Other	97

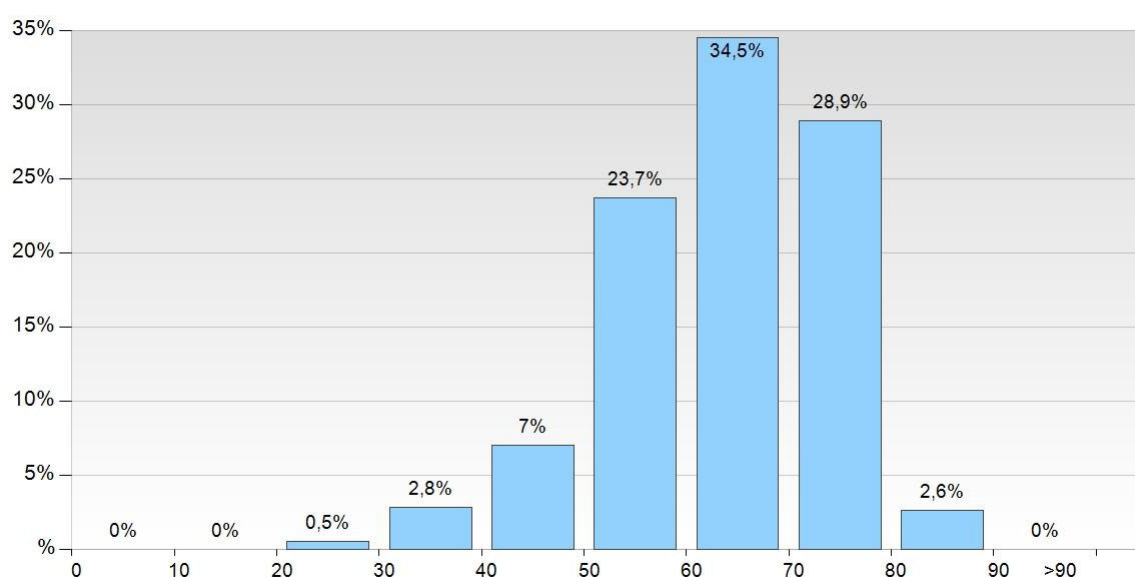
<b>EPS only</b>	<b>512</b>
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## Atrial Fibrillation

<b>Ablation of Atrial Fibrillation (AF)</b>	<b>n</b>
All interventions	3800
AF combined with others	1029
AF combined with RAFla	738
AF only	2771

The following statistics include AF only procedures

**Age distribution (years)**



<b>Age (years)</b>	<b>min.</b>	<b>Ø</b>	<b>max.</b>
Female	19	68	95
Male	21	63	85
<b>All</b>	<b>19</b>	<b>64</b>	<b>95</b>

<b>Number of patients</b>	<b>n</b>	<b>%</b>
Females	848	31,28
Males	1863	68,72
<b>Total</b>	<b>2711</b>	

## Atrial Fibrillation

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	1623	58,57
Hypertensive Cardiomyopathy	355	12,81
Ischemic	226	8,16
Tachycardiomyopathy	218	7,87
Valvular	114	4,11
Dilated	93	3,36
H(O)CM	52	1,88
Other	32	1,15
Congenital	19	0,69
Post Valvular Surgery	14	0,51
Infiltrative	7	0,25
Angioplasty	6	0,22
CABG	4	0,14
Post Congenital Surgery	3	0,11
Channelopathy long QT	2	0,07
RV Cardiomyopathy	2	0,07
Brugada Syndrome	1	0,04
Channelopathy short QT	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
<b>Total</b>	<b>2771</b>	

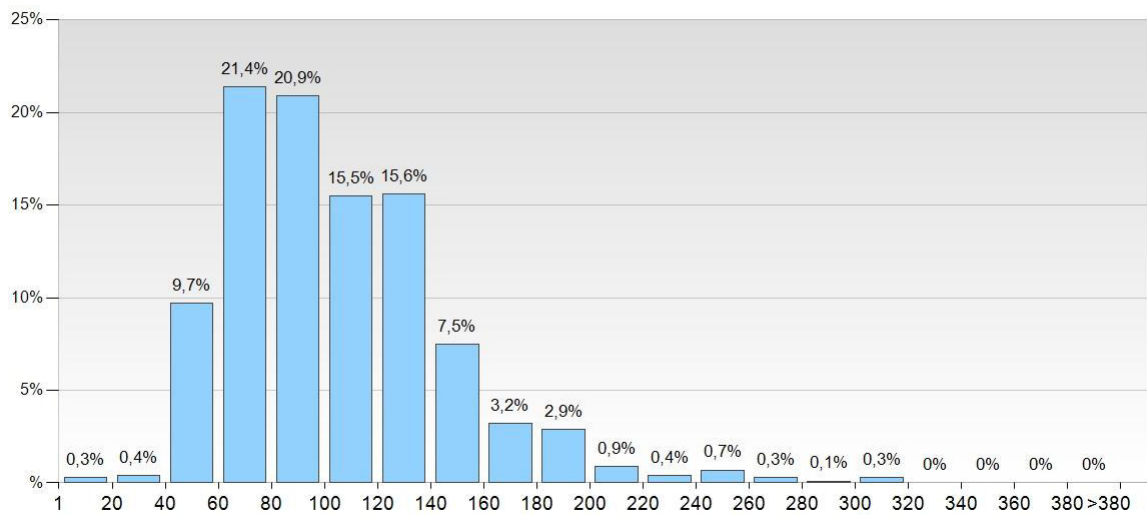
<b>Symptoms</b>	<b>n</b>
Palpitations	2333
Dyspnea	832
Fatigue	589
Dizziness	276
Other	120
None	101
Angina Pectoris	76
Syncope	52
SCD	5

## Atrial Fibrillation

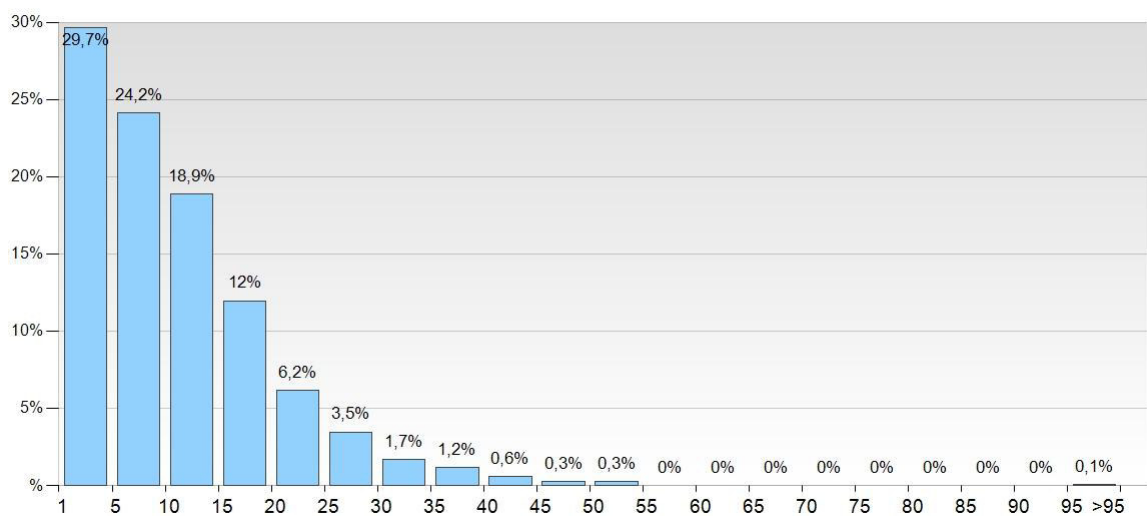
Anesthesia	n	%
Local	1633	58,93
General	1138	41,07
<b>Total</b>	<b>2771</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	2	101,5	307	2771	0
Fluoroscopy time	1	10,7	152	2734	37

Investigation time (minutes)



Fluoroscopy time (minutes)



## Atrial Fibrillation

Type of AF	n	%
Paroxysmal	1852	66,84
Persistent	869	31,36
Long-standing Persistent (>1 Year)	50	1,8

EHRA-Score	n	%
Score I	324	11,69
Score II	1427	51,5
Score III	949	34,25
Score IV	71	2,56

Type of Intervention	n	%
Percutaneous	2766	99,82
Hybrid (Epicardial + Endovascular)	2	0,07
Surgical Ablation	3	0,11

Intervention	n	%
Primary Intervention	2198	79,32
Redo	573	20,68

Antiarrhythmic Drugs	n
Beta Blocker	1863
Amiodarone	507
None	462
Flecainide	268
Calcium Antagonist	107
Sotalol	94
Digitalis	23
Propafenone	18
Other	13
Dronedarone	10

Thromboembolic Risk Factors	n
Hypertension	1171
Prior MI, Per. Artery Disease, Aortic Plaque	195
Diabetes	188
Congestive Heart Failure, LV dysfunction	179
Stroke, TIA, Other Embolic Event	121

## Atrial Fibrillation

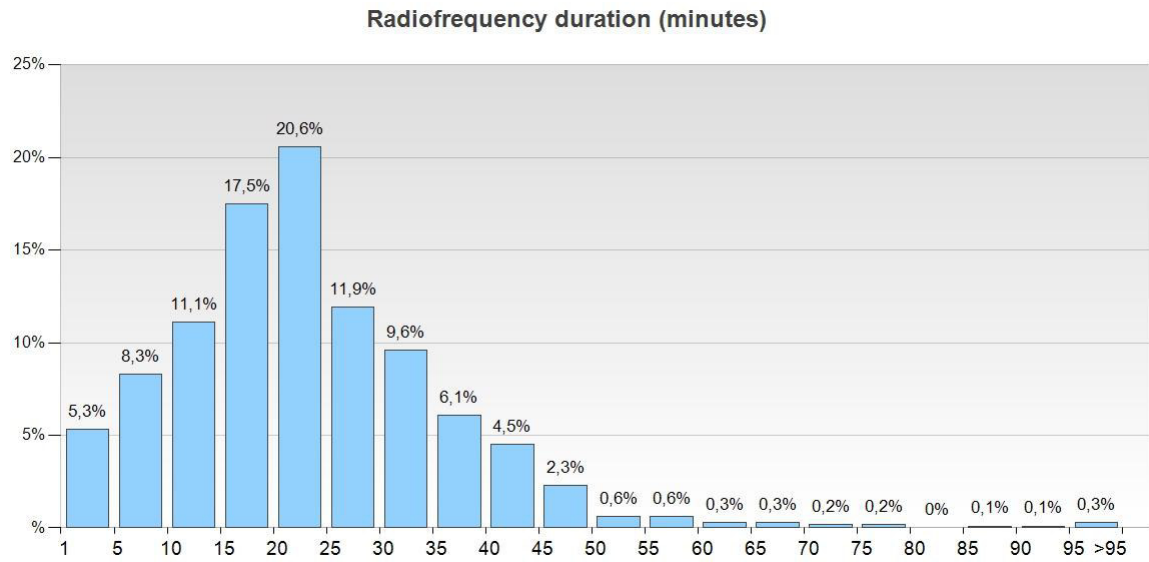
<b>Anticoagulation, Antiaggregation</b>	<b>n</b>
Factor Xa-Antagonist	2463
None	178
Vitamin K-Antagonist	85
Direct Thrombin Inhibitor	28
Aspirin	25
Clopidogrel	11
Other	6
Prasugrel	2
Ticagrelor	0

<b>CHA<sub>2</sub>DS<sub>2</sub>-VASc Score</b>	<b>n</b>
Score = 0	594
Score = 1	795
Score = 2	681
Score = 3	388
Score = 4	222
Score = 5	68
Score = 6	20
Score = 7	3
<b>Average Score</b>	<b>1,69</b>

<b>Site of Ablation</b>	<b>n</b>
RSPV	2554
RIPV	2534
LSPV	2533
LIPV	2516
Roof Line	105
Non-PV Focus	71
CFAE	70
Other Lines	60
SVC	45
RMPV	36
Mitral Isthmus Line	35
Vein of Marshall	15
Other Veins	9
Septal Line	7

## Atrial Fibrillation

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	23	140	1764	3
Irrigated Technology				1674	
RF Duty Cycled				261	





## Atrial Fibrillation

<b>Cryoablation</b>	<b>min.</b>	<b>Ø</b>	<b>max.</b>	<b>n</b>	<b>n<sub>0</sub>*</b>
Total Duration (minutes)	4	22	927	757	6

	<b>n</b>
Additional RF or Cryo Cath Needed	5

	<b>n</b>
Laser Balloon	0

	<b>n</b>
Contact Force	859

	<b>n</b>
Irrigated Multielectrode Ablation	2

<b>Access</b>	<b>n</b>	<b>%</b>
Trans-septal, Puncture	2512	90,65
Trans-septal, PFO	249	8,99
Other	10	0,36
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
<b>Total</b>	<b>2771</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
3D Mapping	1892	68,28
Conventional	461	16,64
Lasso	384	13,86
Basket	12	0,43
Other	10	0,36
Non Contact	7	0,25
HD Mesh	5	0,18
<b>Total</b>	<b>2771</b>	

## Atrial Fibrillation

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	2759	99,57
Stereotaxis	6	0,22
Other	4	0,14
Hansen	2	0,07
<b>Total</b>	<b>2771</b>	

<b>Results</b>	<b>n</b>
All Veins Isolated	2749
Roof Line Block Confirmed	51
Not All Veins Isolated	19
Mitral Isthmus Line Block Confirmed	17
Mitral Isthmus Line Block Not Confirmed	8
Roof Line Block Not Confirmed	1

<b>Sinus Rhythm</b>	<b>n</b>
Spontaneous	1606
With Electrical Cardioversion / Stimulation	794
By Ablation	374
Not Achieved	28
AAD	12

## Atrial Fibrillation

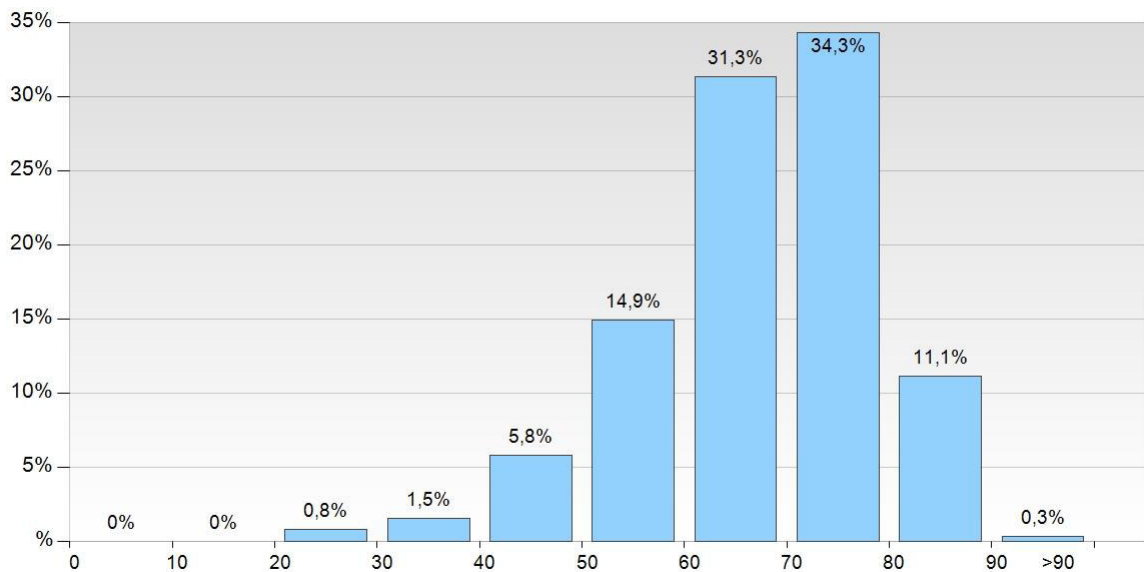
<b>Periprocedural Complications</b>	<b>n</b>
No complications	2721
Phrenic Nerve Paralysis	15
Tamponade	13
Inguinal Hematoma	10
Other	7
Pericardial Effusion	6
TIA	2
AV Fistula	1
Pulmonary Oedema	1
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
Stroke	0
Myocardial Infarction	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
High Degree or Complete AV Block	0
Infection	0
PV Stenosis	0
Valvular Lesion	0
Death	0

