Virginia Mason Franciscan Health

LEFT ATRIAL APPENDAGE CLOSURE

Olympic Peninsula Medical conference 2026

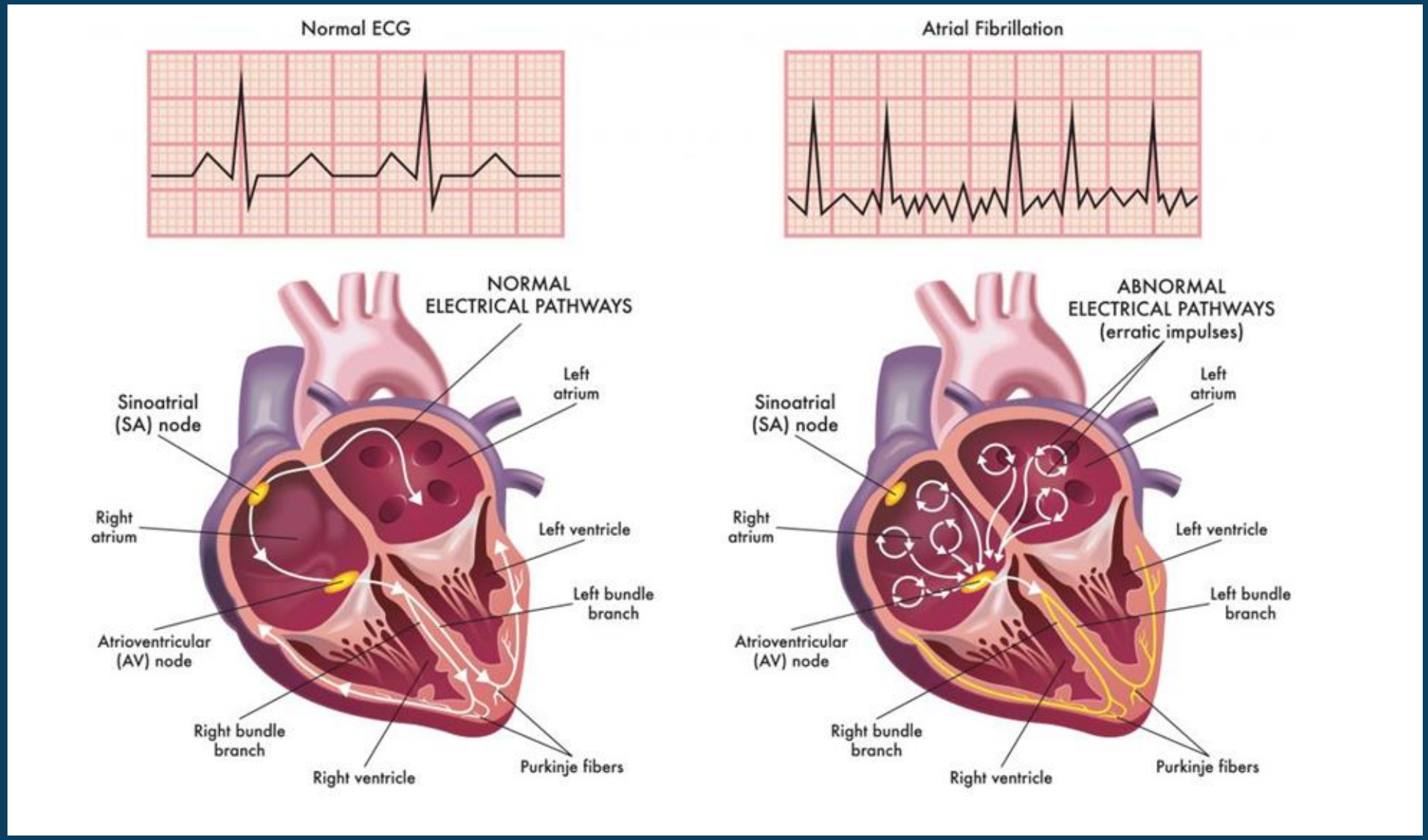
ABDULFATTAH SAIDI, MD, FACC
Interventional cardiology-structural heart disease
St.Michael Medical Center

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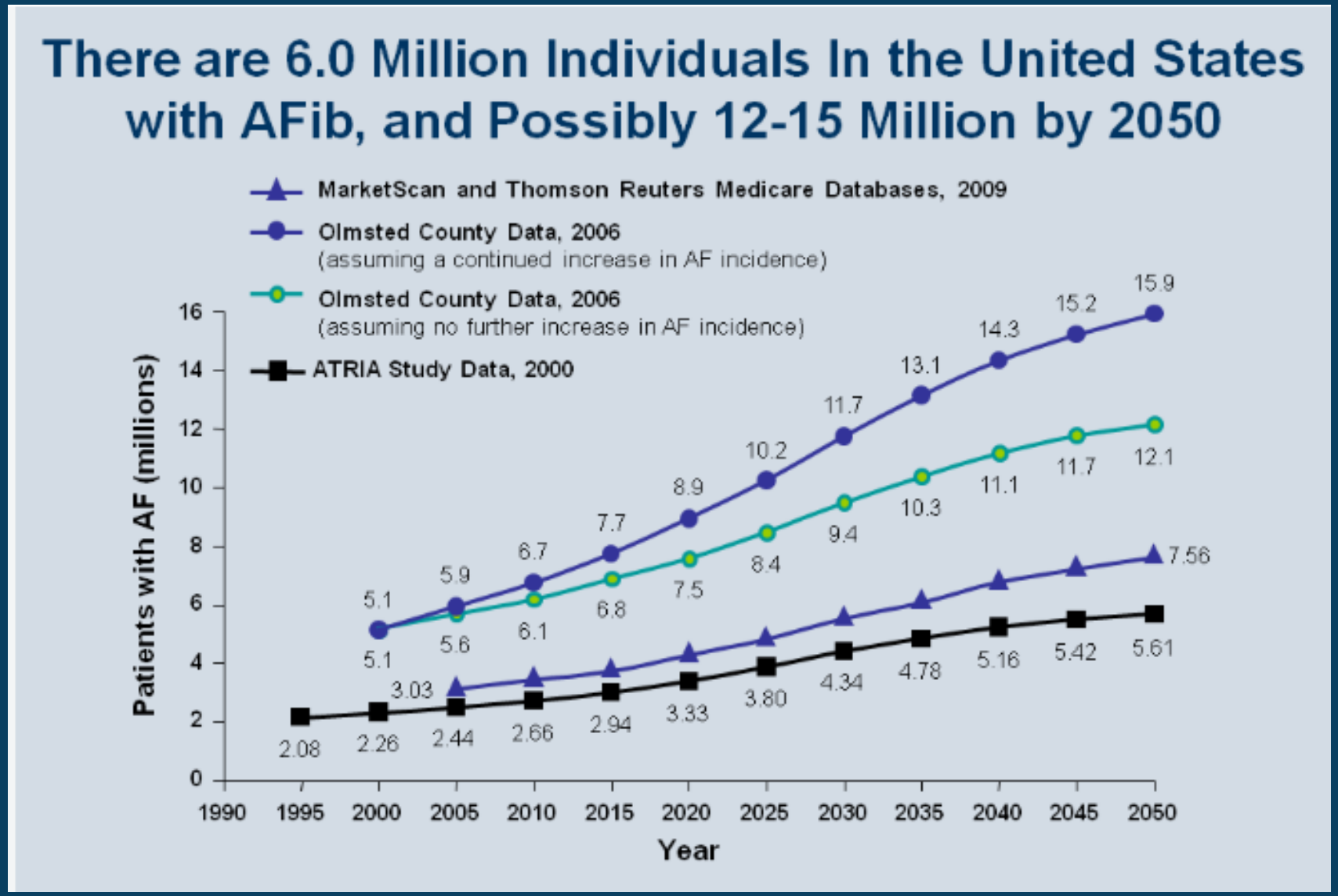
No disclosure

What is atrial fibrillation?

