

ANTITHROMBOTIC STEWARDSHIP

Deprescribing Antiplatelet Agents & Anticoagulants in Long-Term Care

*A practical, evidence-based framework for continuing, modifying,
or stopping antithrombotic therapy in older adults*

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Non-Invasive Cardiologist • Cardiovascular Imaging • Preventive Cardiology

Learning Objectives

01

Indications of various Anti-platelet and Anticoagulants and duration of therapy

02

Understand the risks of long-term treatment with Anti-platelet, Anticoagulant and Combination Rx

03

Assess patient risks of adverse effects and individualize treatment based on risk profile

What Is Deprescribing?

The planned, supervised process of medication withdrawal or dose reduction to reduce unnecessary or potentially harmful use — with the goal of improving patient outcomes.

Two Paths to Deprescribing

Reactive

Triggered by side effects or adverse events already occurring.

Proactive

Initiated because a medication is no longer indicated.

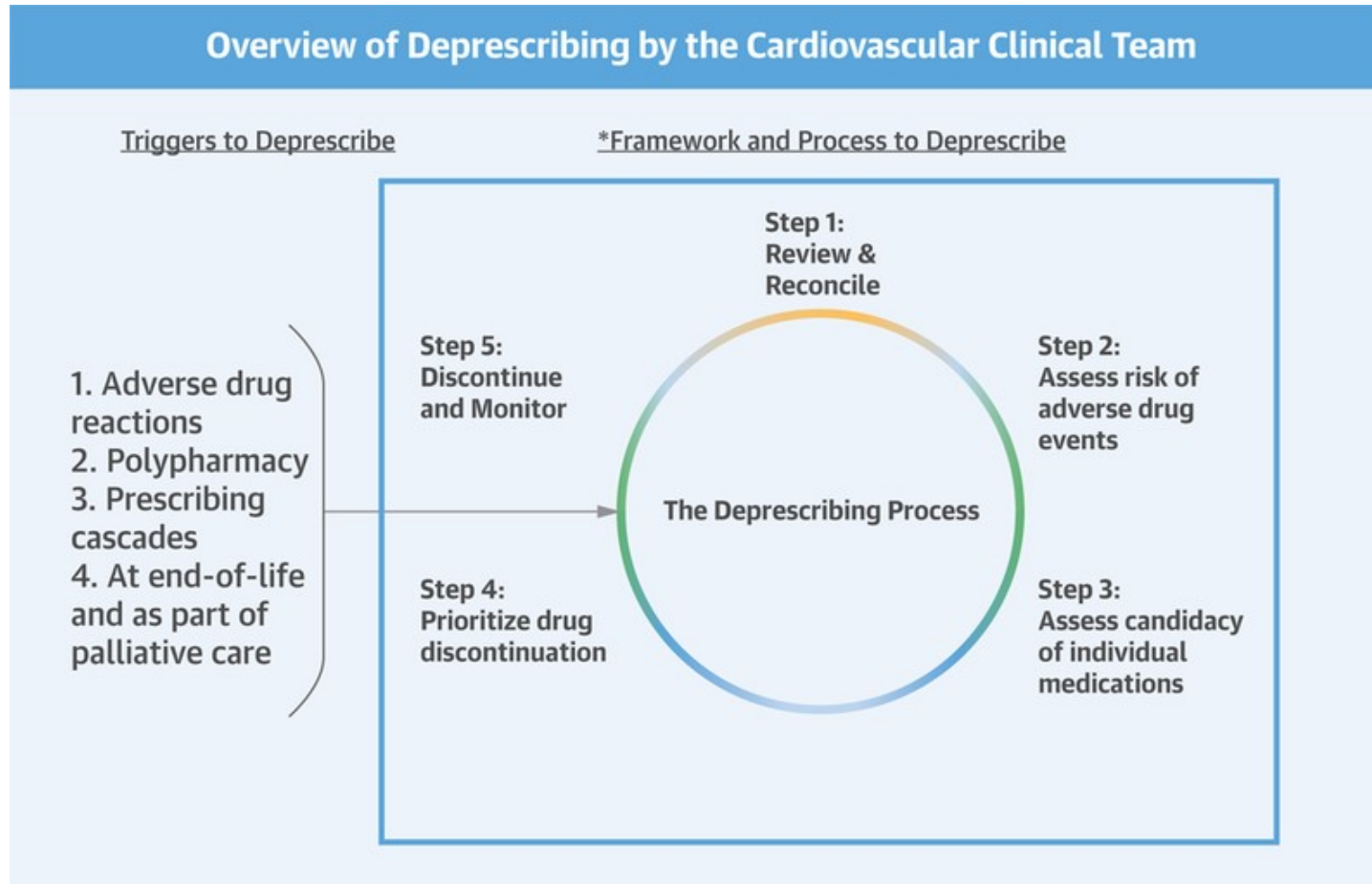
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meds = Polypharmacy

>10

meds = Hyper-polypharmacy

A comprehensive approach includes: an organized removal process • oversight by an appropriate team member • a defined outcome goal • consideration of physiologic status, life stage, and goals of care.



Key Concepts & Vocabulary

1

Shared Decision-Making

Patient values and preferences guide the plan.

2

GDMT vs. Deprescribing Tension

Guideline-directed therapy can conflict with deprescribing goals.

3

Interdisciplinary Approach

LTC physician, cardiologist, and pharmacy working together.

4

Anticoagulation Stewardship

An organizing framework for this entire talk.

5

Transitions of Care

High-risk moments for medication errors and omissions.

6

Medicolegal Considerations

Documentation of rationale protects patient and clinician.