## Right Atrial Flutter

Ablation of Right Atrial Flutter (RAFlu)	n
All interventions	1940
RAFlu combined with others	932
RAFlu only	1008

The following statistics include RAFlu only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	28	69	95
Male	21	68	92
<b>All</b>	<b>21</b>	<b>68</b>	<b>95</b>

Number of patients	n	%
Females	218	21,84
Males	780	78,16
<b>Total</b>	<b>998</b>	

## Right Atrial Flutter

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	444	44,05
Ischemic	141	13,99
Hypertensive Cardiomyopathy	108	10,71
Valvular	81	8,04
Tachycardiomyopathy	78	7,74
Dilated	37	3,67
Other	34	3,37
Congenital	19	1,88
Post Valvular Surgery	18	1,79
H(O)CM	14	1,39
CABG	10	0,99
Infiltrative	7	0,69
Post Congenital Surgery	6	0,6
Angioplasty	5	0,5
RV Cardiomyopathy	5	0,5
Early Repolarization Syndrome	1	0,1
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
<b>Total</b>	<b>1008</b>	

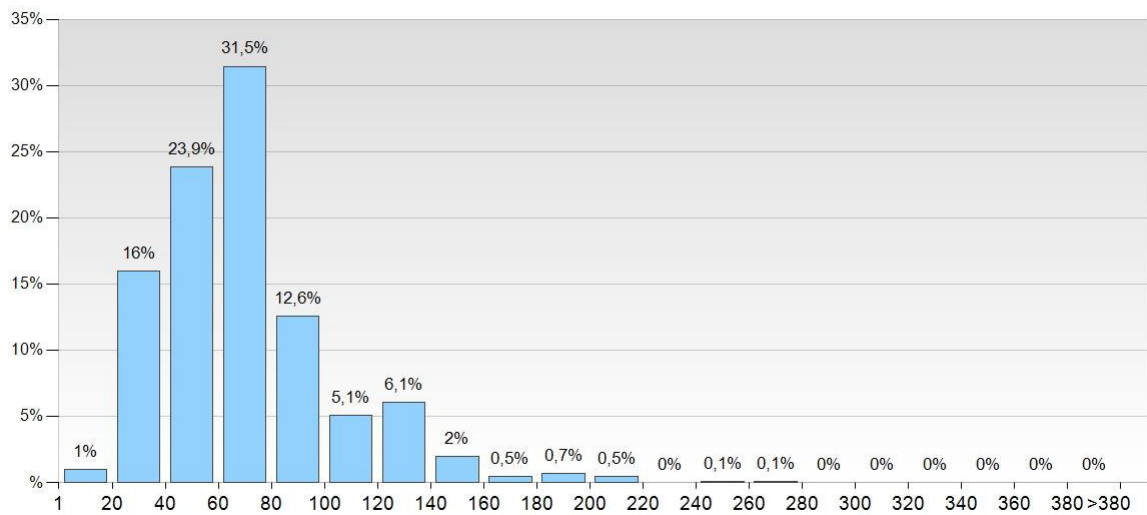
<b>Symptoms</b>	<b>n</b>
Palpitations	749
Dyspnea	334
Fatigue	218
Dizziness	73
None	51
Other	49
Syncope	26
Angina Pectoris	20
SCD	2

## Right Atrial Flutter

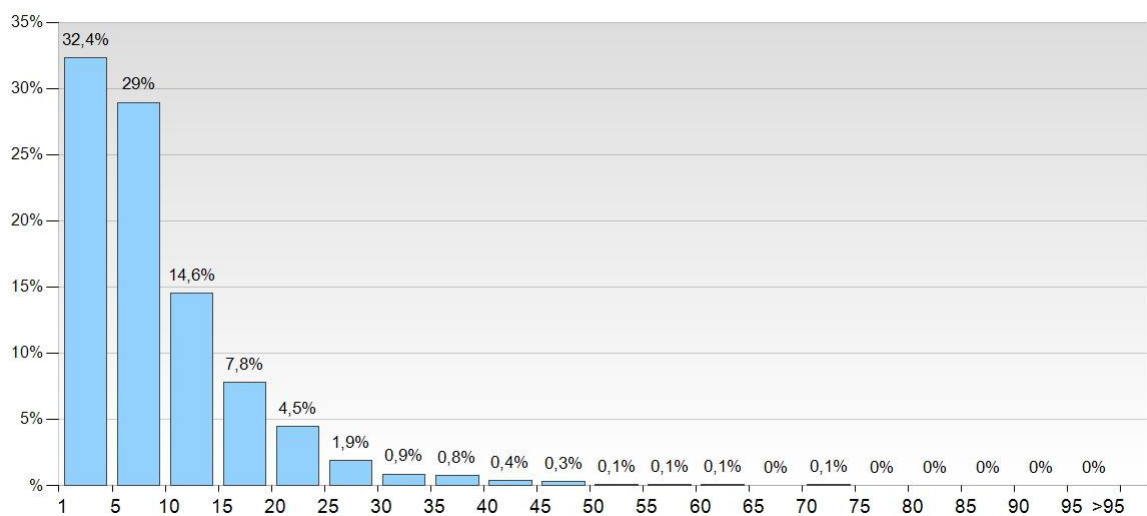
Anesthesia	n	%
Local	915	90,77
General	93	9,23
<b>Total</b>	<b>1008</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	4	67,2	270	1008	0
Fluoroscopy time	1	9	70	937	71

Investigation time (minutes)



Fluoroscopy time (minutes)



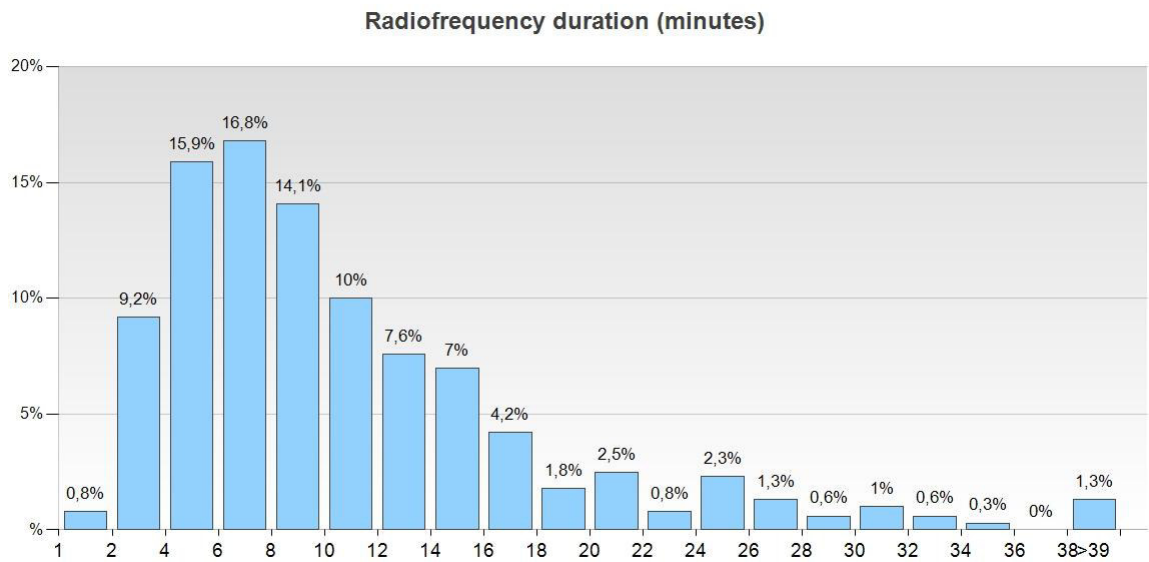
## Right Atrial Flutter

Type of Flutter	n
Cavotricuspid	987
Scar related	35
Other	9

Intervention	n	%
Primary Intervention	943	93,55
Redo	65	6,45

## Right Atrial Flutter

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	11	150	988	20
Irrigated Technology				808	





## Right Atrial Flutter

<b>Cryoablation</b>	<b>min.</b>	<b>Ø</b>	<b>max.</b>	<b>n</b>	<b>n<sub>0</sub>*</b>
Total Duration (minutes)	0	0	0	0	0

	<b>n</b>
Additional RF or Cryo Cath Needed	1

<b>Access</b>	<b>n</b>	<b>%</b>
Venous	1007	99,9
Other	1	0,1
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
<b>Total</b>	<b>1008</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
Conventional	533	52,88
3D Mapping	465	46,13
Non Contact	4	0,4
Basket	4	0,4
Lasso	1	0,1
Other	1	0,1
HD Mesh	0	0
<b>Total</b>	<b>1008</b>	

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	1003	99,5
Stereotaxis	4	0,4
Other	1	0,1
Hansen	0	0
<b>Total</b>	<b>1008</b>	

<b>Results</b>	<b>n</b>	<b>%</b>
Block confirmed	990	98,21
Block not confirmed	18	1,79

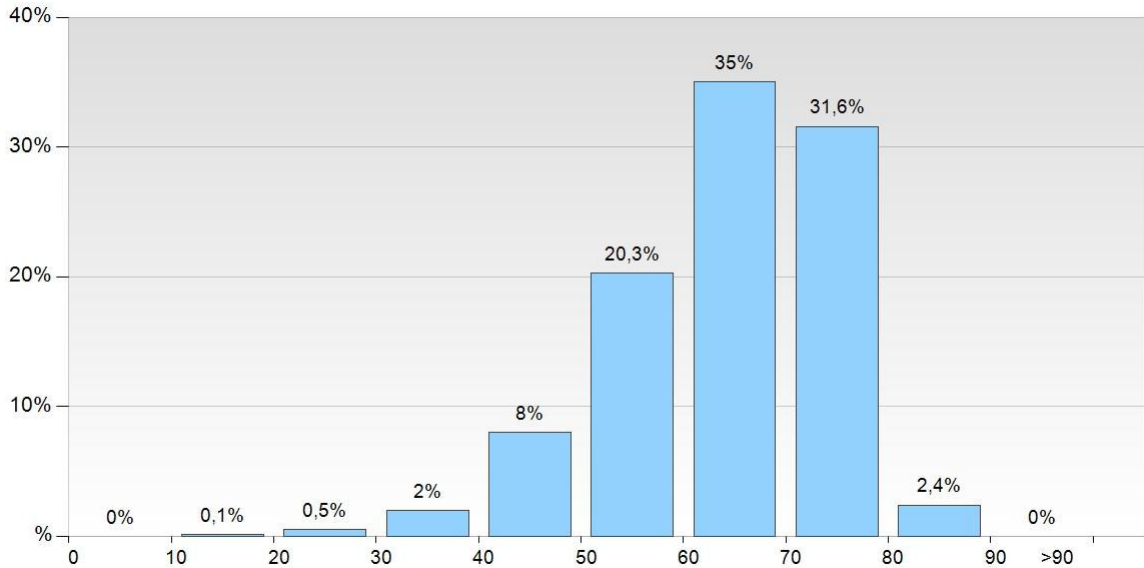
## Right Atrial Flutter

<b>Periprocedural Complications</b>	<b>n</b>
No complications	1003
Transient AV Block	2
Pseudoaneurysm	1
Myocardial Infarction	1
Pericardial Effusion	1
Other	1
Inguinal Hematoma	0
AV Fistula	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Tamponade	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

## Atrial Fibrillation combined with Right Atrial Flutter

Number of interventions (AF with RAFlu): 738

Age distribution (years)



Age (years)	min.	Ø	max.
Female	40	67	86
Male	20	64	89
<b>All</b>	<b>20</b>	<b>65</b>	<b>89</b>

Number of patients	n	%
Females	162	22,04
Males	573	77,96
<b>Total</b>	<b>735</b>	

## Atrial Fibrillation combined with Right Atrial Flutter

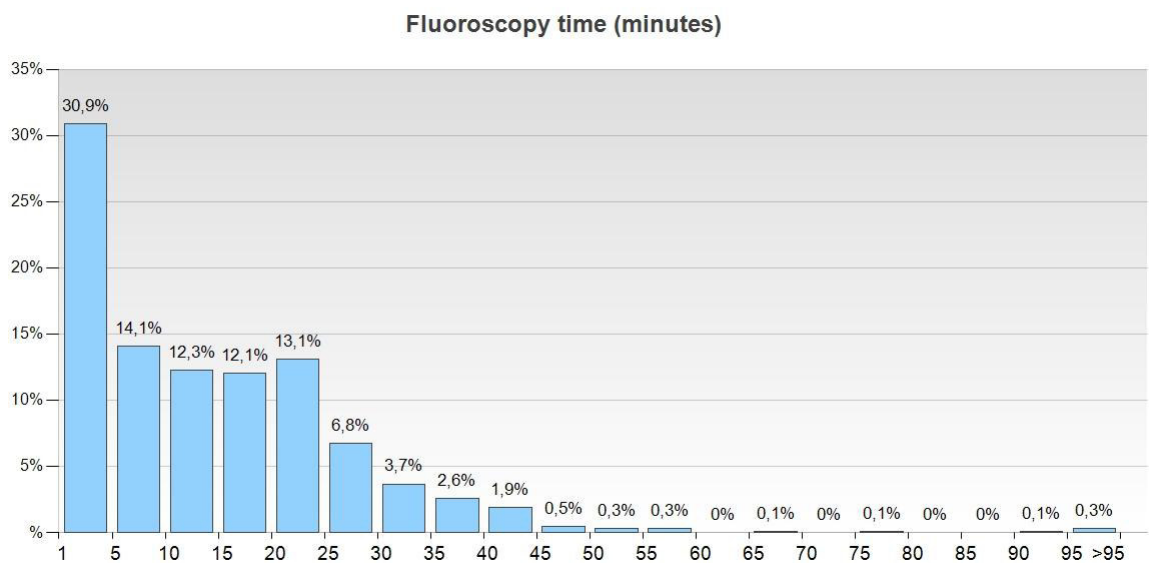
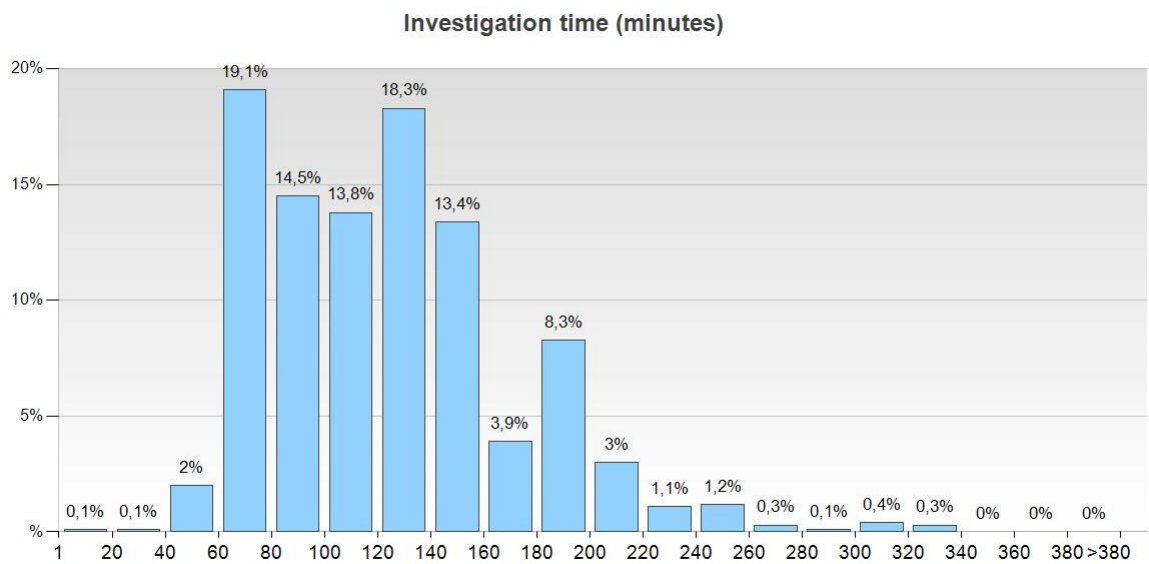
<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	471	63,82
Hypertensive Cardiomyopathy	55	7,45
Tachycardiomyopathy	53	7,18
Ischemic	40	5,42
Valvular	34	4,61
Other	27	3,66
Dilated	24	3,25
Angioplasty	18	2,44
H(O)CM	7	0,95
Post Valvular Surgery	4	0,54
Congenital	3	0,41
Infiltrative	2	0,27
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
<b>Total</b>	<b>738</b>	