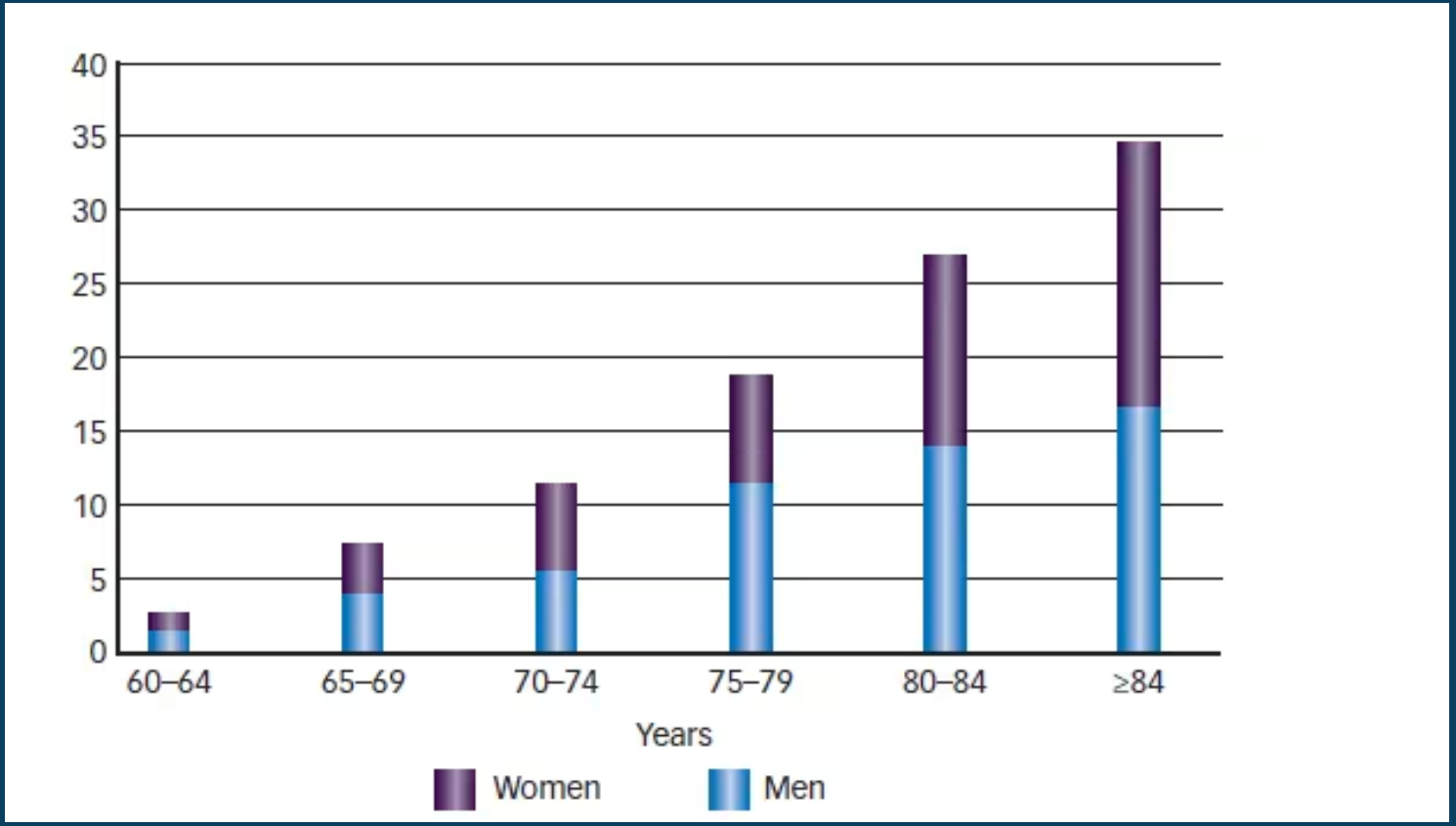
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Prevalence of atrial fibrillation



AF and age


40
35
30
25
20
15
10
5
0
60–64
65–69
70–74
75–79
80–84
≥84
Years
Women
Men

CLASSIFICATION

Term	Definition
Paroxysmal atrial fibrillation	Terminates spontaneously or with intervention within 7 days
Persistent AF	AF sustains > 7 days
Long standing persistent	AF > 12 months
Permanent	Patient and clinician make a joint decision to stop further attempt to restore or to maintain sinus rhythm
Non valvular	Albescence of rheumatic mitral stenosis, mechanical or bioprosthetic heart valve or mitral valve repair

ORAL ANTICOAGULATION

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	CHA2DS2-VASC score	Point
C	CONGESTIVE HEART FAILURE	1
H	HYPERTENSION > 140/90	1
A	AGE 75	2
D	DIABETES MELLITUS	1
S	TIA/STROKE	2
V	VASCULAR DISEASE	1
A	AGE 65-74	1
SC	FEMALE	1

ORAL ANTICOAGULATION

HAS-BLED score	Point
HYPERTENSION	1
ABNORMAL LIVER FUNCTION	1
ABNORMAL RENAL FUNCTION	1
STROKE	1
USAGE OF ANTIPLATELTES	1
BLEEDING HISOTRY	1
LABILE INR	1
AGE OVER 65	1
ALCOHOL INTAKE	1

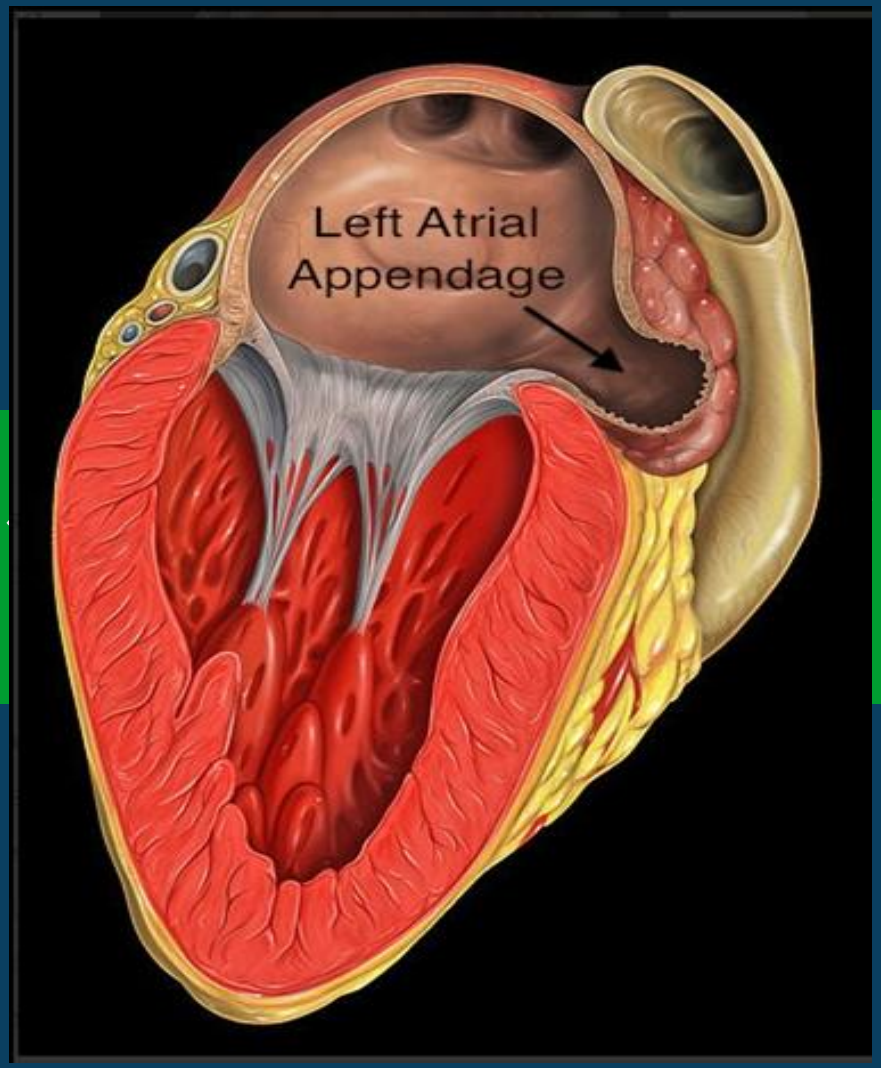
Oral anticoagulation

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CHA_2DS_2-VASc Score	Annual % Stroke Risk
0	0
1	1.3
2	2.2
3	3.2
4	4.0
5	6.7

HAS-BLED Score	Annual % Bleed Risk
0	0.9
1	3.4
2	4.1
3	5.8
4	8.9
5	9.1

LEFT ATRIAL APPENDAGE ANATOMY



What i ndage?