Antithrombotic Drug Classes at a Glance

AP
T

Antiplatelet Therapy

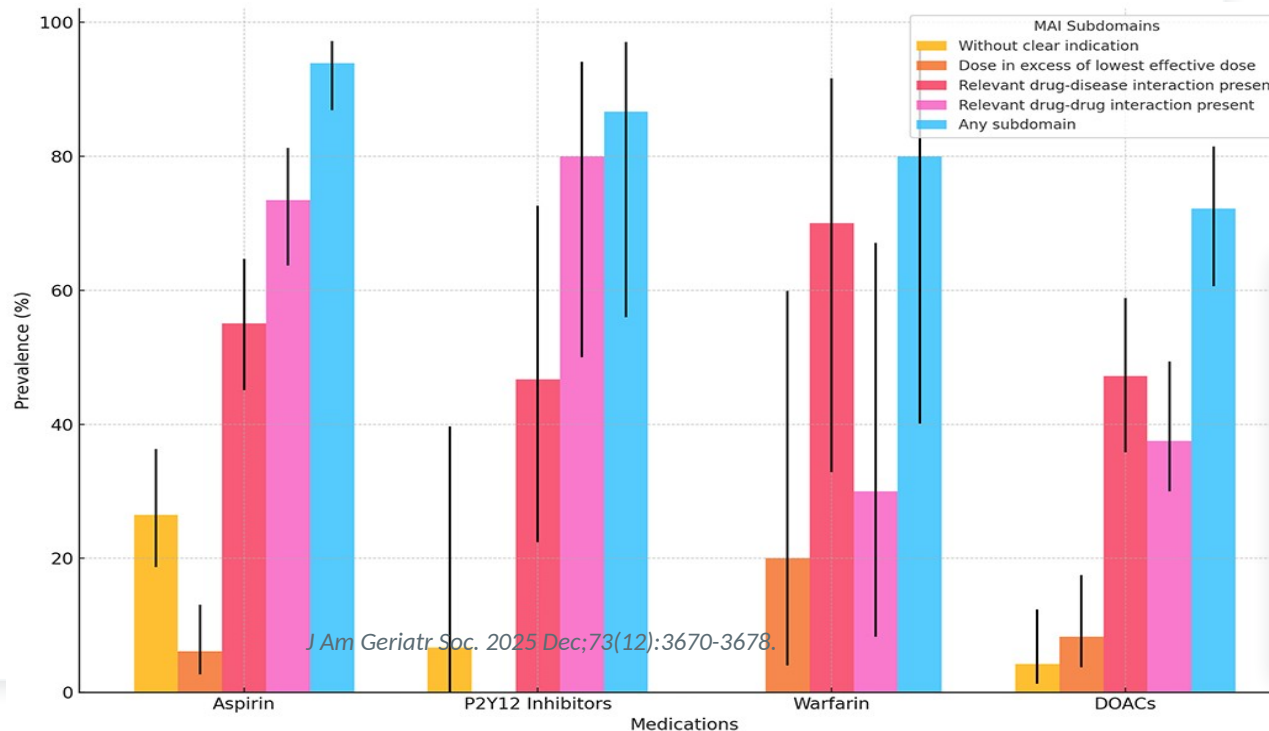
- ASA (aspirin)
- P2Y12 inhibitors: clopidogrel, prasugrel, ticagrelor
- **Indications: Primary or Secondary Cardiovascular Prevention**

OA
C

Oral Anticoagulant

- VKA (warfarin) — mechanical valve, antiphospholipid syndrome (APL), LV thrombus, AF with mitral stenosis
- DOAC — first-line for most other indications
- **Indications- DVT, PE, Afib, mechanical valve, LV thrombus, APL**