<b>Symptoms</b>	<b>n</b>
Palpitations	661
Fatigue	242
Dyspnea	182
Dizziness	54
Other	42
None	15
Syncope	12
Angina Pectoris	7
SCD	0

## Atrial Fibrillation combined with Right Atrial Flutter

Anesthesia	n	%
Local	340	46,07
General	398	53,93
<b>Total</b>	<b>738</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	10	121	330	738	0
Fluoroscopy time	1	14,1	120	732	6



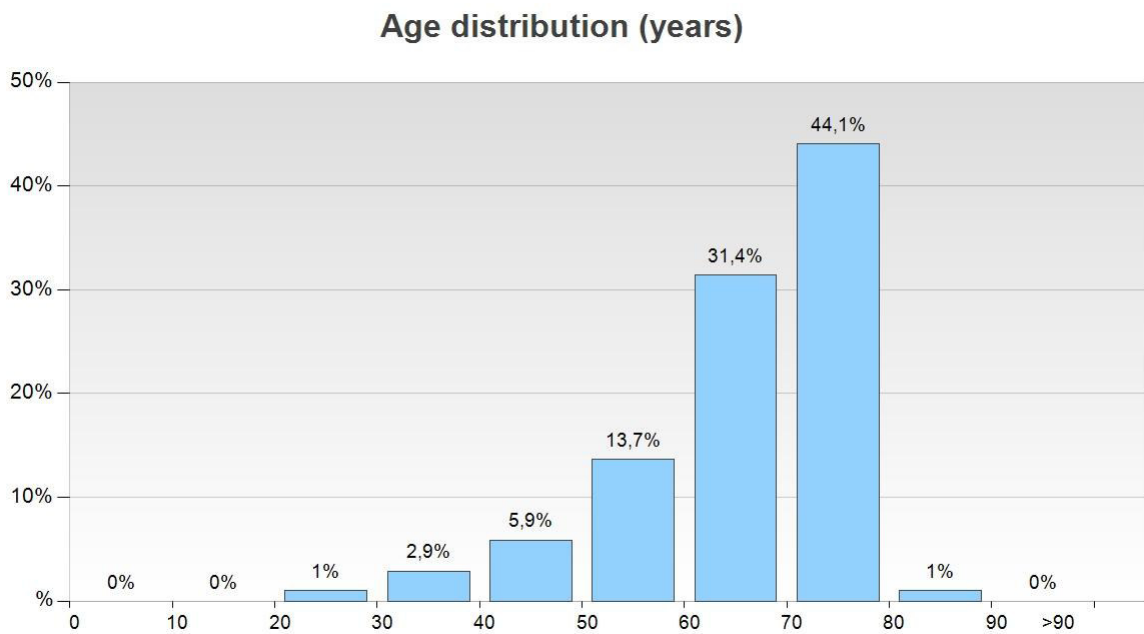
## Atrial Fibrillation combined with Right Atrial Flutter

<b>Periprocedural Complications</b>	<b>n</b>
No complications	727
Inguinal Hematoma	5
Aortic Dissection	2
Other	2
Pericardial Effusion	1
Tamponade	1
Phrenic Nerve Paralysis	1
AV Fistula	0
Pseudoaneurysm	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
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	267
LAFlu combined with others	165
LAFlu only	102

The following statistics include LAFlu only procedures



Age (years)	min.	Ø	max.
Female	43	69	82
Male	30	65	79
<b>All</b>	<b>30</b>	<b>66</b>	<b>82</b>

Number of patients	n	%
Females	27	27
Males	73	73
<b>Total</b>	<b>100</b>	

## Left Atrial Flutter

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	42	41,18
Hypertensive Cardiomyopathy	17	16,67
Ischemic	9	8,82
Tachycardiomyopathy	7	6,86
Valvular	6	5,88
Congenital	4	3,92
H(O)CM	3	2,94
Dilated	3	2,94
Post Valvular Surgery	3	2,94
Post Congenital Surgery	2	1,96
Infiltrative	2	1,96
Other	2	1,96
RV Cardiomyopathy	1	0,98
Angioplasty	1	0,98
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
<b>Total</b>	<b>102</b>	

<b>Symptoms</b>	<b>n</b>
Palpitations	82
Dyspnea	41
Fatigue	28
Dizziness	11
Other	4
Angina Pectoris	3
None	1
SCD	0
Syncope	0

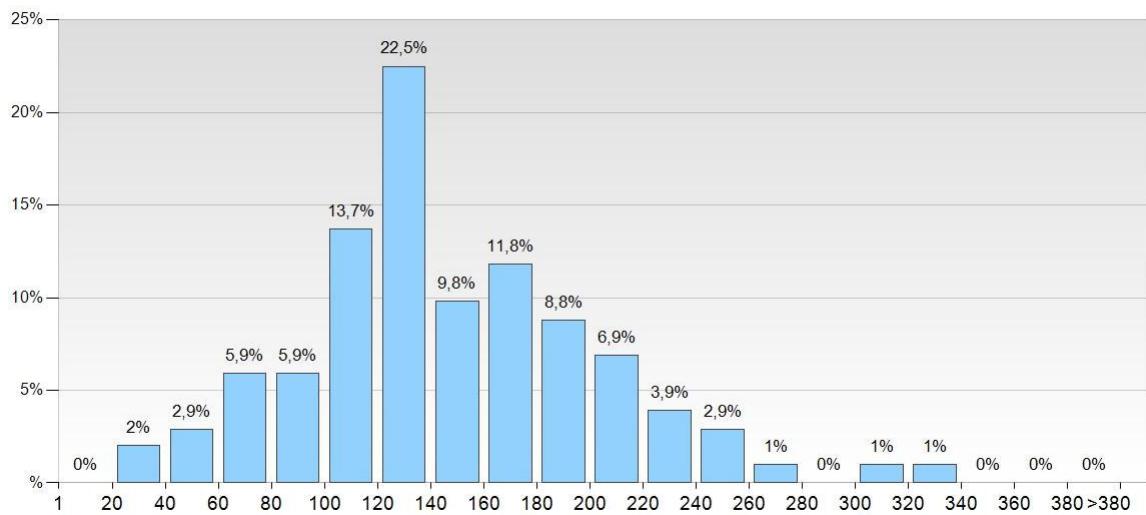


### Left Atrial Flutter

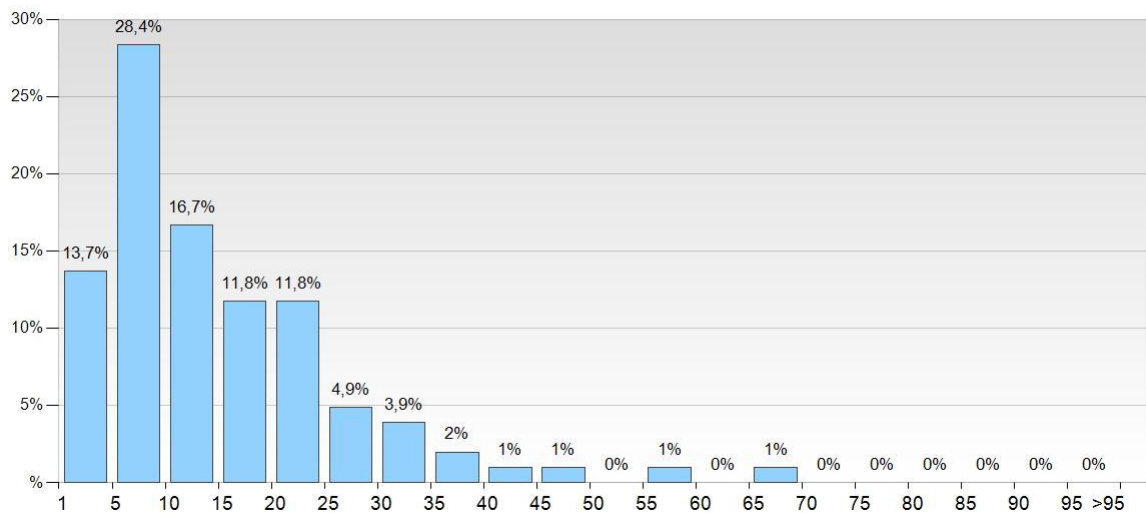
Anesthesia	n	%
Local	51	50
General	51	50
<b>Total</b>	<b>102</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	20	143,3	325	102	0
Fluoroscopy time	1	14,6	68	99	3

Investigation time (minutes)



Fluoroscopy time (minutes)



## Left Atrial Flutter

Type of Flutter	n
Perimitral	57
Other	30
Roof-dependent	27
Peri Ostial Pulmonary Vein	9
Peri-Incisional	2

EHRA-Score	n	%
Score I	8	7,84
Score II	52	50,98
Score III	40	39,22
Score IV	2	1,96

Type of Intervention	n	%
Percutaneous	102	100
Hybrid (Epicardial + Endovascular)	0	0
Surgical Ablation	0	0

Intervention	n	%
Primary Intervention	52	50,98
Redo	50	49,02

Antiarrhythmic Drugs	n
Beta Blocker	74
Amiodarone	17
None	13
Sotalol	11
Other	3
Calcium Antagonist	2
Propafenone	1
Flecainide	1
Digitalis	1
Dronedarone	0

## Left Atrial Flutter

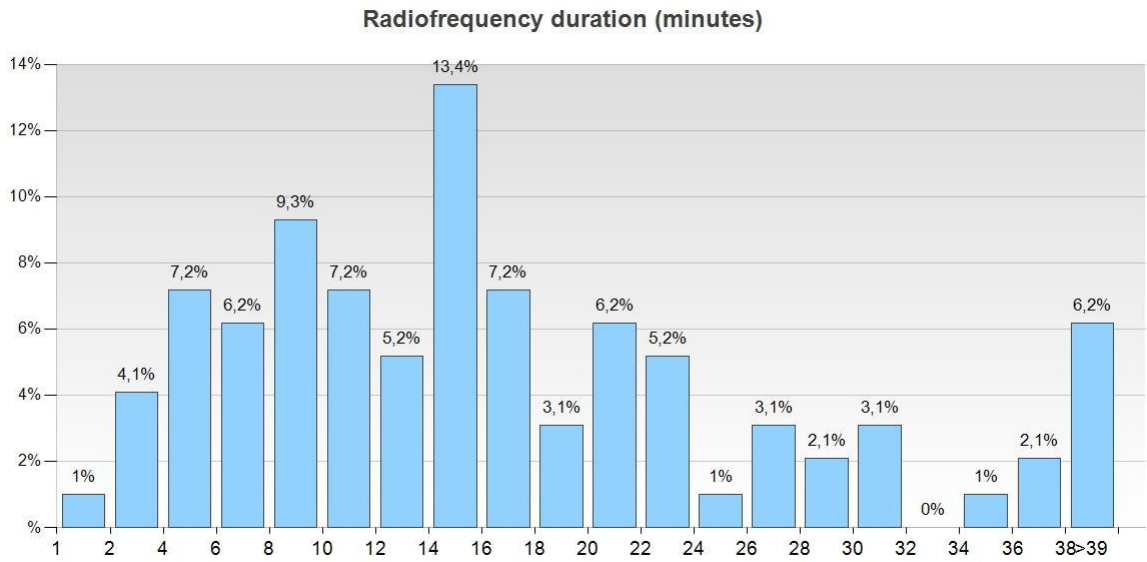
<b>Thromboembolic Risk Factors</b>	<b>n</b>
Hypertension	39
Congestive Heart Failure, LV dysfunction	11
Diabetes	7
Prior MI, Per. Artery Disease, Aortic Plaque	5
Stroke, TIA, Other Embolic Event	4

<b>Anticoagulation, Antiaggregation</b>	<b>n</b>
Factor Xa-Antagonist	79
Vitamin K-Antagonist	12
None	5
Other	3
Clopidogrel	2
Aspirin	2
Direct Thrombin Inhibitor	2
Prasugrel	0
Ticagrelor	0

<b>CHA<sub>2</sub>DS<sub>2</sub>-VASc Score</b>	<b>n</b>
Score = 0	17
Score = 1	22
Score = 2	32
Score = 3	22
Score = 4	5
Score = 5	2
Score = 6	2
Score = 7	0
<b>Average Score</b>	<b>1,90</b>

### Left Atrial Flutter

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	17	61	92	5
Irrigated Technology				74	
RF Duty Cycled				5	



## Left Atrial Flutter

<b>Access</b>	<b>n</b>	<b>%</b>
Trans-septal, Puncture	88	86,27
Trans-septal, PFO	9	8,82
Arterial	4	3,92
Other	1	0,98
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
<b>Total</b>	<b>102</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
3D Mapping	94	92,16
Conventional	5	4,9
Basket	2	1,96
Non Contact	1	0,98
Lasso	0	0
HD Mesh	0	0
Other	0	0
<b>Total</b>	<b>102</b>	

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	102	100
Stereotaxis	0	0
Hansen	0	0
Other	0	0
<b>Total</b>	<b>102</b>	

<b>Results</b>	<b>n</b>	<b>%</b>
Block confirmed	89	87,25
Block not confirmed	13	12,75