LEFT ATRIAL APPENDAGE

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The most common site for thrombus formation (90%) and an important source of non-pulmonary vein triggers in patients with AF

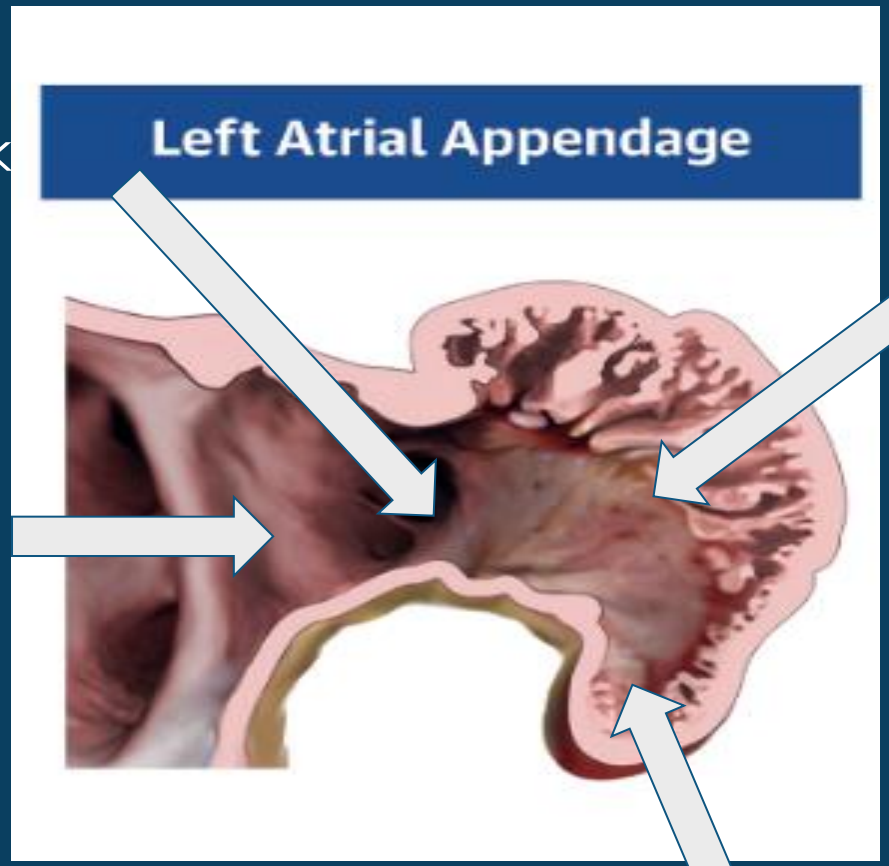
LAA is an important therapeutic target in patients with AF

THROMBOGENICITY

- Trabeculated interior surface. blood may pool in microcavities and thrombose
- Shape and morphology
- Endothelial dysfunction

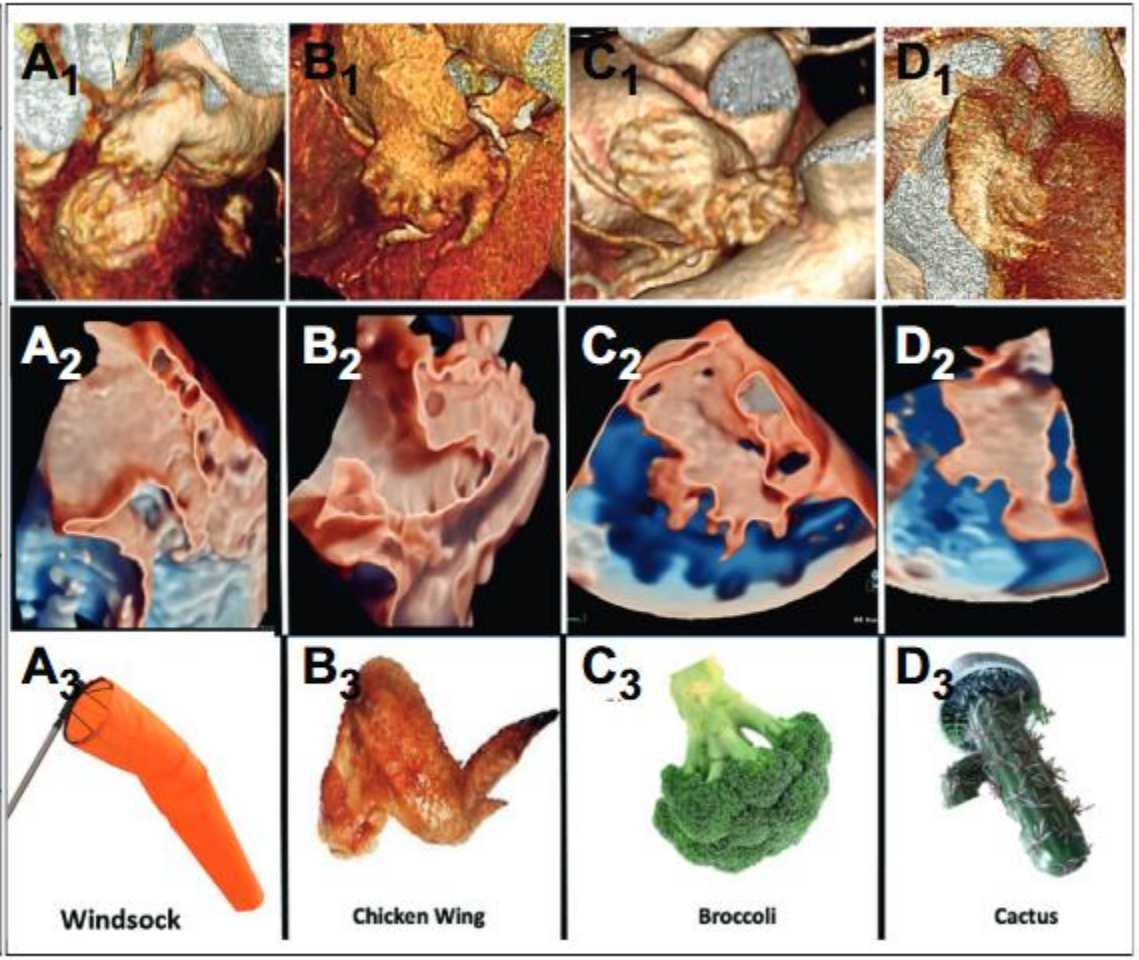
MORPHOLOGY

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MORPHOLOGY

Morphologic types of Left atrial appendage	Clinical Relevance
Windsock	• Prevalence 19% • It has long dominant lobe, and may have secondary or tertiary lobes arising from primary lobe
Chicken-Wing	• Most common. Prevalence 48% • It has a central lobe with a bend in the proximal/middle aspect of LAA and may also have secondary lobes. • Higher LAA flow velocities as compared to cactus and cauliflower subtypes.
Cauliflower or Broccoli	• Least common. Prevalence 3% • It has irregularly shaped ostium and complex internal characteristics with varying number of lobes. • The highest risk of thromboembolism independent of the CHA_2DS_2-VASc score.
Cactus	• Second most common. Prevalence 30% • It has dominant central lobe with secondary lobe extending from the main body in superior and inferior directions