The Scope of the Problem: Inappropriate Use



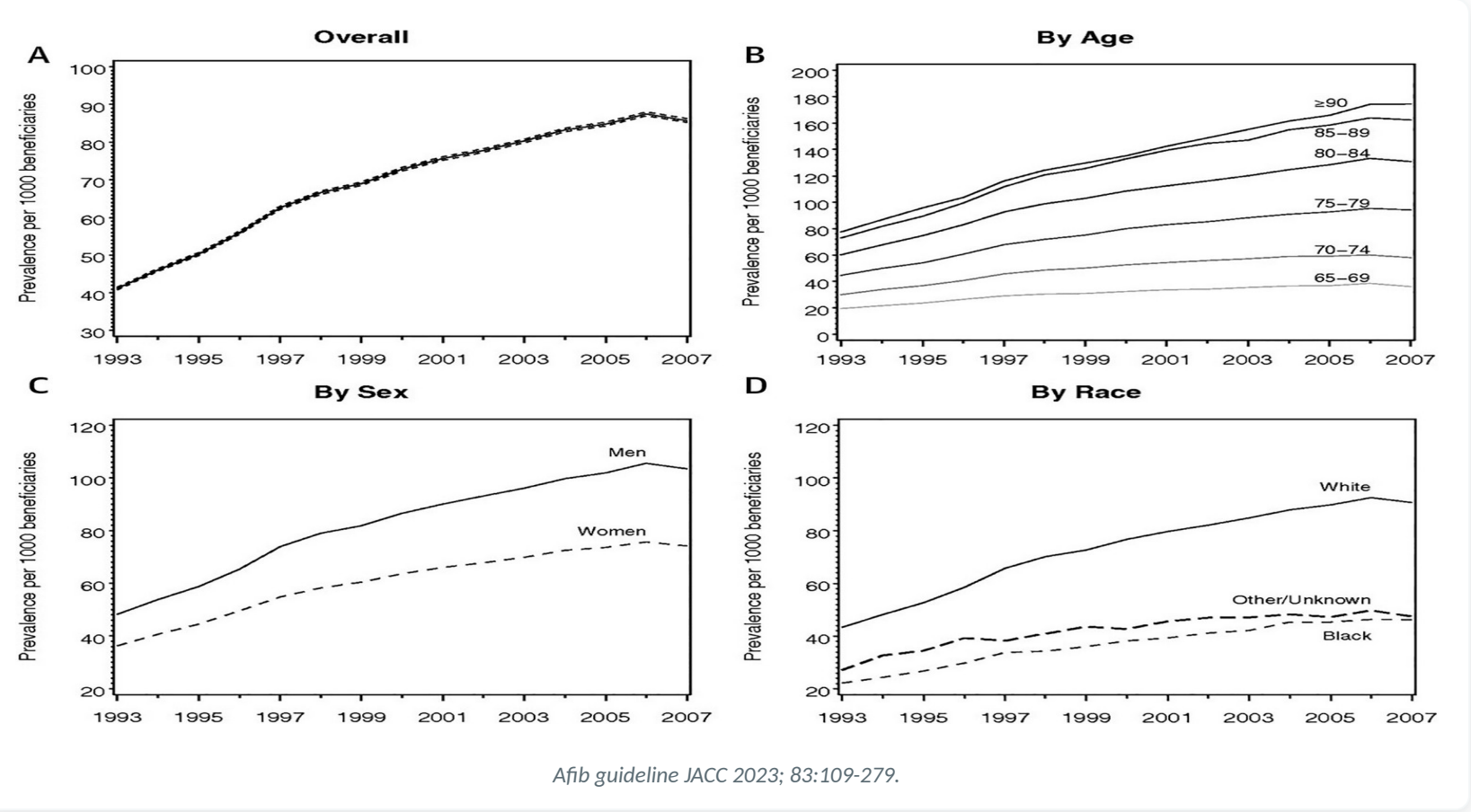
25–40%

of older adults take aspirin without an evidence-based indication

AHA Guidance

- Ages 40–70 at higher ASCVD risk: may consider (Class IIb)
- Age >70: routine use should be avoided (Class III: Harm)