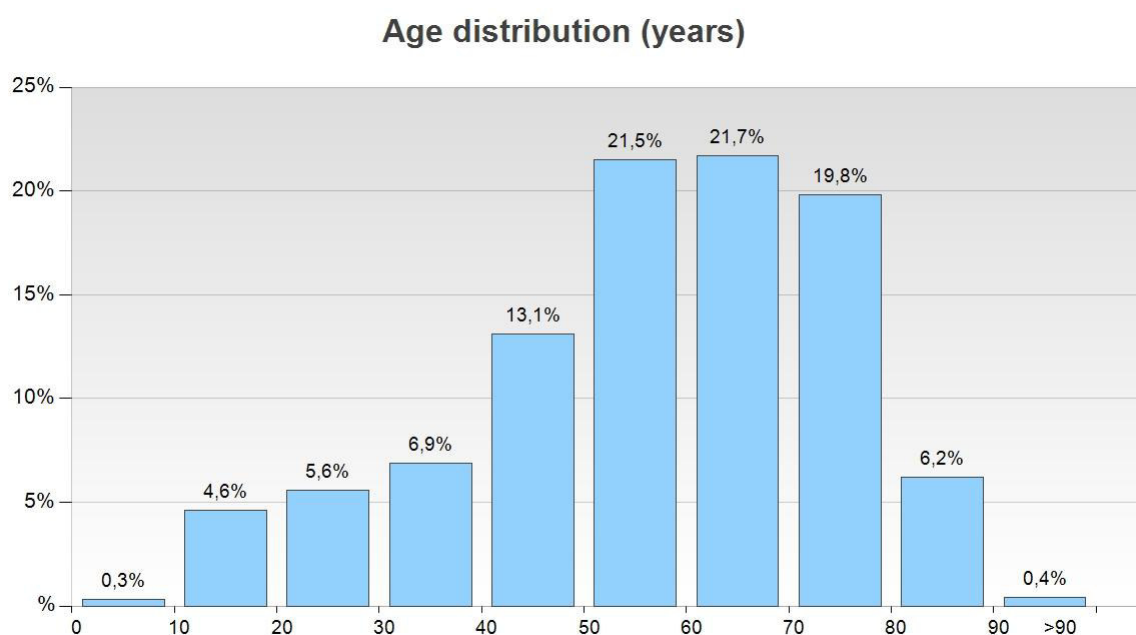
## Left Atrial Flutter

<b>Periprocedural Complications</b>	<b>n</b>
No complications	101
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
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

## Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Ablation of AVNRT	n
All interventions	1205
AVNRT combined with others	119
AVNRT only	1086

The following statistics include AVNRT only procedures



Age (years)	min.	Ø	max.
Female	10	56	91
Male	7	59	94
<b>All</b>	<b>7</b>	<b>57</b>	<b>94</b>

Number of patients	n	%
Females	562	52,38
Males	511	47,62
<b>Total</b>	<b>1073</b>	

## Atrioventricular Nodal Reentry Tachycardia (AVNRT)

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	906	83,43
Ischemic	73	6,72
Hypertensive Cardiomyopathy	46	4,24
Valvular	18	1,66
Tachycardiomyopathy	15	1,38
Dilated	9	0,83
Congenital	6	0,55
Other	3	0,28
Post Valvular Surgery	3	0,28
H(O)CM	2	0,18
CABG	2	0,18
Early Repolarization Syndrome	1	0,09
RV Cardiomyopathy	1	0,09
Angioplasty	1	0,09
Infiltrative	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
Post Congenital Surgery	0	0
<b>Total</b>	<b>1086</b>	

<b>Symptoms</b>	<b>n</b>
Palpitations	1031
Dizziness	155
Dyspnea	119
Fatigue	102
Syncope	59
Angina Pectoris	36
Other	34
None	9
SCD	4

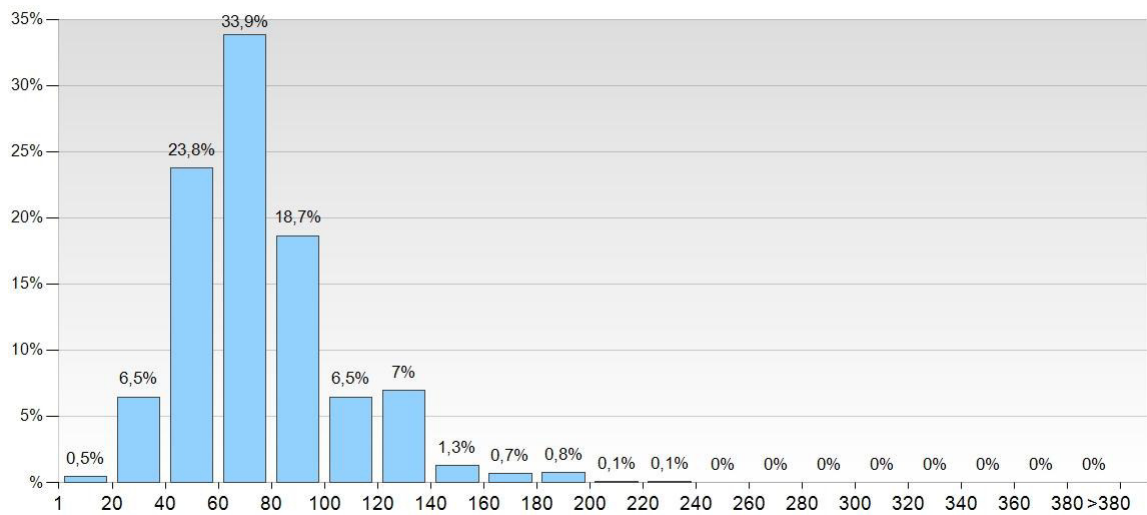


## Atrioventricular Nodal Reentry Tachycardia (AVNRT)

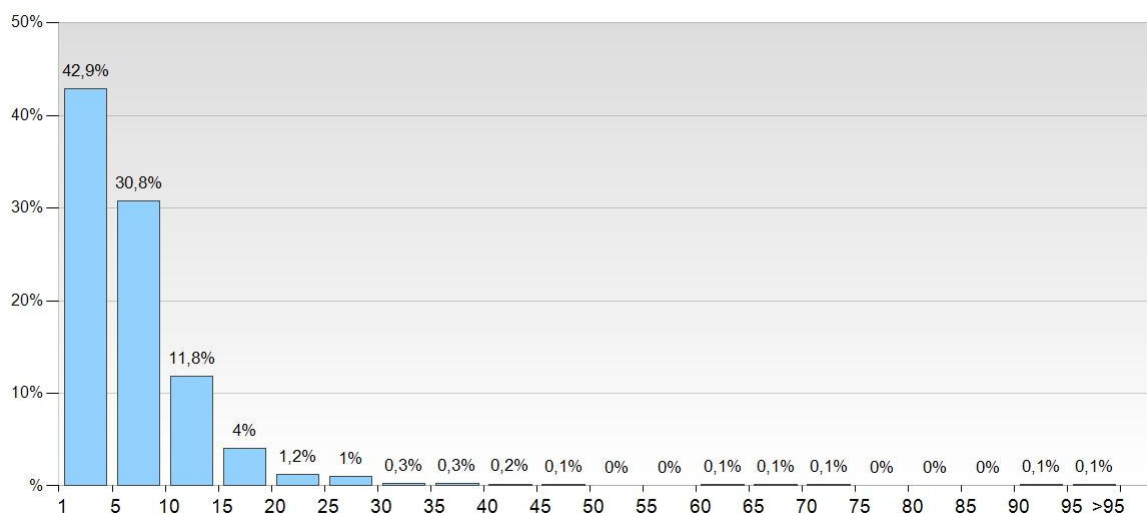
Anesthesia	n	%
Local	1051	96,78
General	35	3,22
<b>Total</b>	<b>1086</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	5	72,4	230	1086	0
Fluoroscopy time	1	6,9	255	1009	77

Investigation time (minutes)

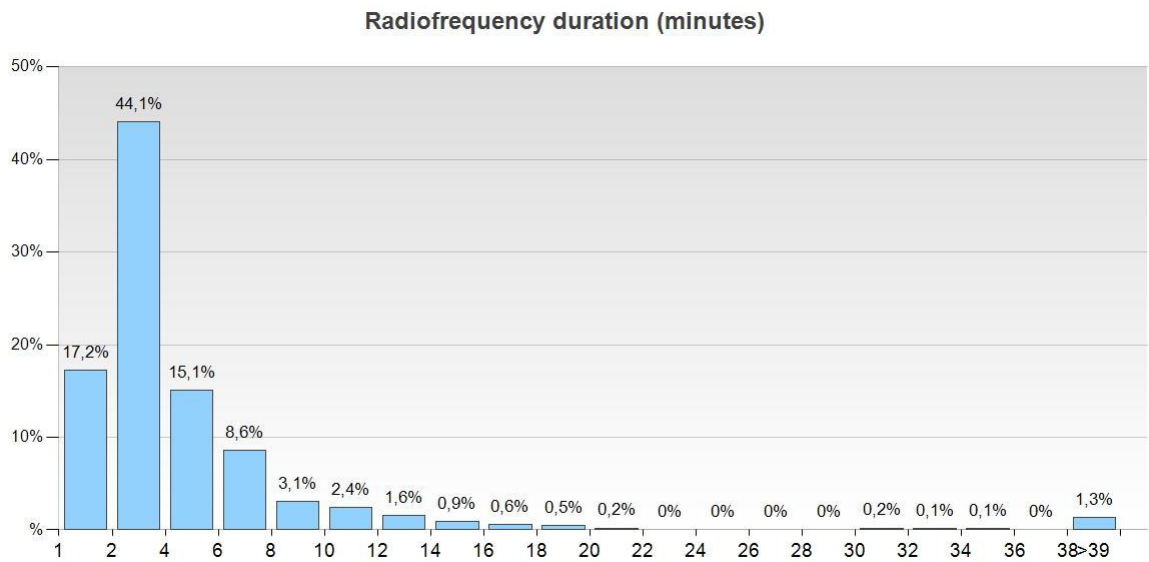


Fluoroscopy time (minutes)



### Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	5	193	1037	44
Irrigated Technology				165	



## Atrioventricular Nodal Reentry Tachycardia (AVNRT)

Type	n
Slow-Fast	1008
Fast-Slow	47
Slow-Slow	41

Intervention	n	%
Primary Intervention	1031	94,94
Redo	55	5,06

Cryoablation	min.	Ø	max.	n	n <sub>0</sub> *
Total Duration (minutes)	8	205	960	5	0

Mapping	n	%
3D Mapping	567	52,21
Conventional	518	47,7
Basket	1	0,09
Lasso	0	0
Non Contact	0	0
HD Mesh	0	0
Other	0	0
<b>Total</b>	<b>1086</b>	

Catheter Steering	n	%
Conventional	1080	99,45
Stereotaxis	5	0,46
Other	1	0,09
Hansen	0	0
<b>Total</b>	<b>1086</b>	

Results	n	%
Success	1074	98,9
No success	12	1,1

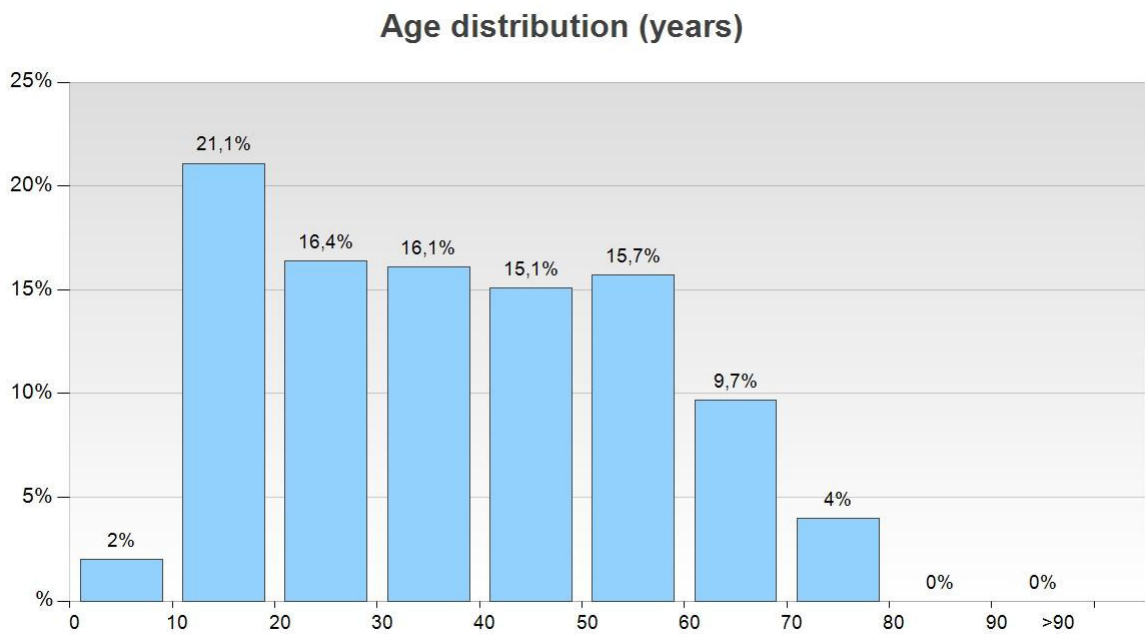
## Atrioventricular Nodal Reentry Tachycardia (AVNRT)

<b>Periprocedural Complications</b>	<b>n</b>
No complications	1079
Transient AV Block	4
Other	2
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

## Accessory Pathway

<b>Ablation of Accessory Pathway (AP)</b>	<b>n</b>
All interventions	315
AP combined with others	16
AP only	299

The following statistics include AP only procedures



<b>Age (years)</b>	<b>min.</b>	<b>Ø</b>	<b>max.</b>
Female	7	39	80
Male	8	38	76
<b>All</b>	<b>7</b>	<b>38</b>	<b>80</b>

<b>Number of patients</b>	<b>n</b>	<b>%</b>
Females	104	35,74
Males	187	64,26
<b>Total</b>	<b>291</b>	

## Accessory Pathway

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	274	91,64
Tachycardiomyopathy	4	1,34
Ischemic	4	1,34
Valvular	3	1
Dilated	3	1
Other	3	1
Congenital	3	1
Hypertensive Cardiomyopathy	3	1
H(O)CM	1	0,33
Early Repolarization Syndrome	1	0,33
Infiltrative	0	0
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada 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
<b>Total</b>	<b>299</b>	

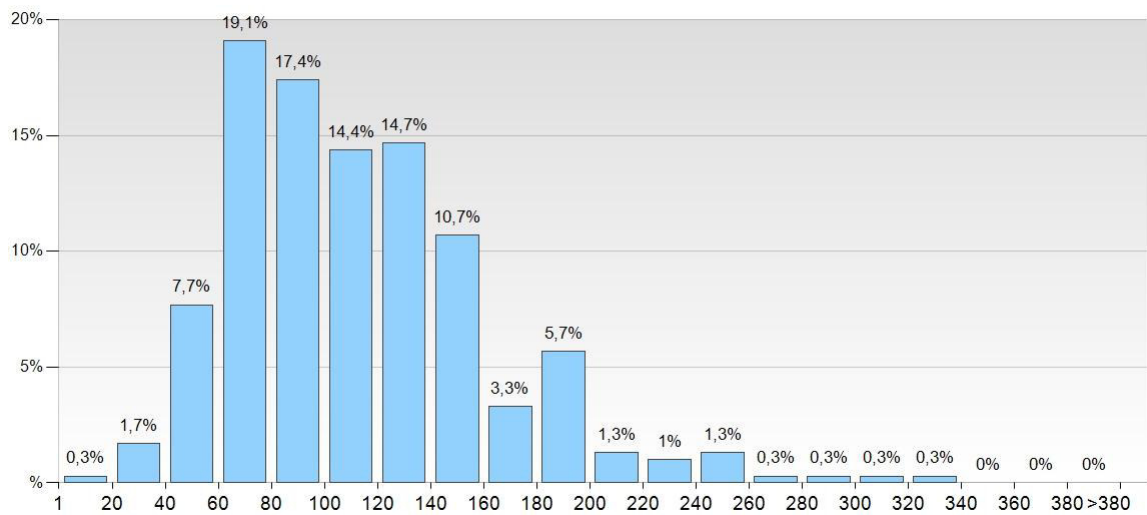
<b>Symptoms</b>	<b>n</b>
Palpitations	254
None	34
Dizziness	27
Dyspnea	15
Fatigue	14
Syncope	12
Other	9
Angina Pectoris	4
SCD	1