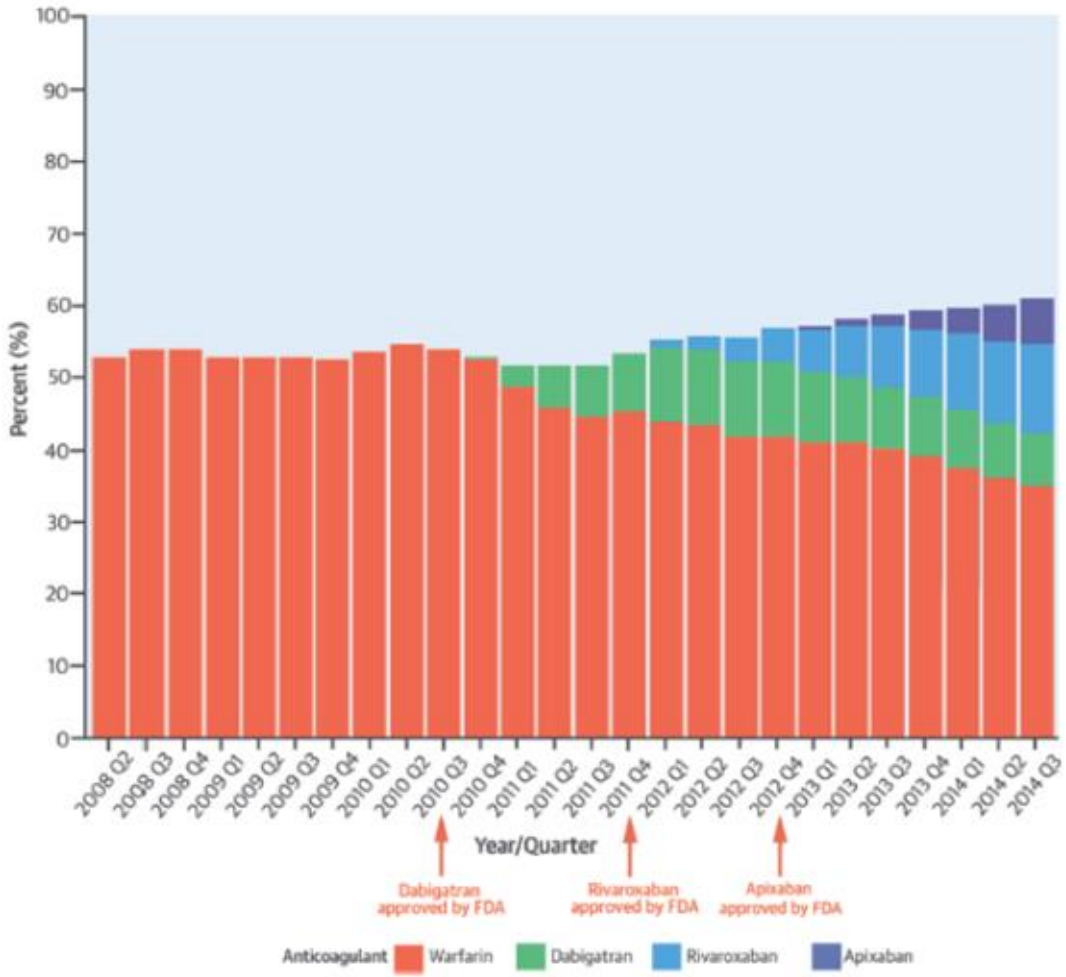
FUNCTIONALITY

- Decompression function
- Neuroendocrine function

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LEFT ATRIAL APPENDAGE EXCLUSION

ORAL ANTICOAGULATION



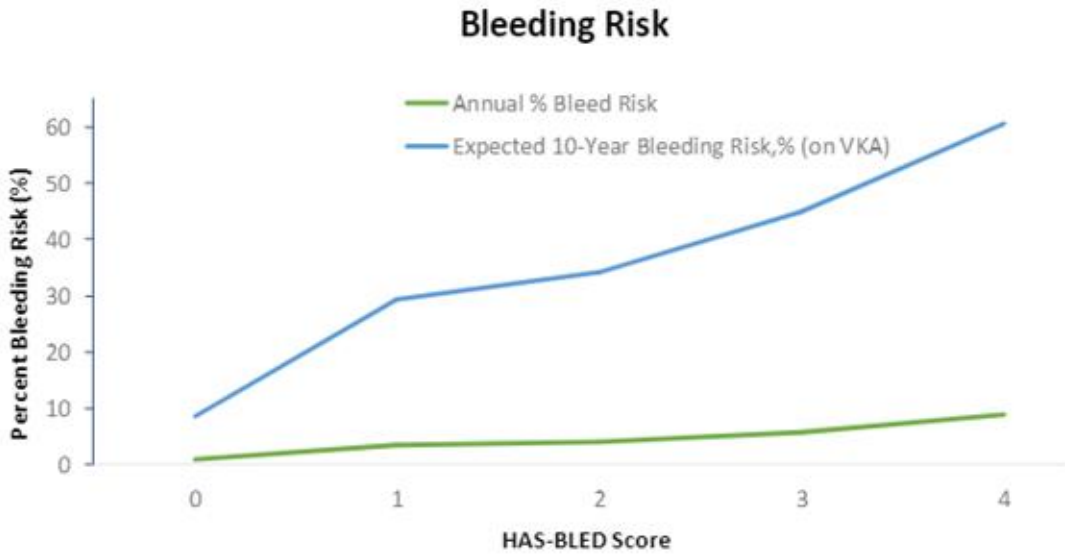
Data from the NCDR PINNACLE Registry shows that the rate of overall OAC use increased from 52.4% to 60.7% with the introduction of DOACs

Still, nearly **40%** of OAC-eligible patients are not taking OAC therapy.

ORAL ANTICOAGULATION

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CHA_2DS_2-VASc* Score	Annual % Stroke Risk		HAS-BLED Score [1]	Annual % Bleed Risk[1]	Estimated 10-Year Bleeding Risk (%)*
0	0		0	0.9	8.6
1	1.3		1	3.4	29.2
2	2.2		2	4.1	34.2
3	3.2		3	5.8	45.0
4	4.0		4	8.9	60.6
5	6.7		5	9.1	61.5