AF Prevalence Is Rising With Age

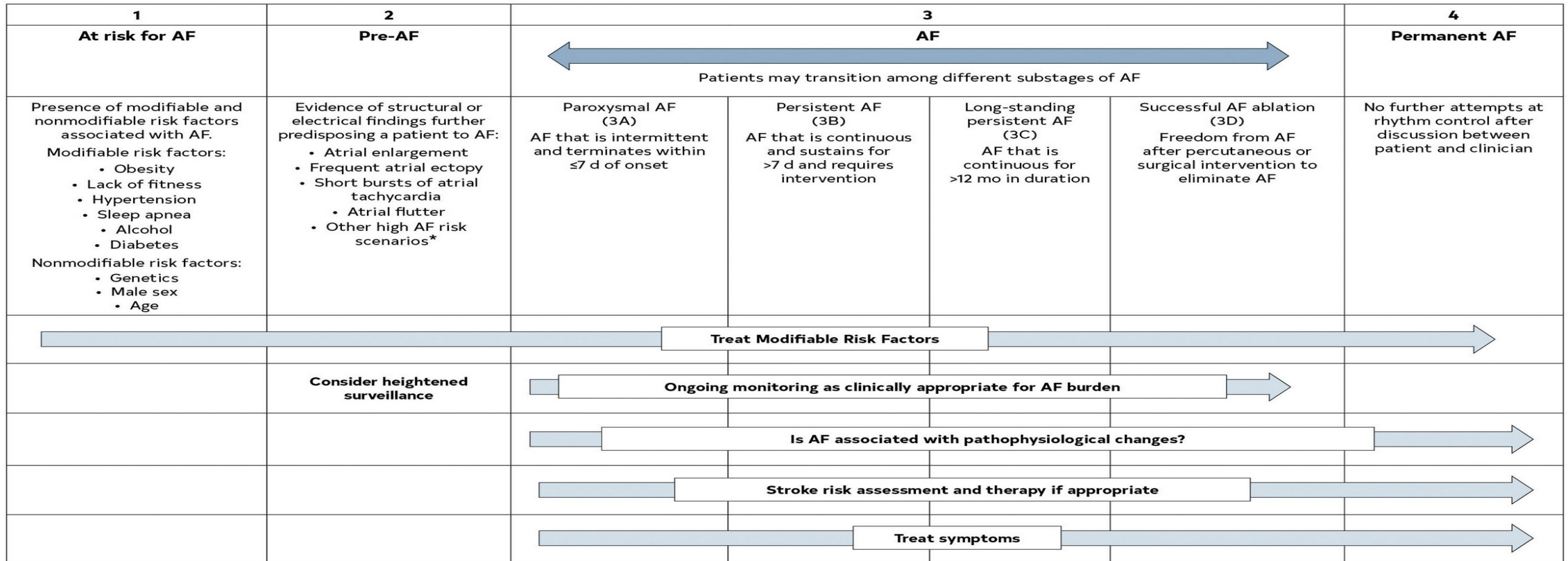


70%
of AF patients are ≥65 years old

5.6M
projected US adults with AF by 2050

45%
of AF patients are ≥75 years old

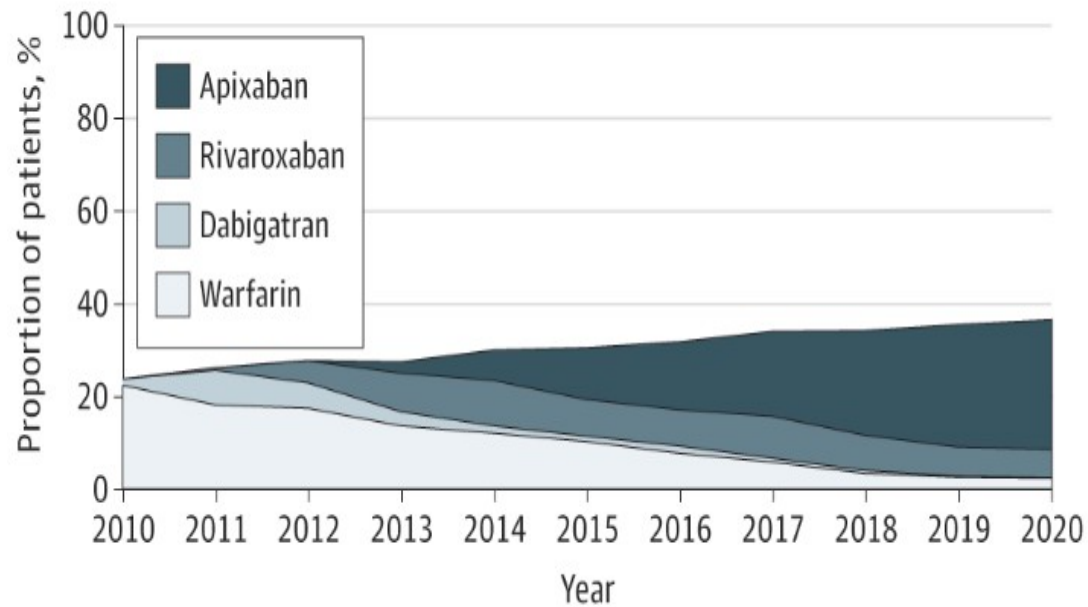
AF Stages: A Framework for Progression



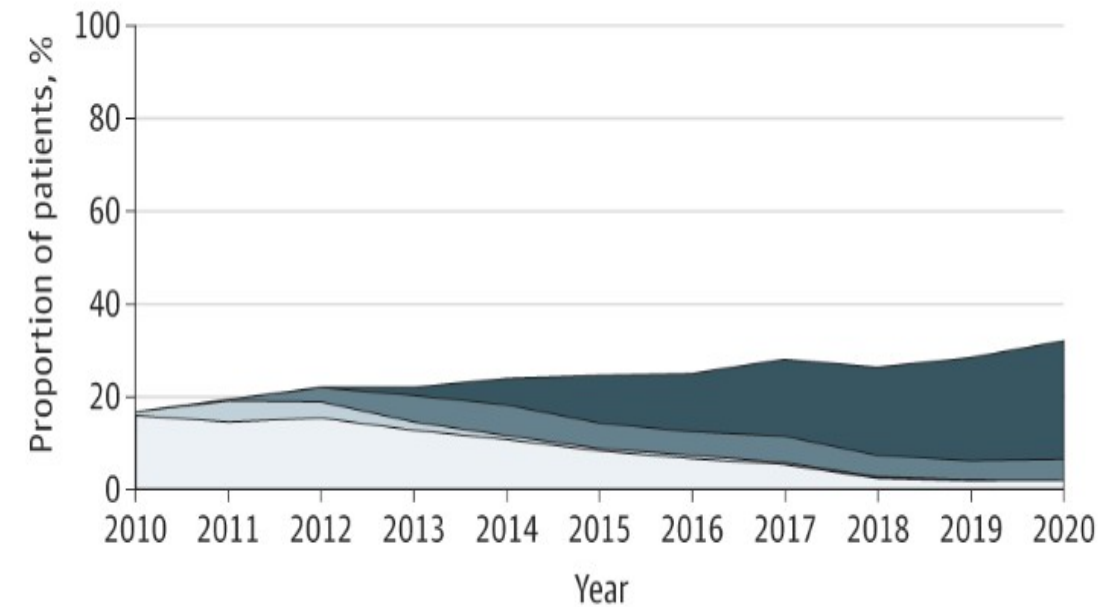
*Heart failure, valve disease, CAD, hypertrophic cardiomyopathy, neuromuscular disorders, thyroid disease.

Trends in Oral Anticoagulant Use, 2010–2020

A Age 65–79 y



B Age ≥80 y



Darae Ko, JAMA Netw Open. 2022;5(11):e2242964. Optum Medicare Database.