### Accessory Pathway

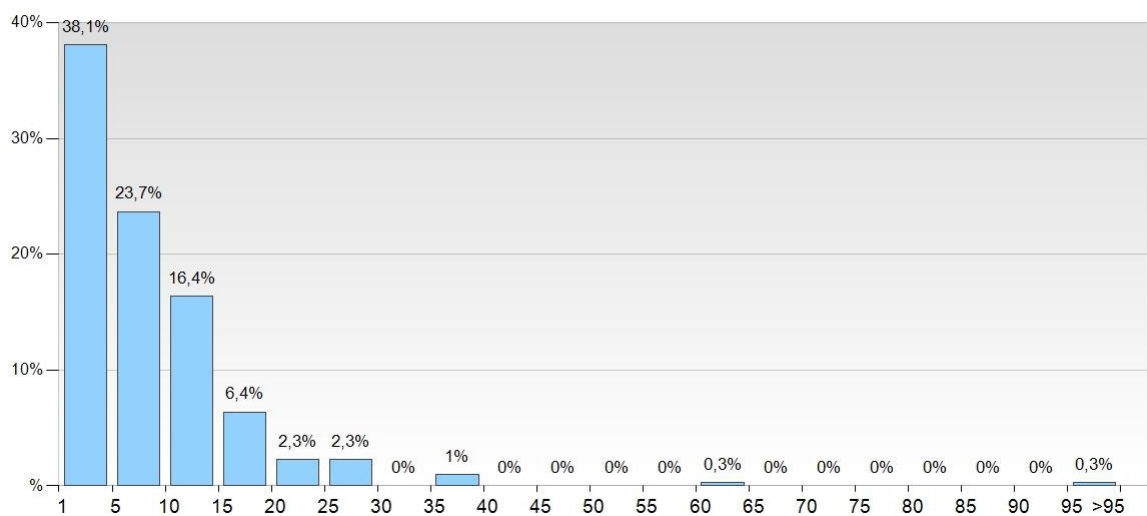
Anesthesia	n	%
Local	233	77,93
General	66	22,07
<b>Total</b>	<b>299</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> <sup>*</sup>
Investigation time	3	110,5	330	299	0
Fluoroscopy time	1	8,4	105	272	27

Investigation time (minutes)



Fluoroscopy time (minutes)



## Accessory Pathway

Type	n
WPW	169
Concealed	108
Asymptomatic Preexcitation	26
Atrio-Fascicular	4
Mahaim	4
PJRT	1
Other	1

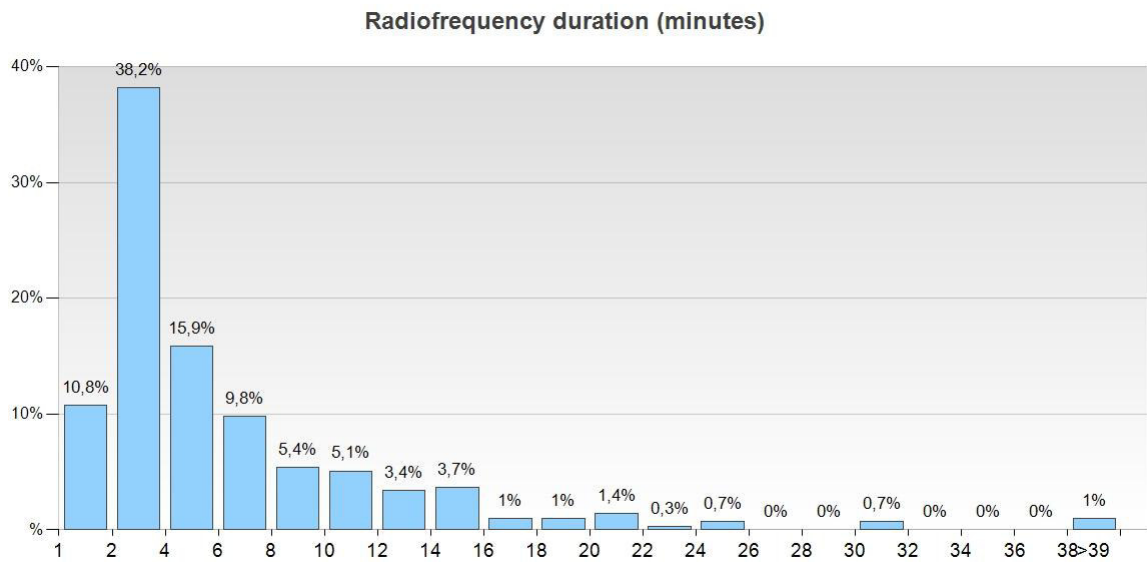
Intervention	n	%
Primary Intervention	257	85,95
Redo	42	14,05

Site of Ablation	n
left	186
right	122
left: Free Wall	109
right: Posteroseptal	55
left: Posteroseptal	41
left: Posterior	41
right: Parahisian	20
right: Free Wall	17
right: Anteroseptal	16
right: Midseptal	14
right: Coronary Sinus Aneurysm	5
right: Posterior	5



## Accessory Pathway

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	7	369	291	5
Irrigated Technology				217	



## Accessory Pathway

<b>Cryoablation</b>	<b>min.</b>	<b>Ø</b>	<b>max.</b>	<b>n</b>	<b>n<sub>0</sub>*</b>
Total Duration (minutes)	1	11,2	24	4	0

<b>Access</b>	<b>n</b>	<b>%</b>
Venous	133	44,48
Trans-septal, Puncture	133	44,48
Arterial	16	5,35
Trans-septal, PFO	16	5,35
Other	1	0,33
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
<b>Total</b>	<b>299</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
3D Mapping	227	75,92
Conventional	66	22,07
Basket	2	0,67
HD Mesh	2	0,67
Lasso	2	0,67
Non Contact	0	0
Other	0	0
<b>Total</b>	<b>299</b>	

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	296	99
Stereotaxis	2	0,67
Other	1	0,33
Hansen	0	0
<b>Total</b>	<b>299</b>	

<b>Results</b>	<b>n</b>	<b>%</b>
Success	283	94,65
No success	16	5,35

## Accessory Pathway

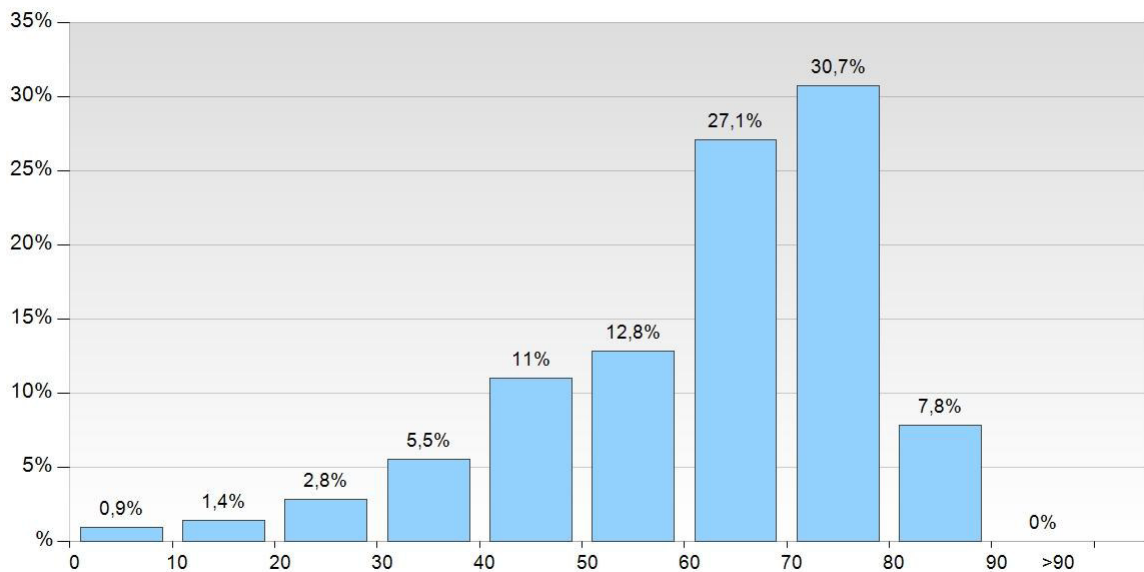
<b>Periprocedural Complications</b>	<b>n</b>
No complications	296
Other	2
Transient AV Block	1
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
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 Tachycardia

Ablation of Atrial Tachycardia (AT)	n
All interventions	383
AT combined with others	165
AT only	218

The following statistics include AT only procedures

### Age distribution (years)



Age (years)	min.	Ø	max.
Female	6	62	84
Male	19	63	90
<b>All</b>	<b>6</b>	<b>63</b>	<b>90</b>

Number of patients	n	%
Females	99	47,6
Males	109	52,4
<b>Total</b>	<b>208</b>	

## Atrial Tachycardia

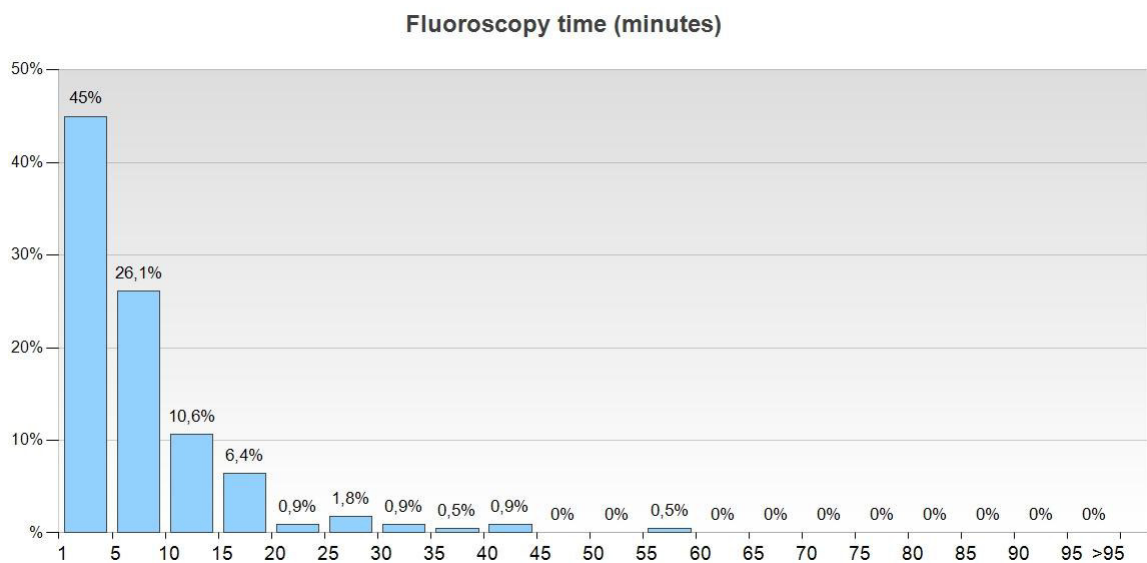
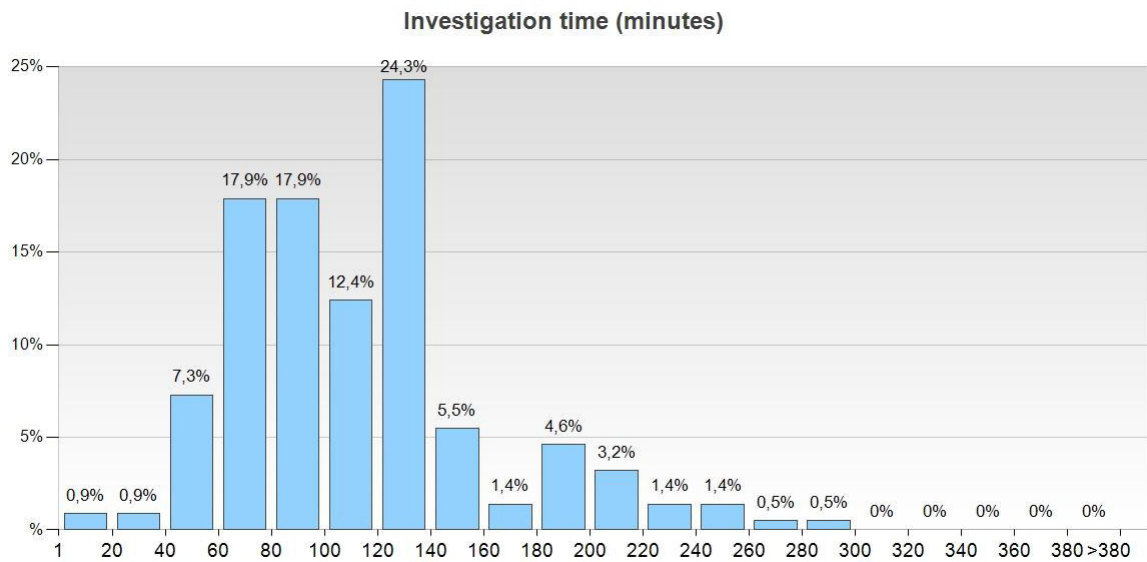
<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	148	67,89
Ischemic	18	8,26
Hypertensive Cardiomyopathy	14	6,42
Valvular	11	5,05
Tachycardiomyopathy	7	3,21
Other	7	3,21
Congenital	4	1,83
Dilated	4	1,83
H(O)CM	2	0,92
Post Valvular Surgery	1	0,46
CABG	1	0,46
Angioplasty	1	0,46
Infiltrative	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
Post Congenital Surgery	0	0
<b>Total</b>	<b>218</b>	

<b>Symptoms</b>	<b>n</b>
Palpitations	204
Dyspnea	44
Fatigue	27
Dizziness	16
Other	6
Angina Pectoris	5
None	4
Syncope	4
SCD	1

## Atrial Tachycardia

Anesthesia	n	%
Local	203	93,12
General	15	6,88
<b>Total</b>	<b>218</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	10	109,1	288	218	0
Fluoroscopy time	1	7,4	57	204	14



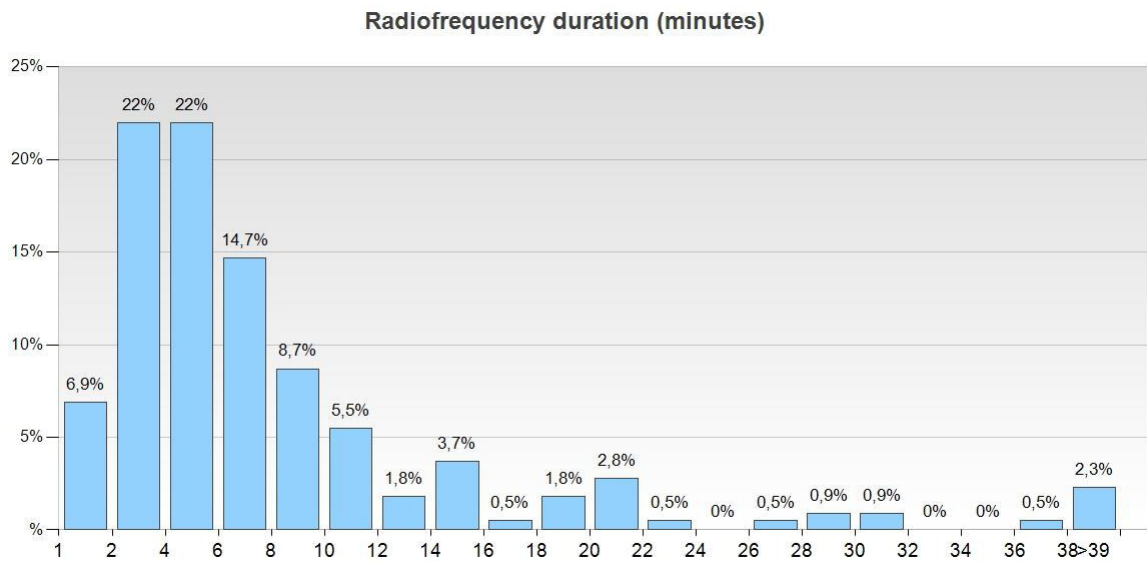
## Atrial Tachycardia

<b>Intervention</b>	<b>n</b>	<b>%</b>
Primary Intervention	186	85,32
Redo	32	14,68