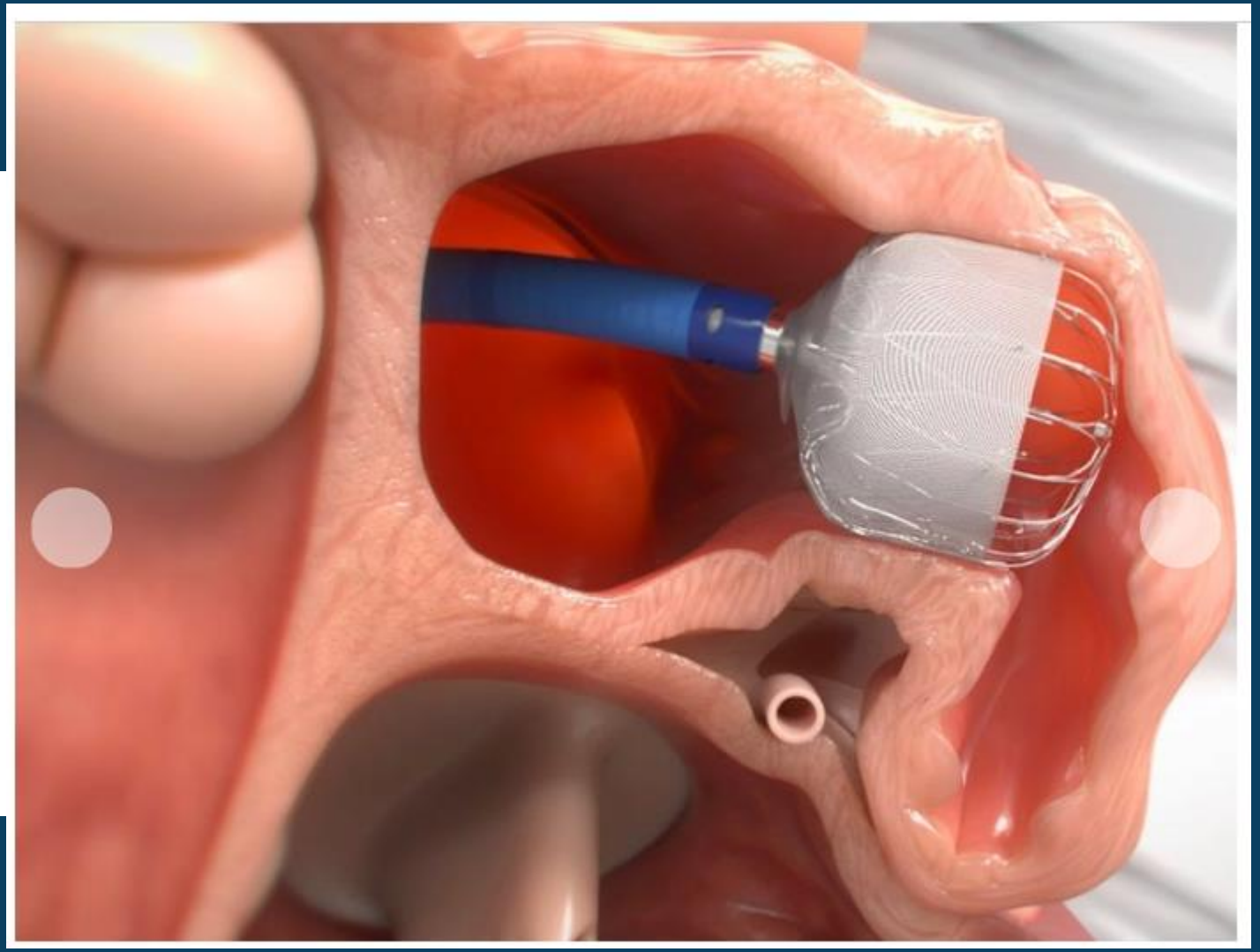
over the last two decades, LAAO has emerged as a safe and effective alternative to oral anticoagulation for stroke prevention in patients with non-valvular AF at increased risk for stroke

Transcatheter LAAO option

WATCHMAN DEVICE

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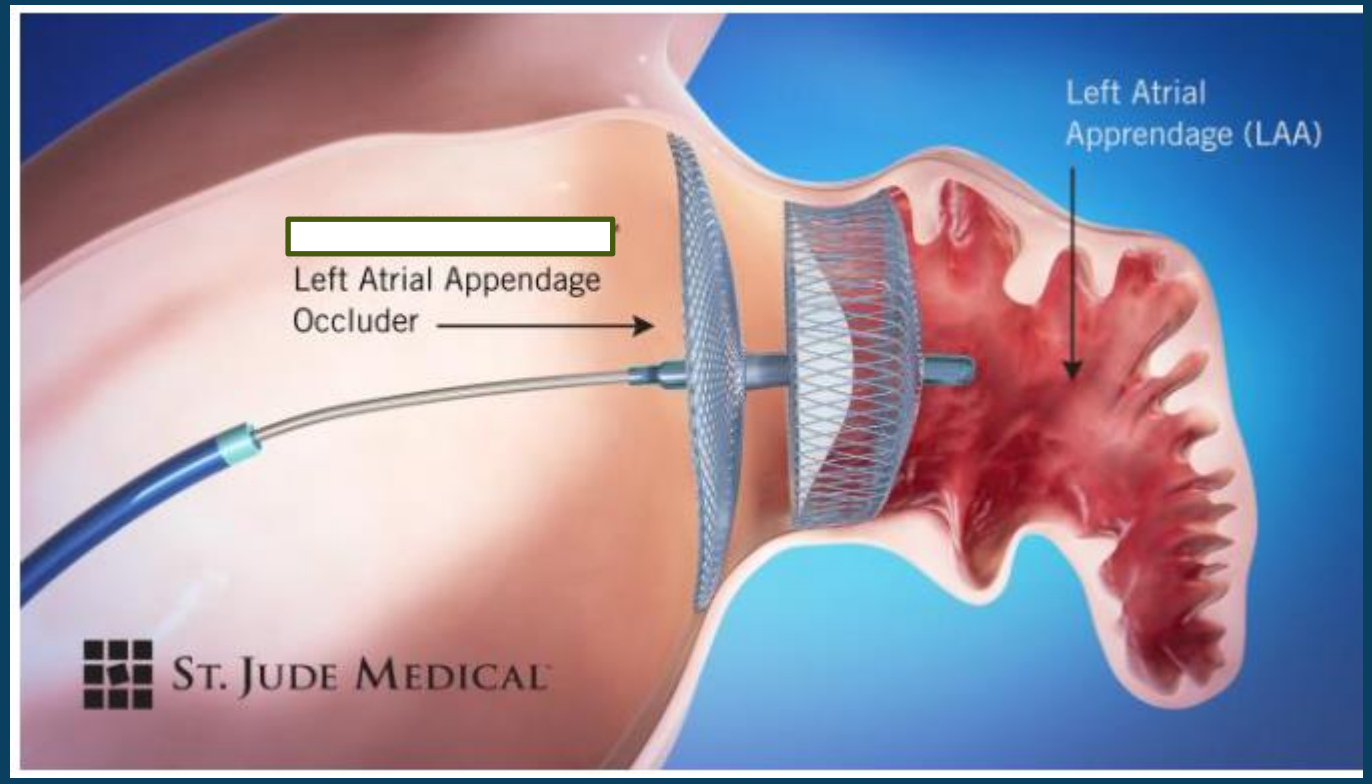




AMULET DEVICE

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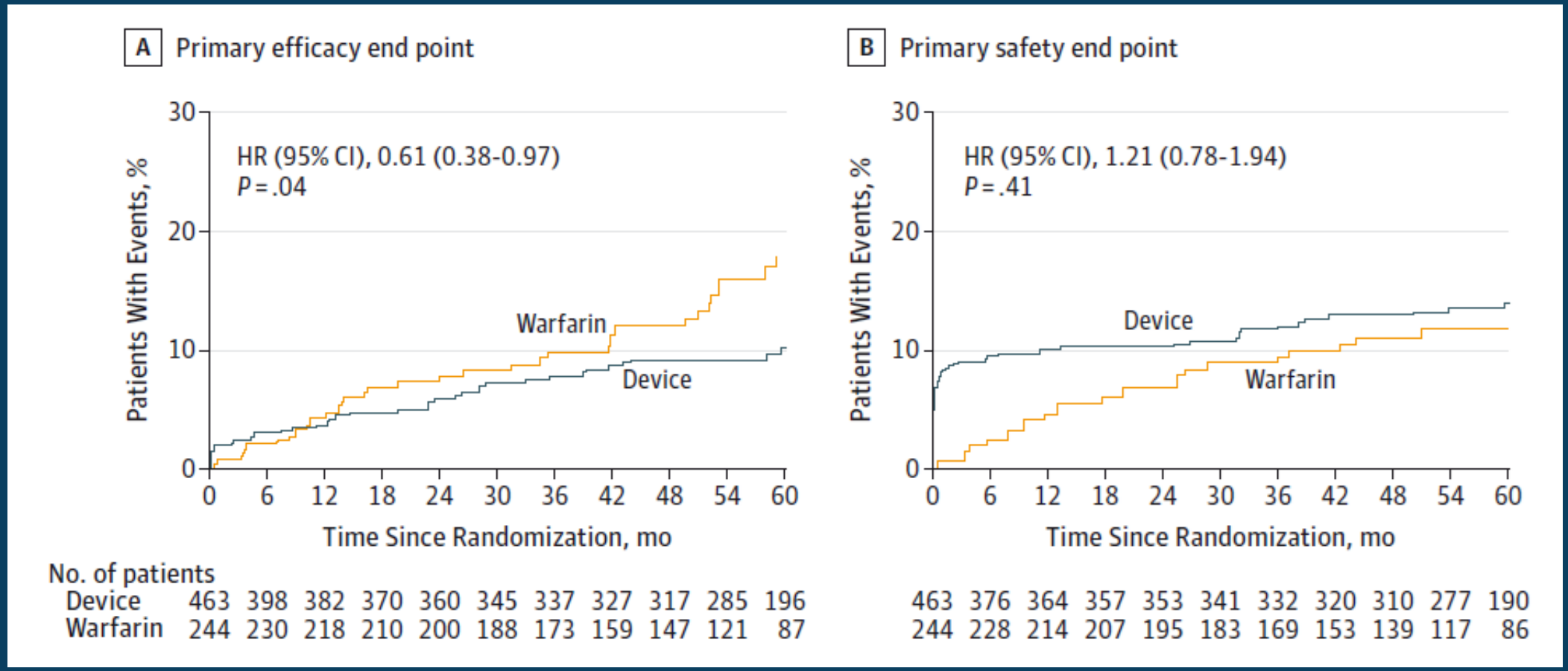