ATRIAL FIBRILLATION

Table 3. Major Studies on the Use of DOACs in Nonvalvular AF				
	RE-LY⁶ (N = 18,113)	ROCKET AF¹² (N = 14,264)	ARISTOTLE¹³ (N = 18,201)	ENGAGE AF-TIMI 48¹⁴ (N = 21,105)
Drug regimen	Dabigatran 150 mg twice daily/75 mg twice daily reduced	Rivaroxaban 20 mg daily/15 mg daily reduced	Apixaban 5 mg twice daily/2.5 mg twice daily reduced	Edoxaban 60 mg daily/30 mg daily reduced
Trial design	Randomized open-label	Randomized double-blind	Randomized double-blind	Randomized double-blind
Mean age (y)	71.5	73	70	72
Mean CHADS ₂ score	2.2 ± 1.2 in dabigatran group vs 2.1 ± 1.1 in warfarin group	3.48 ± 0.94 in rivaroxaban group vs 3.46 ± 0.95 in warfarin group	2.1 ± 1.1 in apixaban and warfarin groups	2.8 ± 1.0 in edoxaban and warfarin groups
% with prior CVA	20.3 vs 19.8	54.9 vs 54.6	19.2 vs 19.7	28.1 vs 28.3
TTR in warfarin arm	64%	55%	62.2%	64.9%
Stroke/systemic embolism (HR [95% CI])	0.66 (0.53-0.82)	0.88 (0.75-1.03)	0.79 (0.66-0.95)	0.68 (0.55-0.84)^a
Ischemic stroke (HR [95% CI])	0.76 (0.60-0.98)	0.94 (0.75-1.17)	0.92 (0.74-1.13)	0.80 (0.62-1.04) ^a
Hemorrhagic stroke (HR [95% CI])	0.26 (0.14-0.49)	0.59 (0.37-0.93)	0.51 (0.35-0.75)	0.49 (0.32-0.74)^a
All-cause mortality (HR [95% CI])	0.88 (0.77-1)	0.85 (0.70-1.02)	0.89 (0.80-0.99)	0.92 (0.83-1.01)
Major bleed (HR [95% CI])	0.93 (0.81-1.07)	1.04 (0.90-1.20)	0.69 (0.60-0.80)	0.84 (0.73-0.97)^a
GI bleed (HR [95% CI])	1.50 (1.19-1.89)	1.39 (1.19-1.61)	0.89 (0.70-1.15)	1.40 (1.13-1.73)^a
CV mortality (HR [95% CI])	0.86 (0.72-0.99)	0.89 (0.73-1.10)	0.89 (0.76-1.04)	0.82 (0.72-0.93)^a
Legend: Red represents a statistically significant increase; green represents a statistically significant decrease. Abbreviations: AF, atrial fibrillation; CI, confidence interval; CV, cardiovascular; CVA, cerebrovascular accident; DOAC, direct oral anticoagulant; GI, gastrointestinal; HR, hazard ratio; TTR, time in therapeutic range. ^a HRs based on events for the edoxaban-indicated population (creatinine clearance ≤ 95 mL/min in the 60-mg edoxaban population).				

PAUSE FOR DISCUSSION

Case Studies I

- 1 76F with AF, HTN, DM — recurrent falls in the nursing facility, admissions for GI bleed (?angiodysplasia). Stop anticoagulation?
- 2 81M CAD, AF, PCI 5 years ago on apixaban + ASA. Hb 10, Cr 1.7, no active bleeding. Cardiology notes continuing both. Stop ASA?
- 3 78M h/o CVA 2 years ago, AF, undergoing hip surgery. Does he need bridging? Cr 1.9 — how many days to hold OAC before surgery?
- 4 80M no h/o AF; pacemaker device interrogation shows 6–8 hour runs of occasional AF. Should he be anticoagulated?

CHADS₂ -> CHA₂DS₂VASc

CHADS2 Risk	Score
CHF	1
Hypertension	1
Age > 75	1
Diabetes	1
Stroke or TIA	2

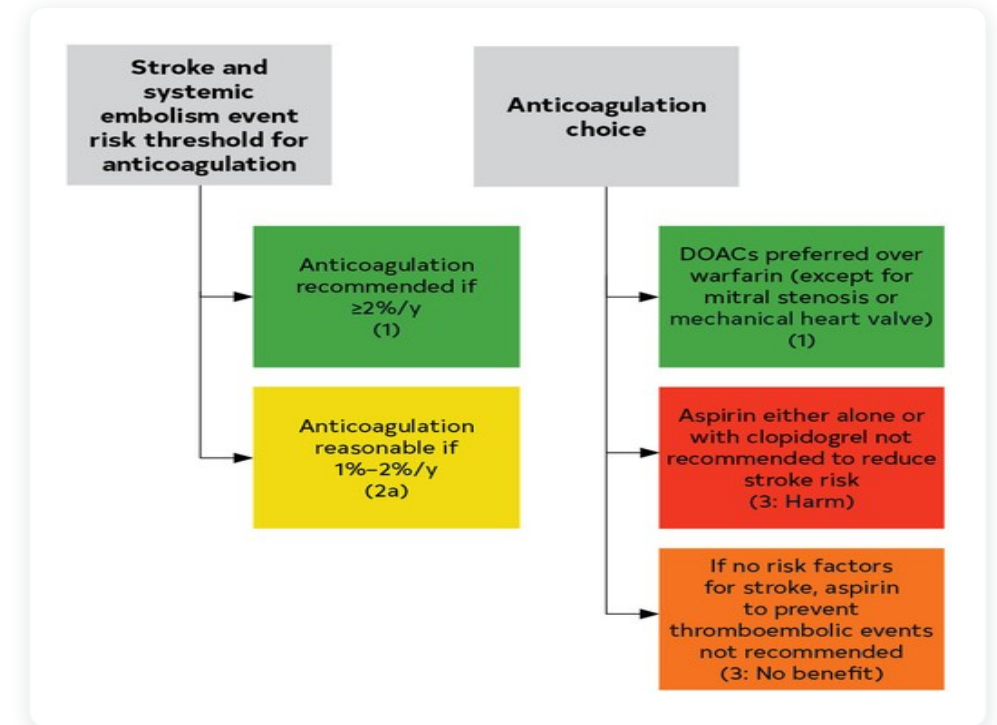
From ESC AF Guidelines
<http://escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/guidelines-afib-FT.pdf>

CHA2DS2-VASc Risk	Score
CHF or LVEF ≤ 40%	1
Hypertension	1
Age ≥ 75	2
Diabetes	1
Stroke/TIA/Thromboembolism	2
Vascular Disease	1
Age 65 - 74	1
Female	1

Annual thromboembolic risk of ≥2% per year (e.g, CHA₂DS₂-VASc score of ≥2 in men and ≥3 in women), anticoagulation is recommended.