<b>Site of Ablation</b>	<b>n</b>
right	164
left	65
right: Other Right	51
right: Crista Terminalis	44
right: Peritricuspid	40
right: Septal Right	29
left: Other Left	28
left: Septal Left	16
left: Perimitral	15
right: Right Appendage	11
left: Periostial PV	9
left: Left Atrial Appendage	5

## Atrial Tachycardia

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	9	157	209	9
Irrigated Technology				171	





## Atrial Tachycardia

<b>Access</b>	<b>n</b>	<b>%</b>
Venous	155	71,1
Trans-septal, Puncture	47	21,56
Trans-septal, PFO	9	4,13
Arterial	6	2,75
Other	1	0,46
Epicardial, Coronary Sinus	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
<b>Total</b>	<b>218</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
3D Mapping	185	84,86
Conventional	27	12,39
Basket	2	0,92
Lasso	2	0,92
Non Contact	2	0,92
HD Mesh	0	0
Other	0	0
<b>Total</b>	<b>218</b>	

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	217	99,54
Stereotaxis	1	0,46
Hansen	0	0
Other	0	0
<b>Total</b>	<b>218</b>	

<b>Results</b>	<b>n</b>	<b>%</b>
Success	202	92,66
No success	16	7,34

## Atrial Tachycardia

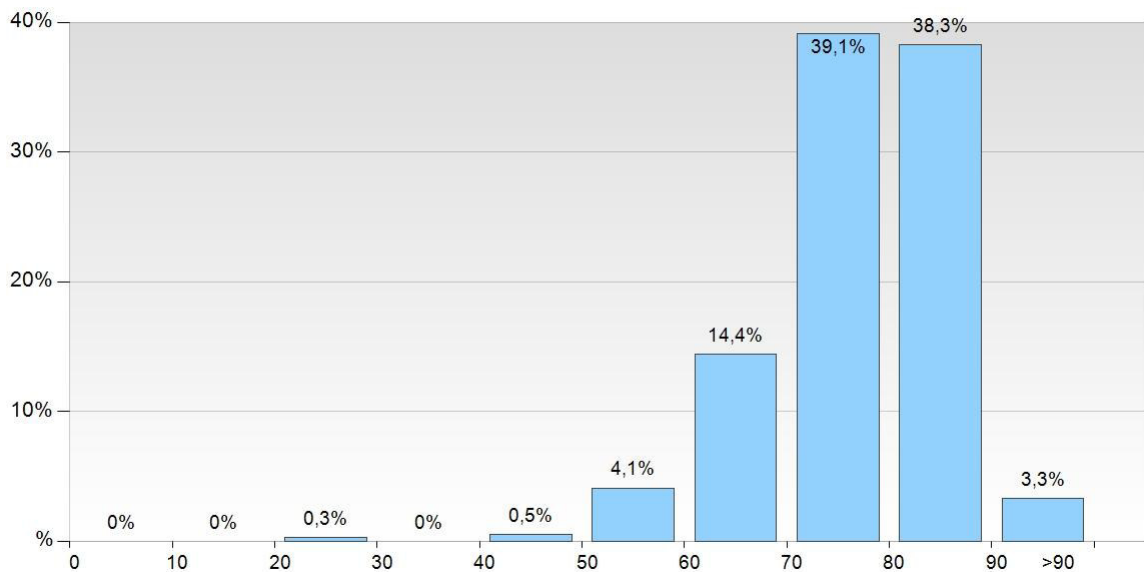
<b>Periprocedural Complications</b>	<b>n</b>
No complications	215
High Degree or Complete AV Block	1
Valvular Lesions	1
Other	1
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Pulmonary Oedema	0
Death	0

## Atrioventricular Node (Rate Control in Atr. Fibrillation)

Ablation of AVN(R)	n
All interventions	388
AVN(R) combined with others	20
AVN(R) only	368

The following statistics include AVN(R) only procedures

## Age distribution (years)



Age (years)	min.	Ø	max.
Female	56	79	98
Male	26	75	99
<b>All</b>	<b>26</b>	<b>78</b>	<b>99</b>

Number of patients	n	%
Females	209	58,38
Males	149	41,62
<b>Total</b>	<b>358</b>	

## Atrioventricular Node (Rate Control in Atr. Fibrillation)

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	110	29,89
Hypertensive Cardiomyopathy	69	18,75
Tachycardiomyopathy	69	18,75
Valvular	31	8,42
Ischemic	28	7,61
Dilated	21	5,71
Other	18	4,89
Post Valvular Surgery	6	1,63
Infiltrative	5	1,36
CABG	3	0,82
H(O)CM	3	0,82
Congenital	3	0,82
Post Congenital Surgery	1	0,27
RV Cardiomyopathy	1	0,27
Channelopathy long QT	0	0
Channelopathy short QT	0	0
Brugada Syndrome	0	0
Early Repolarization Syndrome	0	0
Catecholaminergic Polymorphic VT	0	0
Angioplasty	0	0
<b>Total</b>	<b>368</b>	

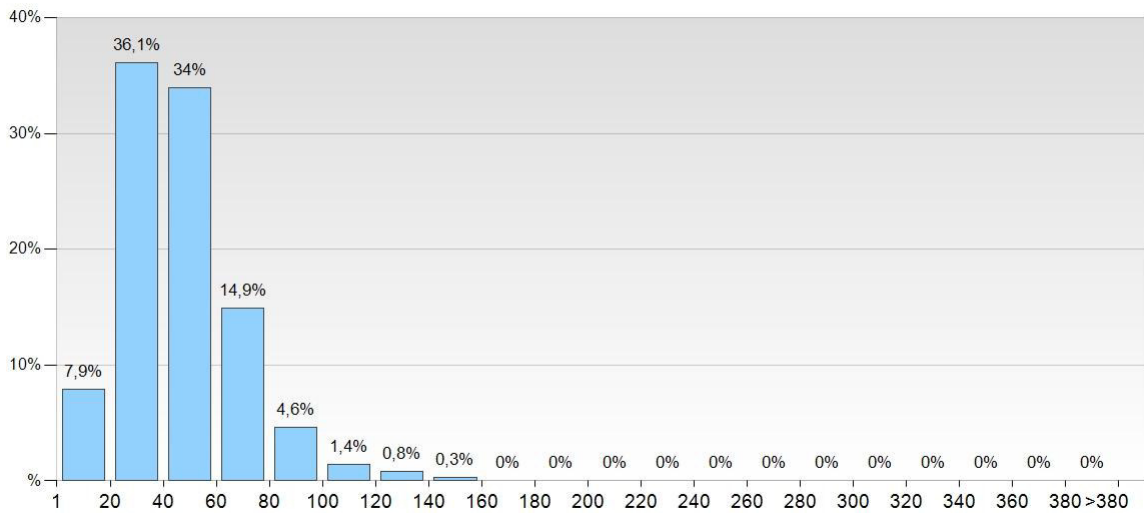
<b>Symptoms</b>	<b>n</b>
Palpitations	279
Dyspnea	175
Fatigue	106
Dizziness	20
Other	13
None	11
Syncope	6
Angina Pectoris	6
SCD	1

### Atrioventricular Node (Rate Control in Atr. Fibrillation)

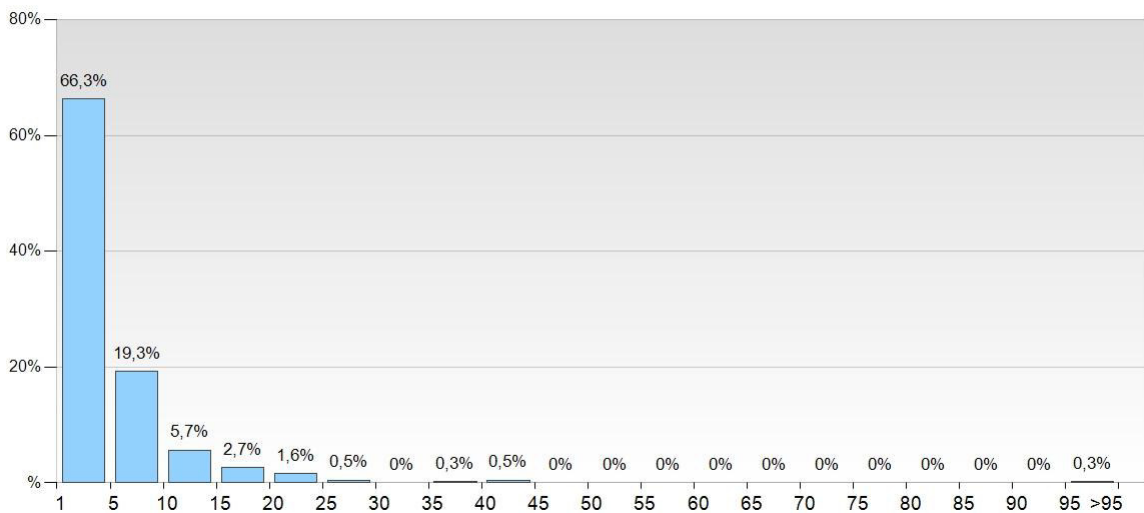
Anesthesia	n	%
Local	365	99,18
General	3	0,82
<b>Total</b>	<b>368</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	1	43,4	157	368	0
Fluoroscopy time	1	5,9	415	358	10

Investigation time (minutes)



Fluoroscopy time (minutes)



## Atrioventricular Node (Rate Control in Atr. Fibrillation)

Type of Fibrillation	n	%
Paroxysmal	92	25
Persistent	167	45,38
Long-standing Persistent (>1 Year)	109	29,62

EHRA-Score	n	%
Score I	22	5,98
Score II	120	32,61
Score III	185	50,27
Score IV	41	11,14

Intervention	n	%
Primary Intervention	328	89,13
Redo	22	5,98
Previous AF Abl. Procedure	18	4,89

Antiarrhythmic Drugs	n
Beta Blocker	269
Amiodarone	90
None	33
Calcium Antagonist	30
Digitalis	25
Flecainide	12
Other	12
Sotalol	10
Propafenone	0
Dronedarone	0

## Atrioventricular Node (Rate Control in Atr. Fibrillation)

<b>Thromboembolic Risk Factors</b>	<b>n</b>
Hypertension	195
Congestive Heart Failure, LV dysfunction	69
Diabetes	37
Prior MI, Per. Artery Disease, Aortic Plaque	30
Stroke, TIA, Pther Embolic Event	17

<b>Anticoagulation, Antiaggregation</b>	<b>n</b>
Factor Xa-Antagonist	286
Vitamin K-Antagonist	43
Other	14
None	13
Aspirin	8
Direct Thrombin Inhibitor	7
Clopidogrel	3
Ticagrelor	1
Prasugrel	0

<b>CHA<sub>2</sub>DS<sub>2</sub>-VASc Score</b>	<b>n</b>
Score = 0	5
Score = 1	24
Score = 2	72
Score = 3	123
Score = 4	99
Score = 5	34
Score = 6	9
Score = 7	1
<b>Average Score</b>	<b>3,16</b>

**Atrioventricular Node (Rate Control in Atr. Fibrillation)**

<b>Periprocedural Complications</b>	<b>n</b>
No complications	368
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

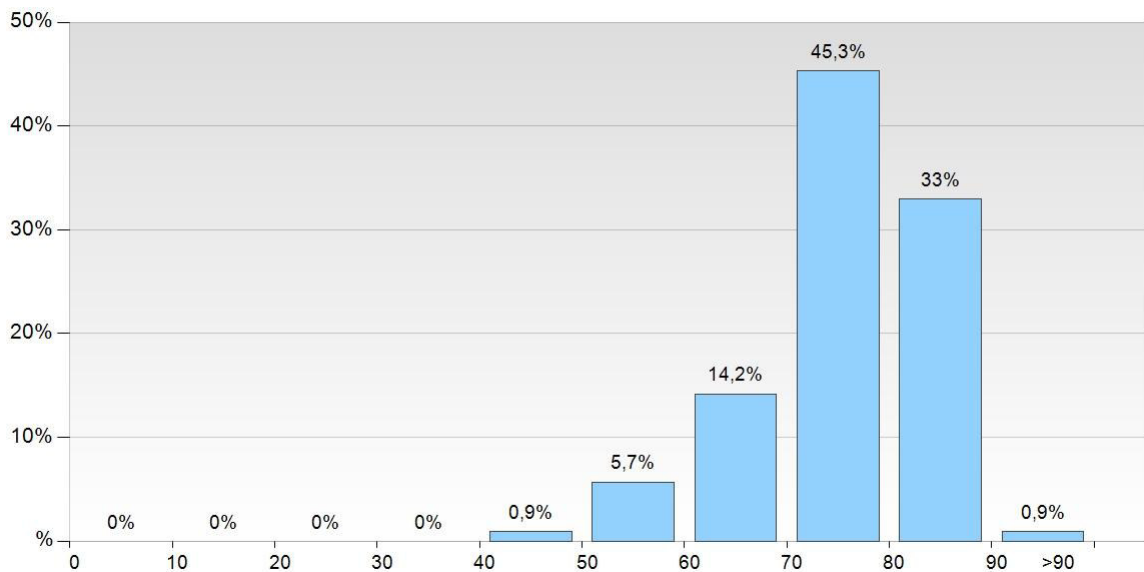


## Atrioventricular Node (to resynchronisation)

Ablation of AVN	n
All interventions	125
AVN combined with others	19
AVN only	106

The following statistics include AVN only procedures

## Age distribution (years)



Age (years)	min.	Ø	max.
Female	60	78	97
Male	45	74	89
<b>All</b>	<b>45</b>	<b>76</b>	<b>97</b>

Number of patients	n	%
Females	44	41,9
Males	61	58,1
<b>Total</b>	<b>105</b>	

## Atrioventricular Node (to resynchronisation)

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
Tachycardiomyopathy	24	22,64
Dilated	21	19,81
Ischemic	19	17,92
None	12	11,32
Hypertensive Cardiomyopathy	10	9,43
Valvular	5	4,72
H(O)CM	4	3,77
Other	4	3,77
Post Valvular Surgery	4	3,77
Infiltrative	2	1,89
Congenital	1	0,94
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
<b>Total</b>	<b>106</b>	