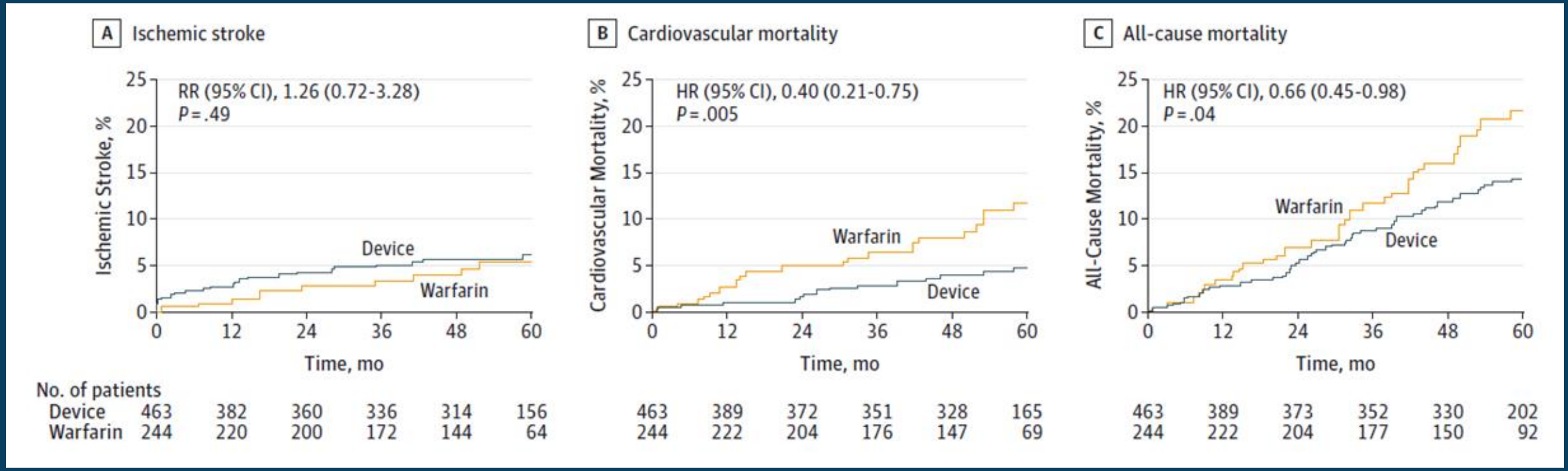
PROTECT AF trial

- Multicenter randomized non-inferiority trial
- n = 707
- 2:1 ratio
- Warfarin vs Watchman
- Primary efficacy endpoint: a composite of stroke, CV death, systemic embolism
- Primary safety endpoint: major bleeding, pericardial effusion, device embolization

PROTECT AF trial



PROTECT AF trial



PROTECT AF trial

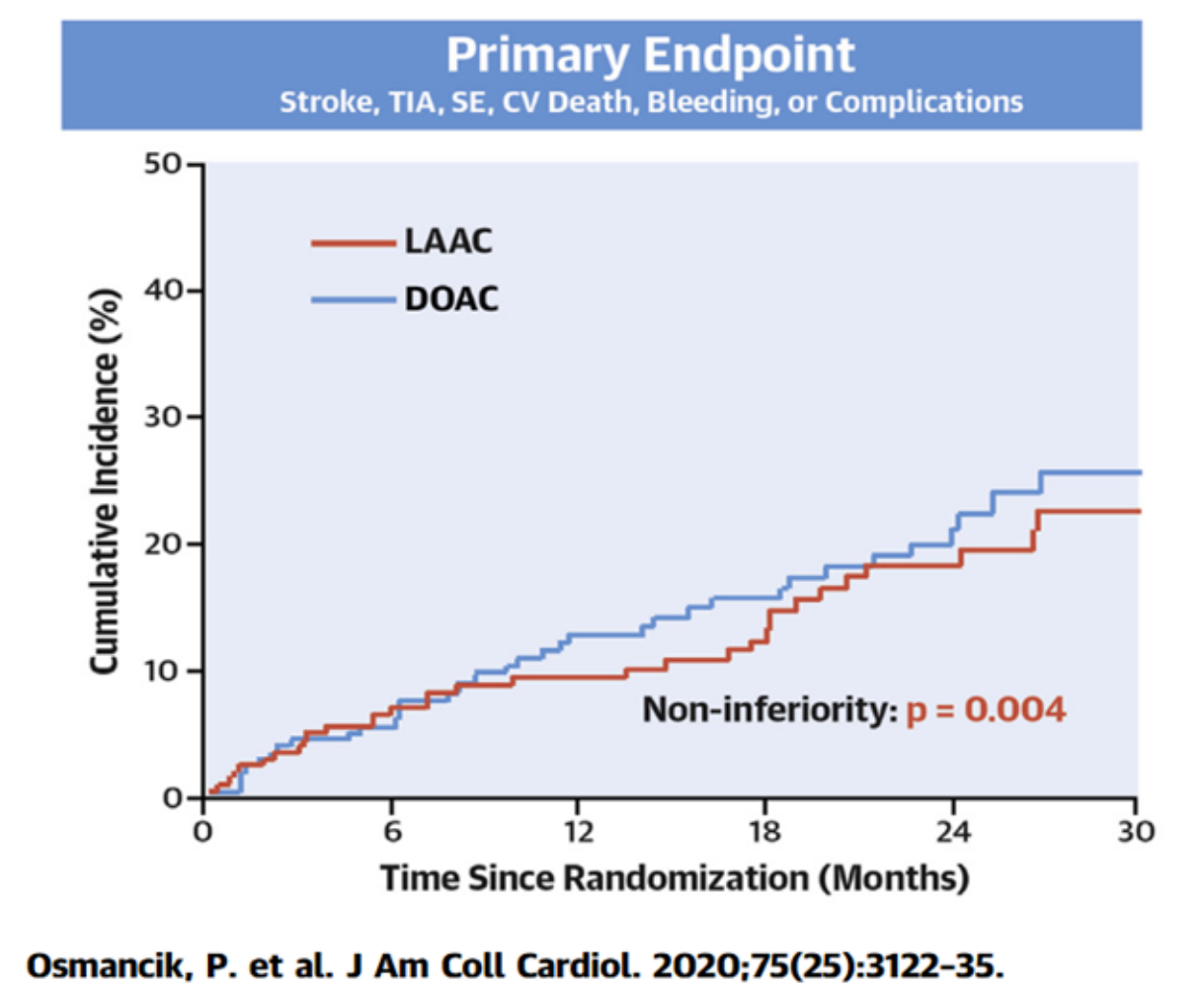
Conclusion

Percutaneous closure of LAA with Watchman device was non-inferior to oral anticoagulation with warfarin therapy

PRAGUE-17 trial

- Multicenter randomized non-inferiority trial
- n = 402
- 1:1 ratio
- DOAC vs Watchman/Amulet
- Primary endpoint: a composite of stroke, TIA, systemic embolism, CV death, major/non-major bleeding or procedure related complications

PRAGUE-17 trial



Osmancik, P. et al. J Am Coll Cardiol. 2020;75(25):3122-35.