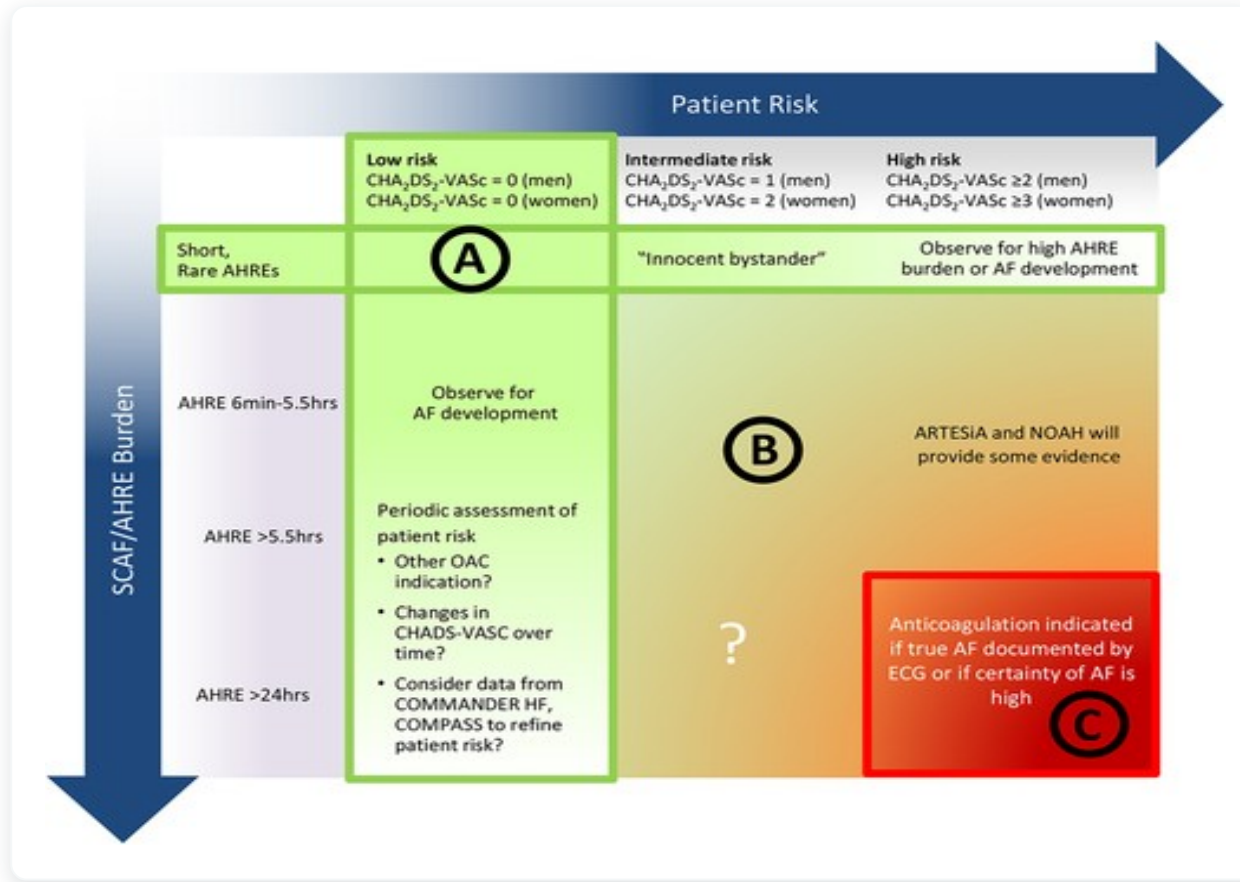
Anticoagulation Thresholds by Stroke Risk

- $\geq 2\%$ /year risk (CHA₂DS₂-VASc ≥ 2 men, ≥ 3 women): anticoagulation recommended
- 1–2%/year risk (CHA₂DS₂-VASc 1 men, 2 women): anticoagulation reasonable
- Markov model tipping point for warfarin: $\sim 1.7\%$ /year stroke risk
- DOAC trials enrolled lower-risk patients ($\sim 1/3$ with CHADS₂ 0–1) — supports a lower threshold when a DOAC is used



Aspirin — alone or with clopidogrel — is NOT recommended to reduce stroke risk in AF (Class III: Harm).

Device-Detected AF: Navigating the Gray Zone



- <5 min episode, no other OAC indication → no anticoagulation
- 5 min–24 h + CHA₂DS₂-VASC ≥ 3 → anticoagulation may be reasonable (shared decision-making)
- ≥24 h + CHA₂DS₂-VASC ≥ 2 → anticoagulation reasonable (shared decision-making)

ARTESiA: subclinical AF episodes ≥6 min but <24h actively studied for anticoagulation benefit.
NOAH stopped early as there was no statistical difference.