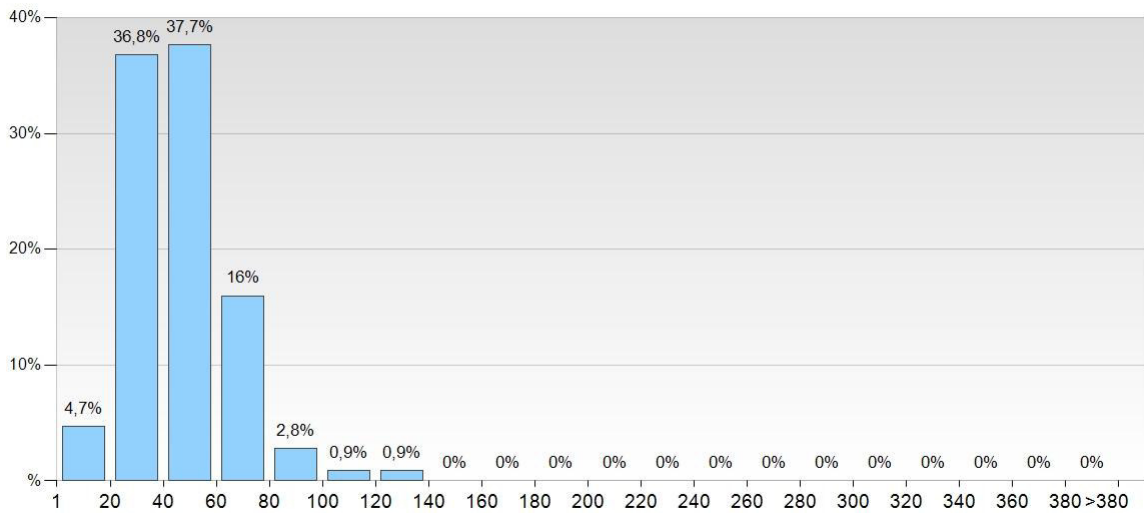
<b>Symptoms</b>	<b>n</b>
Palpitations	67
Dyspnea	63
Fatigue	36
Dizziness	13
Other	7
None	4
Syncope	2
Angina Pectoris	2
SCD	0

### Atrioventricular Node (to resynchronisation)

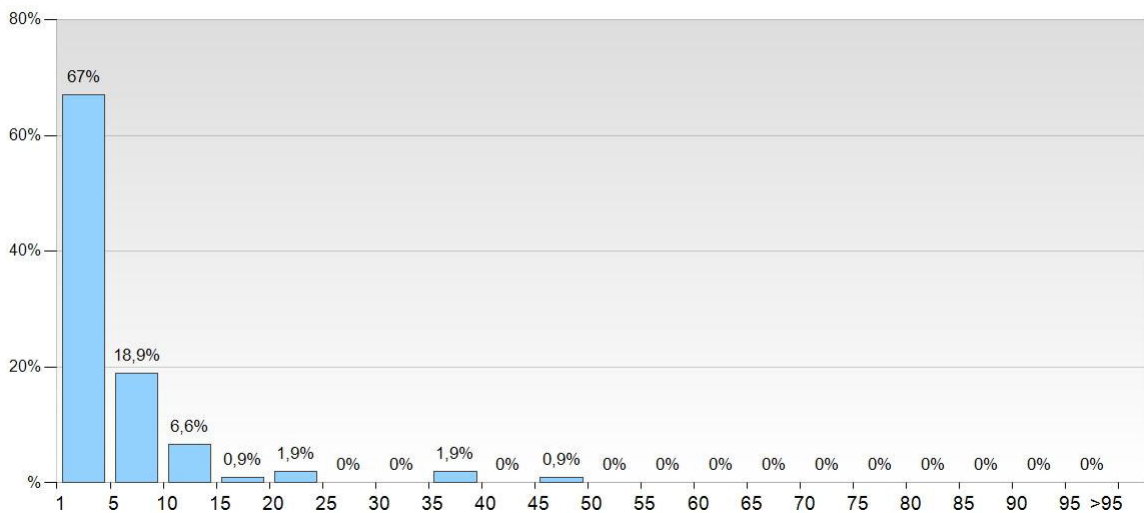
Anesthesia	n	%
Local	105	99,06
General	1	0,94
<b>Total</b>	<b>106</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	15	43,5	120	106	0
Fluoroscopy time	1	5,2	47	104	2

Investigation time (minutes)



Fluoroscopy time (minutes)



## Atrioventricular Node (to resynchronisation)

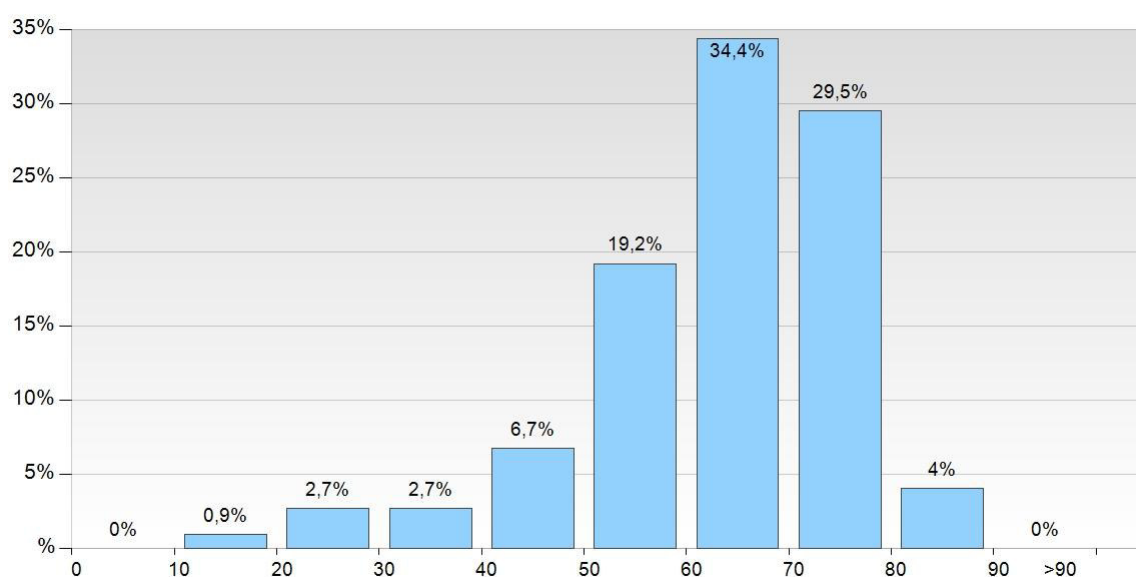
<b>Periprocedural Complications</b>	<b>n</b>
No complications	106
Inguinal Hematoma	0
AV Fistula	0
Pseudoaneurysm	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Tamponade	0
Pneumothorax	0
Hemothorax	0
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	240
VT combined with others	16
VT only	224

The following statistics include VT only procedures

Age distribution (years)



Age (years)	min.	Ø	max.
Female	20	56	78
Male	15	66	86
<b>All</b>	<b>15</b>	<b>64</b>	<b>86</b>

Number of patients	n	%
Females	43	20,28
Males	169	79,72
<b>Total</b>	<b>212</b>	

## Ventricular Tachycardia

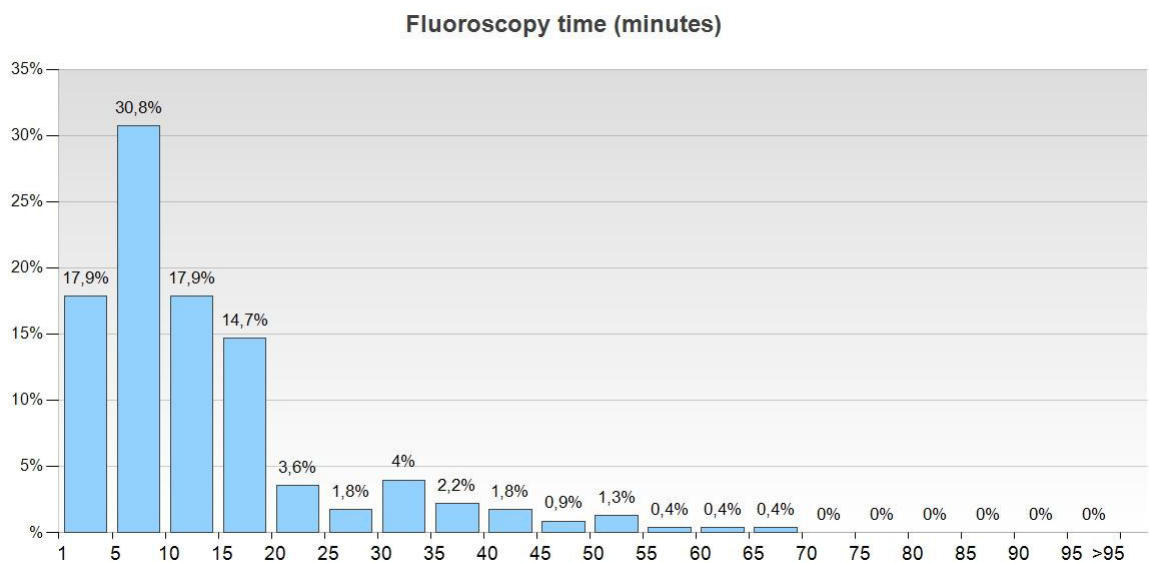
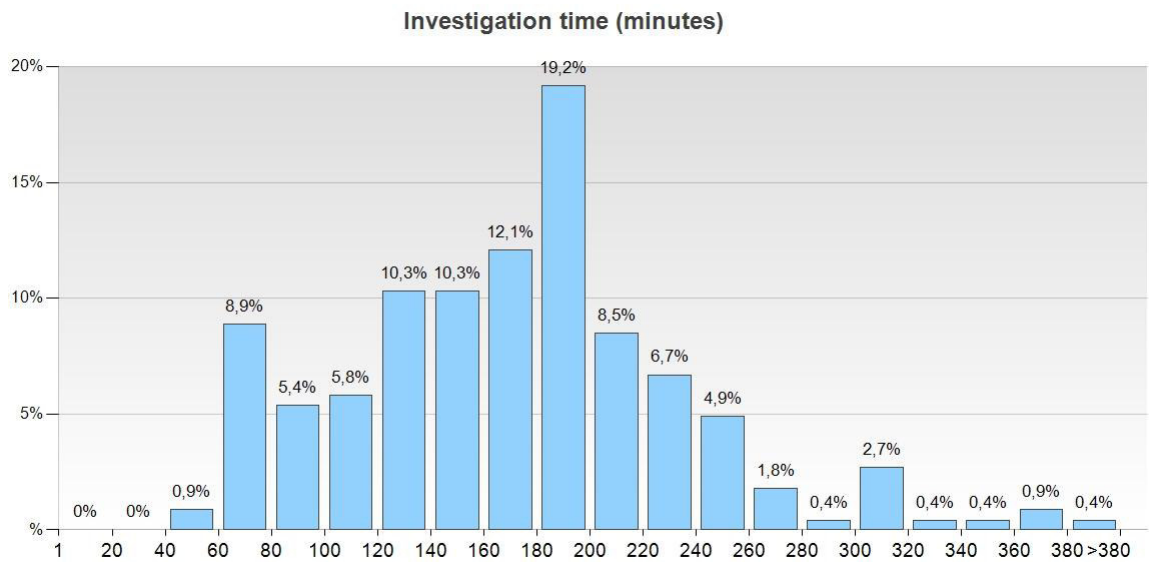
<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
Ischemic	109	48,66
None	61	27,23
Dilated	28	12,5
Valvular	6	2,68
Other	5	2,23
Tachycardiomyopathy	4	1,79
Hypertensive Cardiomyopathy	3	1,34
RV Cardiomyopathy	3	1,34
Congenital	2	0,89
Infiltrative	1	0,45
H(O)CM	1	0,45
Angioplasty	1	0,45
Channelopathy 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
Post Valvular Surgery	0	0
<b>Total</b>	<b>224</b>	

<b>Symptoms</b>	<b>n</b>
Palpitations	160
Dizziness	44
Dyspnea	44
Syncope	33
Fatigue	27
Other	19
SCD	18
None	12
Angina Pectoris	8

## Ventricular Tachycardia

Anesthesia	n	%
Local	153	68,3
General	71	31,7
<b>Total</b>	<b>224</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	45	168,5	400	224	0
Fluoroscopy time	1	13,5	68	220	4



## Ventricular Tachycardia

Type	n
Monomorphic	195
Polymorphic	33

Location	n
Other	104
LVOT / Cusp	40
RVOT / Cusp / PA	36
Mitral Annulus	19
Left Pap Muscle	13
Fascicular	10
Tricuspid Annulus	9
Epicardial LV / RV	9
Parahisian	7
BB Reentry	4
Right Pap Muscle	1

Intervention	n	%
Primary Intervention	164	73,21
Redo	60	26,79

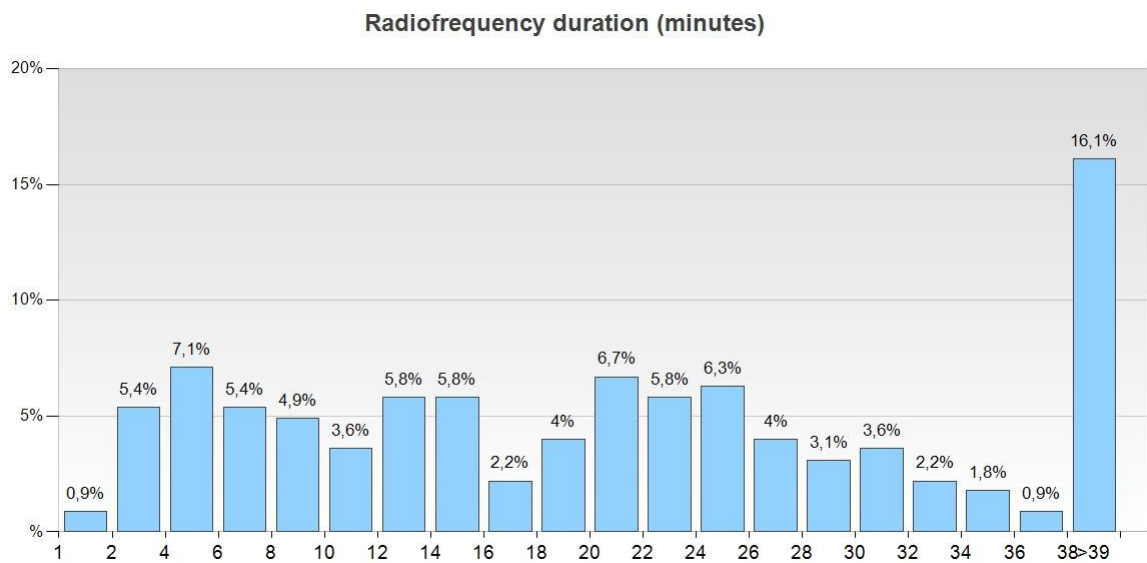
Antiarrhythmic Drugs	n
Beta Blocker	149
Amiodarone	90
None	31
Other	8
Flecainide	7
Calcium Antagonist	4
Sotalol	4
Propafenone	1



## Ventricular Tachycardia

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	25	336	216	8
Irrigated Technology				196	

Number of Induced VT: 308



## Ventricular Tachycardia

<b>Access</b>	<b>n</b>	<b>%</b>
Trans-septal, Puncture	103	45,98
Arterial	59	26,34
Venous	58	25,89
Epicardial, Sub-xiphoid	2	0,89
Trans-septal Puncture+arterial	1	0,45
Epicardial, Coronary Sinus	1	0,45
Trans-septal, PFO	0	0
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Other	0	0
<b>Total</b>	<b>224</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
3D Mapping	214	95,54
Conventional	6	2,68
Non Contact	1	0,45
Lasso	1	0,45
Other	1	0,45
Basket	1	0,45
HD Mesh	0	0
<b>Total</b>	<b>224</b>	

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	224	100
Stereotaxis	0	0
Hansen	0	0
Other	0	0
<b>Total</b>	<b>224</b>	