PRAGUE-17 trial

- Among patients with AF at high risk for stroke and increased risk of bleeding LAAO was non-inferior to DOAC in preventing AF related CV, neurological and bleeding events.

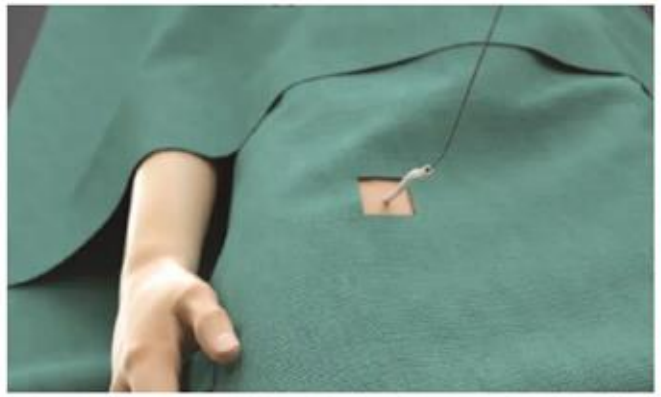
Procedure

- General anesthesia
- Transesophageal echocardiography/intracardiac echocardiogram guided procedure
- 30 minutes- two hours
- Same day discharge

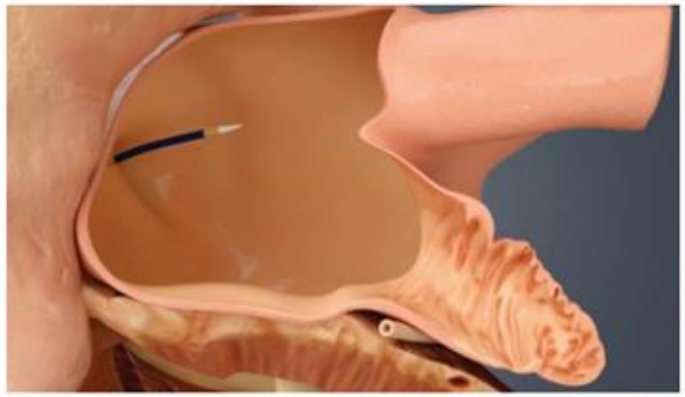
PROCEDURE

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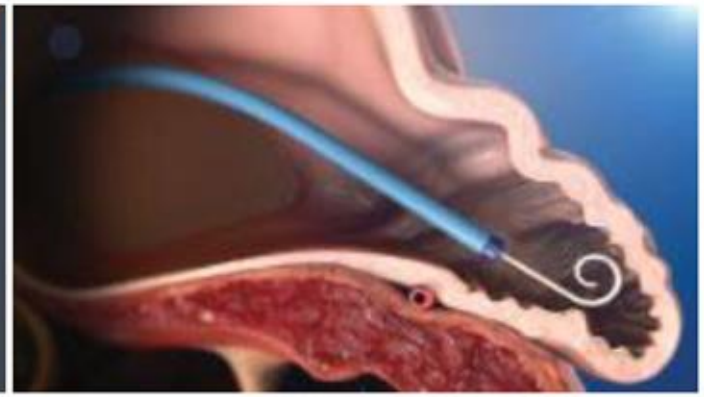
[redacted] Implant Procedure: Percutaneous Access



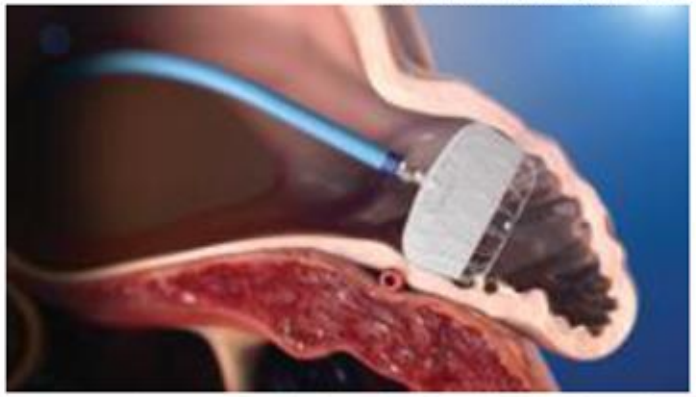
1. Using a standard percutaneous technique, a guidewire and vessel dilator are inserted into the femoral vein.



2. The implant procedure is performed with fluoroscopy and transesophageal echocardiography (TEE). The interatrial septum is crossed using a standard transseptal access system.



3. The access sheath is advanced over the guidewire into the left atrium and then navigated into the distal portion of the LAA over a pigtail catheter.

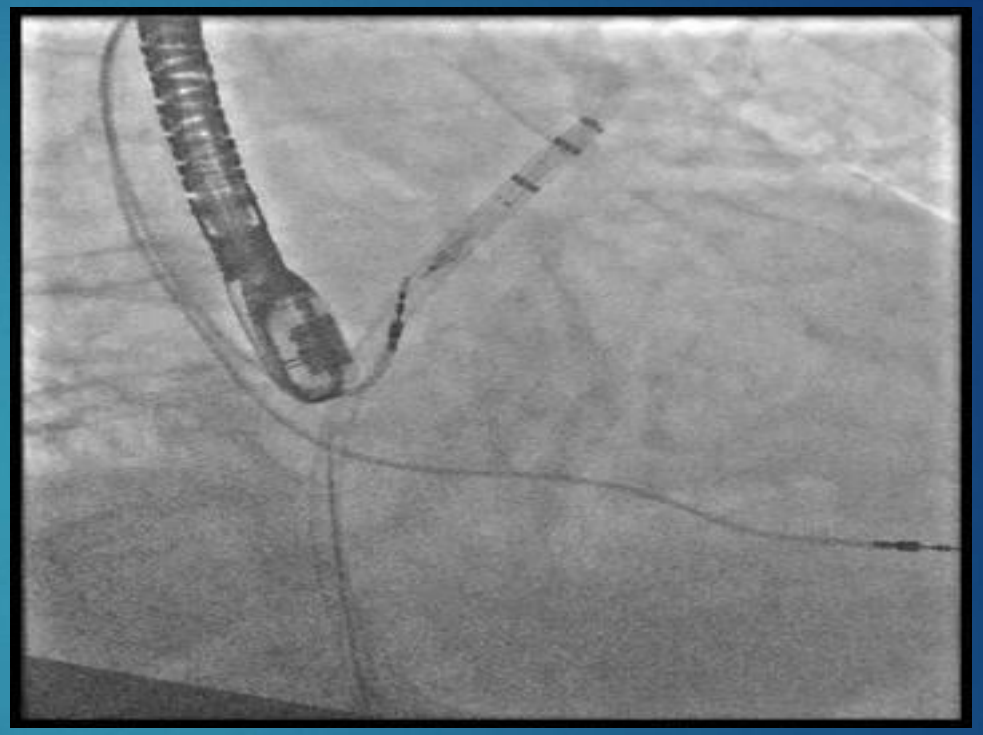


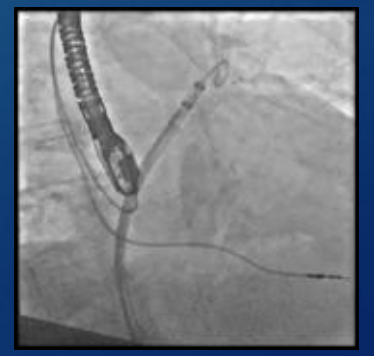
4. [redacted]s then deployed and released in the LAA.



5. Heart tissue grows over the [redacted] Implant, and the LAA is permanently sealed. Patients remain on OAC for at least 45 days post-procedure. TEE is used to confirm seal.