BLEEDING RISK

HAS-BLED

Letter	Clinical Characteristic	Points
H	Hypertension	1
A	Abnormal Liver or Renal Function	1 or 2
S	Stroke	1
B	Bleeding	1
L	Labile INR	1
E	Elderly (age > 65)	1
D	Drugs or Alcohol	1 or 2
Maximum Score		9

Low risk (score=0-1), moderate risk (score 2), **high risk (score ≥ 3)** major bleeding rates of 1, 1.9 and **≥ 3.7** /100pt yr

PREDICTORS OF ICH

- Older Age
- Prior CVA or TIA
- VKA vs DOAC
- Concomitant Antiplatelet
- Mod-Severe Kidney Dx
- Blood Pressure

Assessing & Managing Bleeding Risk

Risk-Stratified Major Bleeding Rates

1%

Low risk

1.9%

Moderate risk

3.74%

High risk

Long-term anticoagulation REMAINS reasonable

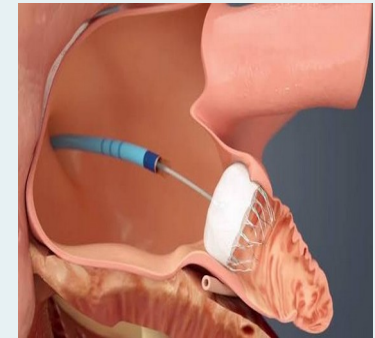
- Treatable GI, pulmonary, or GU bleeding
- Bleeding related to isolated trauma
- Bleeding related to procedural complications

Long-term anticoagulation IS CONTRAINDICATED

- Severe, nonreversible GI, pulmonary, or GU bleeding
- Spontaneous intracranial/intraspinal bleeding, nonreversible cause
- Serious bleeding from recurrent falls when the cause isn't treatable

LAA Occlusion: An Alternative to OAC

- AF + moderate-high stroke risk (CHA₂DS₂-VASc ≥2) + nonreversible contraindication to long-term OAC → percutaneous LAAO (pLAAO) is reasonable
- AF + moderate-high stroke risk + high bleeding risk on OAC → pLAAO may be a reasonable alternative, based on patient preference and procedural risk
- Evidence for oral anticoagulation remains more extensive overall
- **Key supporting trials: PROTECT AF, PREVAIL**
- **CHAMPION-AF First line as alternative to anticoagulant**



**Left Atrial Appendage
Occlusion Device**

e.g., Watchman

Stopping OAC After Successful AF Ablation

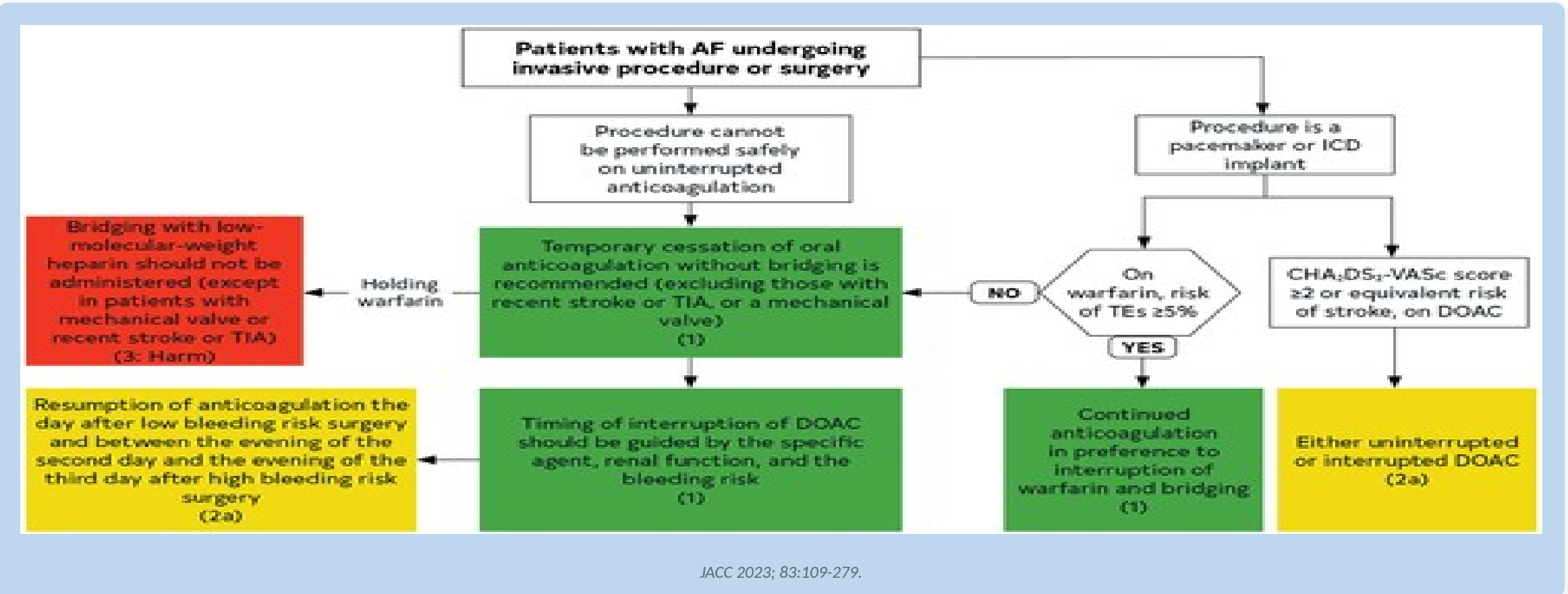
OCEAN

- Mean age 66, mean CHA₂DS₂-VASc score 2.2
- Low-to-intermediate risk (CHA₂DS₂-VASc ≤3) maintaining sinus rhythm post-ablation
- OAC discontinuation at 1 year post-ablation is a reasonable approach — absent extensive atrial myopathy or other high-risk features

OPTION

- For high stroke-risk patients unable to tolerate anticoagulation
- Concomitant AF ablation + percutaneous LAAC
- Lower risk of major bleeding at 36 months vs. remaining on anticoagulation

Perioperative Anticoagulation Management



JACC 2023; 83:109-279.