<b>Results</b>	<b>n</b>	<b>%</b>
All Induces VT Ablated	110	49,11
Target VT Ablated	100	44,64
Failure	14	6,25

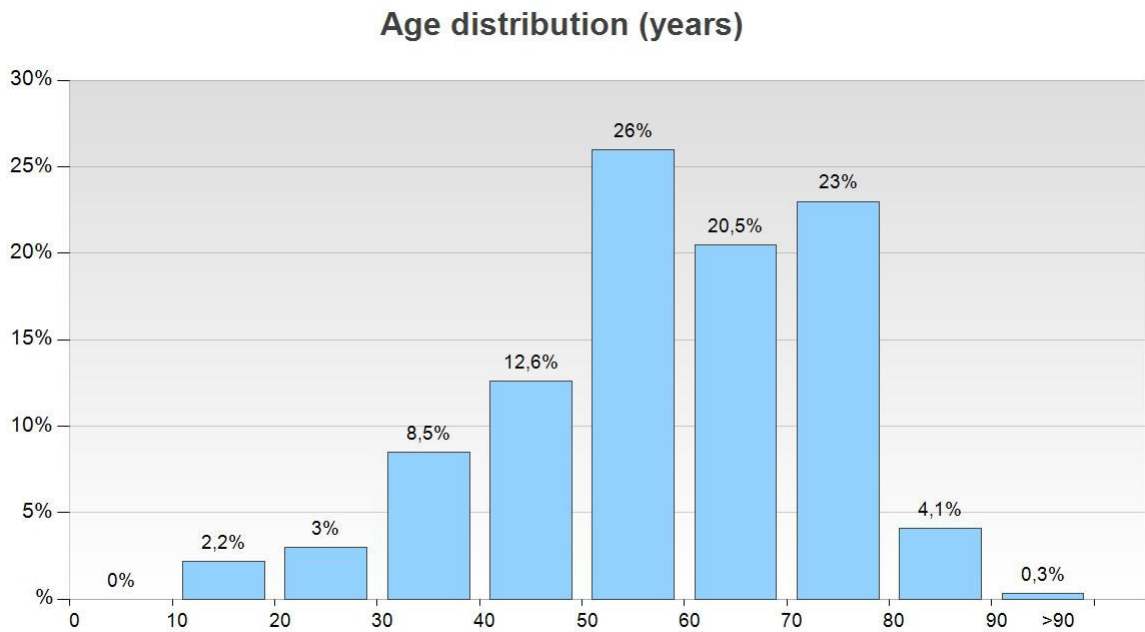
## Ventricular Tachycardia

<b>Periprocedural Complications</b>	<b>n</b>
No complications	217
Inguinal Hematoma	1
Pseudoaneurysm	1
TIA	1
Tamponade	1
Transient AV Block	1
High Degree or Complete AV Block	1
Other	1
AV Fistula	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Pneumothorax	0
Hemothorax	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	389
PVC combined with others	23
PVC only	366

The following statistics include PVC only procedures



Age (years)	min.	Ø	max.
Female	14	54	92
Male	14	62	88
<b>All</b>	<b>14</b>	<b>59</b>	<b>92</b>

Number of patients	n	%
Females	141	39,39
Males	217	60,61
<b>Total</b>	<b>358</b>	

## Premature Ventricular Contraction

<b>Cardiopathy (Underlying heart disease)</b>	<b>n</b>	<b>%</b>
None	222	60,66
Ischemic	41	11,2
Dilated	34	9,29
Hypertensive Cardiomyopathy	18	4,92
Tachycardiomyopathy	15	4,1
Valvular	12	3,28
Other	10	2,73
H(O)CM	5	1,37
Angioplasty	4	1,09
Congenital	2	0,55
Post Valvular Surgery	2	0,55
Channelopathy long QT	1	0,27
Infiltrative	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
<b>Total</b>	<b>366</b>	

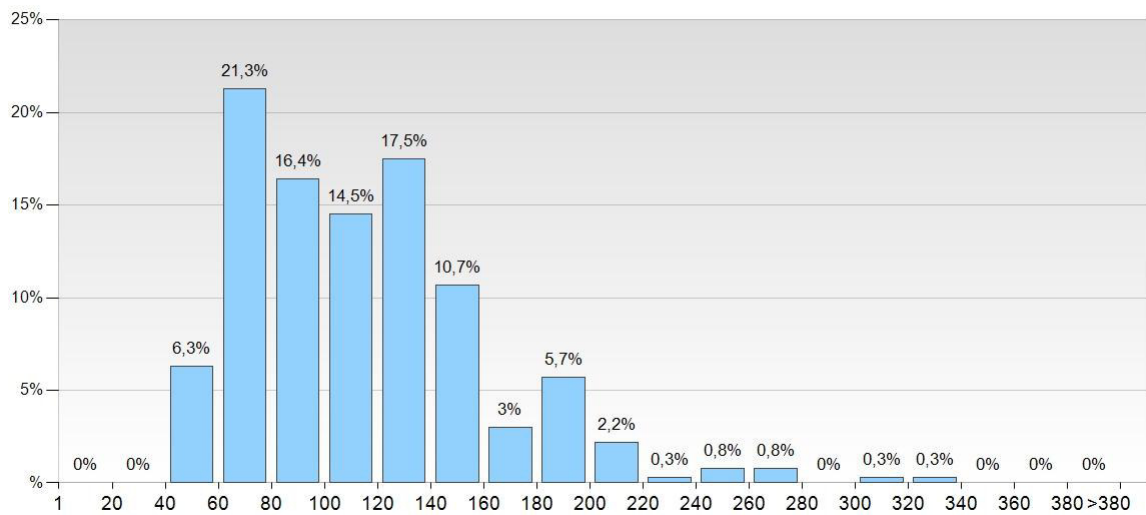
<b>Symptoms</b>	<b>n</b>
Palpitations	301
Dyspnea	64
Fatigue	58
Dizziness	37
Other	21
None	15
Syncope	11
Angina Pectoris	11
SCD	3

## Premature Ventricular Contraction

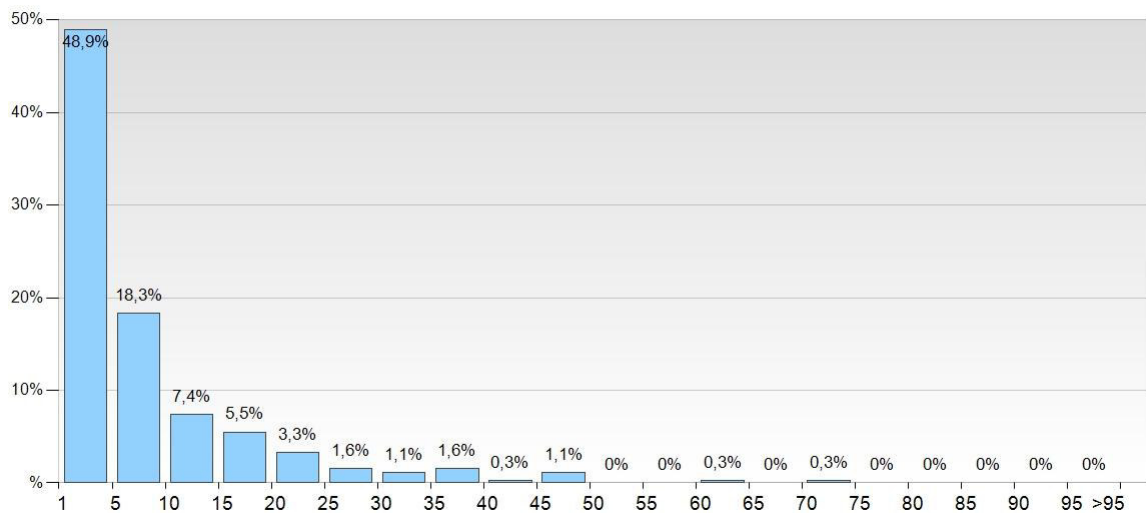
Anesthesia	n	%
Local	347	94,81
General	19	5,19
<b>Total</b>	<b>366</b>	

Minutes	min.	Ø	max.	n	n <sub>0</sub> *
Investigation time	40	110,6	320	366	0
Fluoroscopy time	1	8,1	70	328	38

Investigation time (minutes)



Fluoroscopy time (minutes)



## Premature Ventricular Contraction

Type	n
Monomorphic	328
Polymorphic	39
Ischemic	3

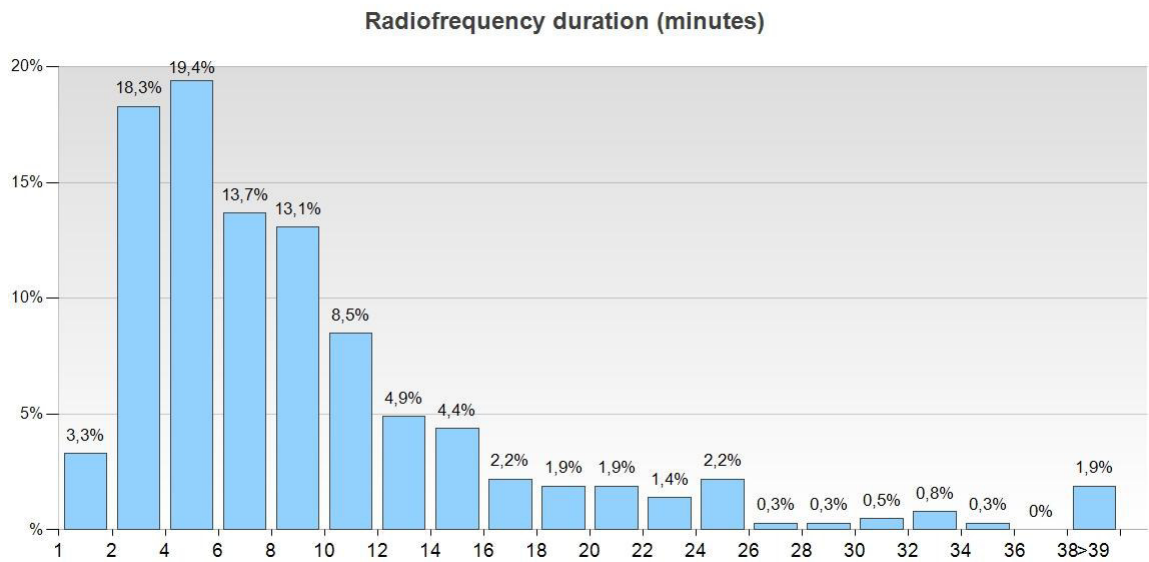
Location	n
RVOT	158
LVOT / Aortic Cusp	112
Other	95
HP System	21
Left Fascicular PVC	7

Site of Ablation	n
Right Ventricle	199
Left Ventricle	190

Intervention	n	%
Primary Intervention	327	89,34
Redo	39	10,66

## Premature Ventricular Contraction

Radiofrequency	min.	Ø	max.	n	n <sub>0</sub> *
Duration (minutes)	1	10	340	363	3
Irrigated Technology				318	





## Premature Ventricular Contraction

<b>Access</b>	<b>n</b>	<b>%</b>
Venous	205	56,01
Arterial	119	32,51
Trans-septal, Puncture	38	10,38
Trans-septal, PFO	3	0,82
Epicardial, Coronary Sinus	1	0,27
Epicardial, Thoracotomy	0	0
Epicardial, Thoracoscopy	0	0
Epicardial, Sub-xiphoid	0	0
Trans-septal Puncture+arterial	0	0
Other	0	0
<b>Total</b>	<b>366</b>	

<b>Mapping</b>	<b>n</b>	<b>%</b>
3D Mapping	341	93,17
Conventional	19	5,19
Lasso	3	0,82
Other	2	0,55
Non Contact	1	0,27
Basket	0	0
HD Mesh	0	0
<b>Total</b>	<b>366</b>	

<b>Catheter Steering</b>	<b>n</b>	<b>%</b>
Conventional	364	99,45
Stereotaxis	1	0,27
Other	1	0,27
Hansen	0	0
<b>Total</b>	<b>366</b>	

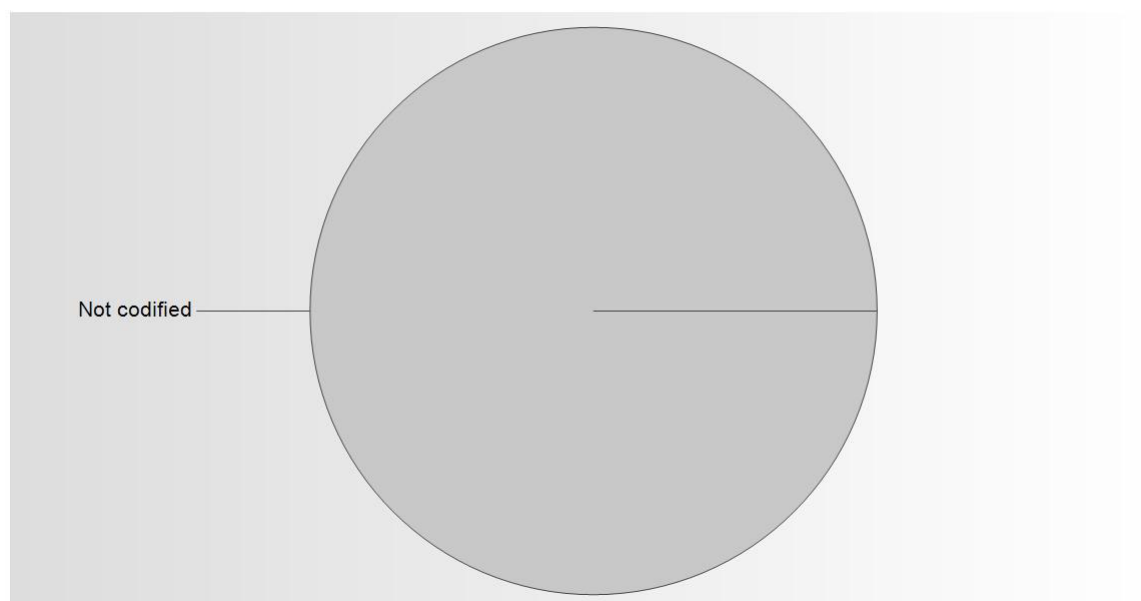
<b>Results</b>	<b>n</b>	<b>%</b>
Success	335	91,53
No Success	31	8,47

## Premature Ventricular Contraction

<b>Periprocedural Complications</b>	<b>n</b>
No complications	359
Other	3
Tamponade	2
Pseudoaneurysm	1
High Degree or Complete AV Block	1
Inguinal Hematoma	0
AV Fistula	0
Aortic Dissection	0
Arterial Thrombosis	0
Arterial Occlusion	0
Pulmonary Embolism	0
TIA	0
Stroke	0
Myocardial Infarction	0
Pericardial Effusion	0
Pneumothorax	0
Hemothorax	0
Transient AV Block	0
Phrenic Nerve Paralysis	0
Infection	0
PV Stenosis	0
Valvular Lesions	0
Pulmonary Oedema	0
Death	0

## Completion

### Completion



<b>Cause of completion</b>	<b>n</b>	<b>%</b>
Not codified	8	100
Regular End of Follow-Up	0	0
Lost to Follow-Up	0	0
Death	0	0
Change from Rhythm Control to Rate Control	0	0
<b>Total</b>	<b>8</b>	

The statistics are based on the data from SwissEPnet from 01.01.2021 to 31.12.2021. Its completeness and correctness depends on the complete and correct data entry in the respective hospital. EPS are counted as interventions.

0,1% incomplete records are not included in these statistics.

n<sub>0</sub>\*: 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)  
Other = Other Arrhythmia

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