Complications

- LAA perforation
- Pericardial effusion
- Device embolization
- Para-device leak

INDICATIONS

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History of bleeding

Increased risk of bleeding (thrombocytopenia, cancer treatment)

Risk of falls or recurrent falls

Poor adherence to medications

Inability to maintain therapeutic INR

INDICATIONS

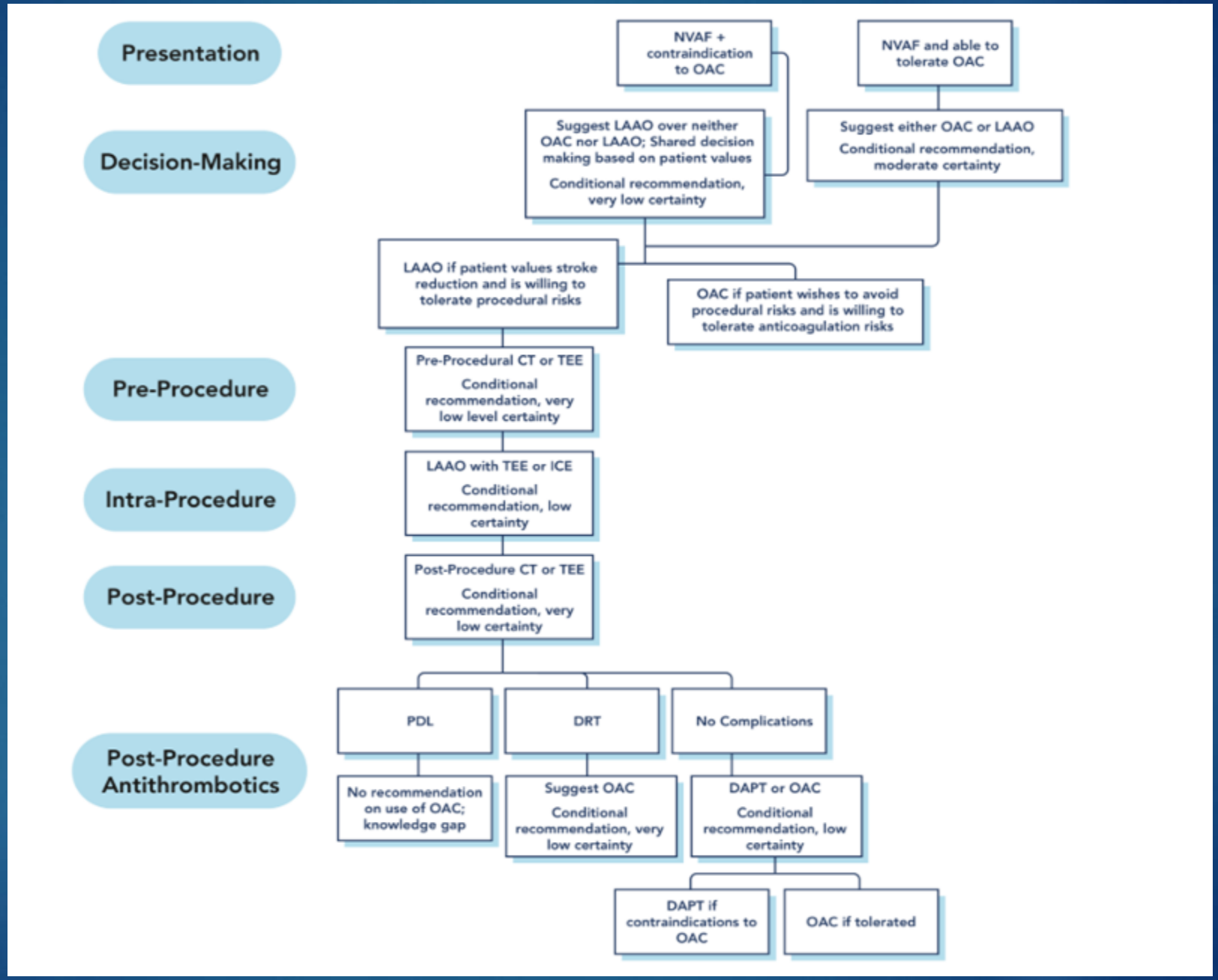
Occupation reason

Lifestyle or hobbies

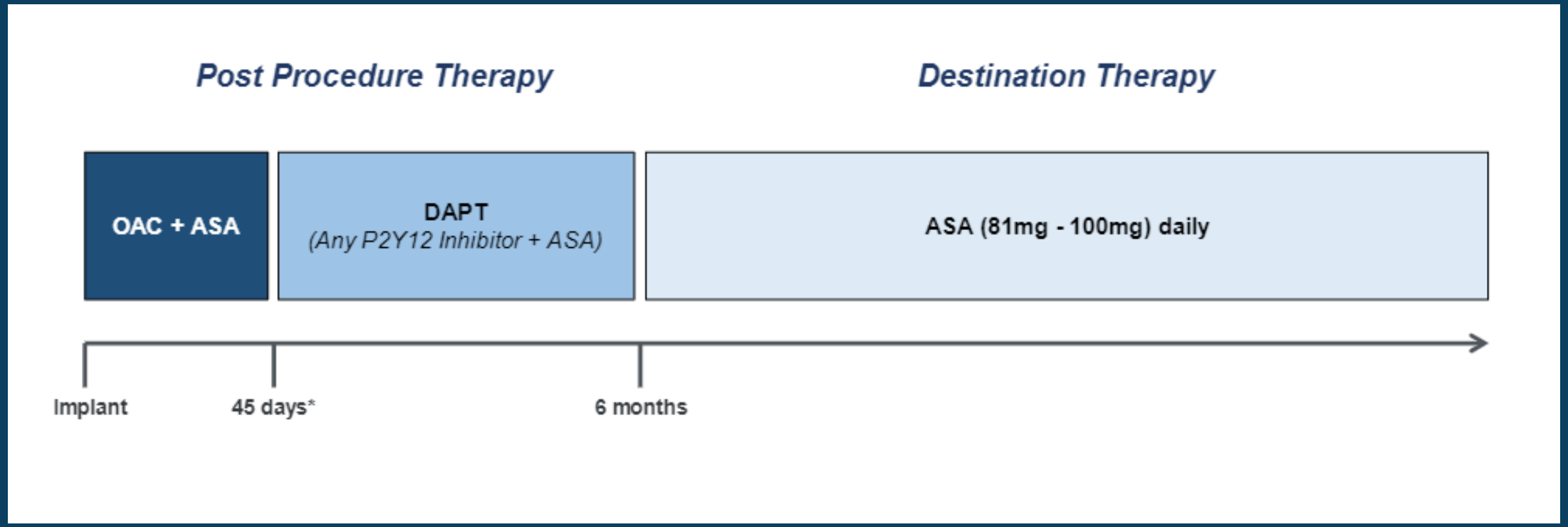
Allergies or intolerance to OAC

Cost issues

Patients refuse to take OAC


Presentation
NVAF + contraindication to OAC
NVAF and able to tolerate OAC
Decision-Making
Suggest LAAO over neither OAC nor LAAO; Shared decision making based on patient values
Conditional recommendation, very low certainty
Suggest either OAC or LAAO
Conditional recommendation, moderate certainty
LAAO if patient values stroke reduction and is willing to tolerate procedural risks
OAC if patient wishes to avoid procedural risks and is willing to tolerate anticoagulation risks
Pre-Procedure
Pre-Procedural CT or TEE
Conditional recommendation, very low level certainty
Intra-Procedure
LAAO with TEE or ICE
Conditional recommendation, low certainty
Post-Procedure
Post-Procedure CT or TEE
Conditional recommendation, very low certainty
Post-Procedure Antithrombotics
PDL
DRT
No Complications
No recommendation on use of OAC; knowledge gap
Suggest OAC
Conditional recommendation, very low certainty
DAPT or OAC
Conditional recommendation, low certainty
DAPT if contraindications to OAC
OAC if tolerated

POST LAAC MANAGEMENT



SIMPLAAAYFY TRIAL

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Enrolled 1857 patients

- ASA 81 mg daily for 12 months
-
- DAPT for six months followed by ASA 81 mg daily

- Low dose apixaban 2.5 mg po bid for three months followed by ASA 81 mg daily

Major bleeding was numerically lower with both monotherapy compared to DAPT
device related thrombosis rates is similar across all treatment groups



THANK YOU

ORAL ANTICOAGULATION

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