Managing Active Bleeding & Restarting Therapy

Life-threatening bleeding: stop ALL antithrombotic therapy immediately and reverse. Restart only after endoscopic evaluation and risk assessment.

Restarting After GI Bleed

- APT: restart within 3 days; consider dual → single agent (prefer P2Y12)
- OAC: restart within 1 week — DOAC at minimum dose, or VKA target INR 2–2.5
- Triple therapy: de-escalate to dual therapy
- If restarting after life-threatening bleed: low-dose apixaban preferred for OAC; P2Y12 inhibitor preferred for APT

Restarting After ICH

- Very high thromboembolic risk (mechanical valve, rheumatic HD): early resumption, 1–2 weeks
- Standard risk: delayed resumption, 4–8 weeks, after risk-benefit assessment
- High recurrent ICH risk (e.g., cerebral amyloid angiopathy): consider anticoagulation-sparing strategy (LAAO)

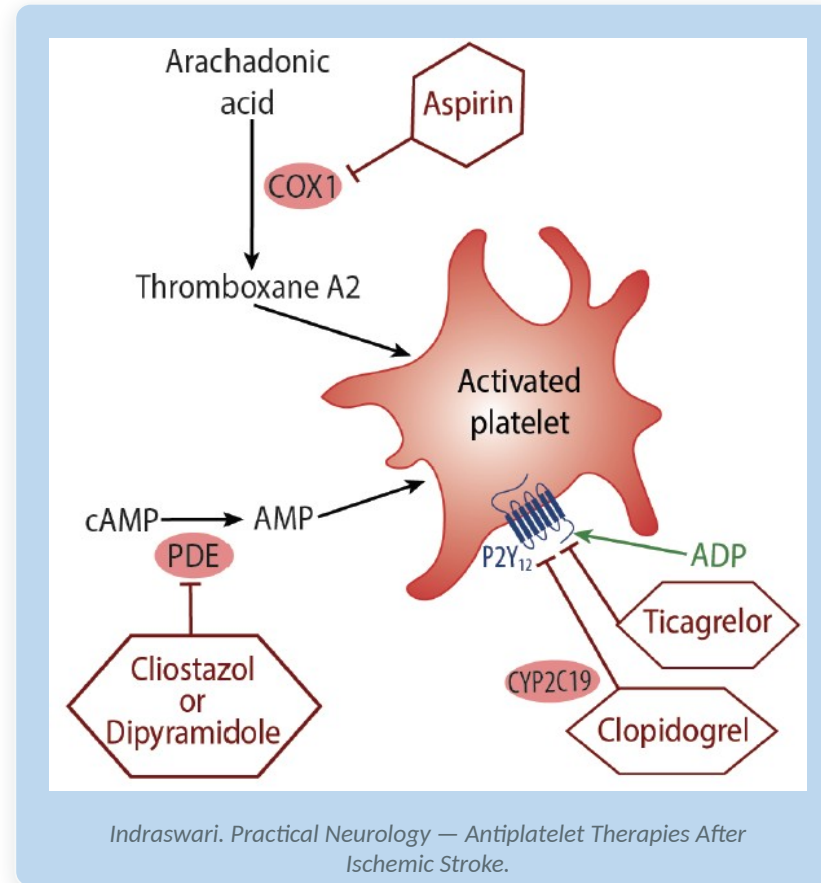
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How Antiplatelets Work: Mechanism of Action

- Aspirin inhibits COX-1, blocking thromboxane A2 production
- P2Y₁₂ inhibitors (clopidogrel, ticagrelor) block ADP-mediated platelet activation
- Cilostazol / dipyridamole inhibit PDE, raising cAMP to reduce platelet activation



PAUSE FOR DISCUSSION

Case Studies II

1

74M with DM, no h/o cardiovascular disease, taking ASA. Continue? What if his coronary calcium score is >300?

2

76M MI, PCI with 2 stents 4 years ago, on DAPT. Can he transition to single antiplatelet therapy (SAPT)?

3

78M h/o CVA treated in California, currently on DAPT while traveling to visit family 3 months later. Can he stop one agent?

4

80M PCI (L main stent) for NSTEMI 2 years ago, multiple non-cardiac admissions with mildly elevated troponin, Hb 8.5, Cr 1.8, still on DAPT. Stop P2Y12 or ASA?

Aspirin for Secondary Prevention

21%

reduction in cardiovascular events

13%

reduction in all-cause mortality

2x+

higher odds of severe bleeding

In individuals with preexisting cardiovascular disease, low-dose aspirin retains net clinical value — the reduction in CV events and mortality outweighs the doubled bleeding risk in most secondary-prevention patients.

Aspirin for Primary Prevention: Trials & Verdict

Trial	Population	Key Finding
ASCEND	15,480 with diabetes, no prior CVD	12% ↓ MI/stroke; 30% ↑ major bleeding
ARRIVE	12,546, mean 17% 10-yr CVD risk	No significant CVD benefit; 2x GI bleeding
ASPREE	19,114, average age 74	No benefit; 30% ↑ major hemorrhage

- USPSTF (2021): aspirin should NOT be initiated for primary prevention at age ≥ 60
- Ages 40–59 with $\geq 10\%$ 10-year CVD risk: individualized consideration only
- Consistent with current ACC/AHA and ESC guidance
- Without preexisting CVD: modest benefit (0.41% ARR) does not outweigh bleeding risk (0.47% ARI)

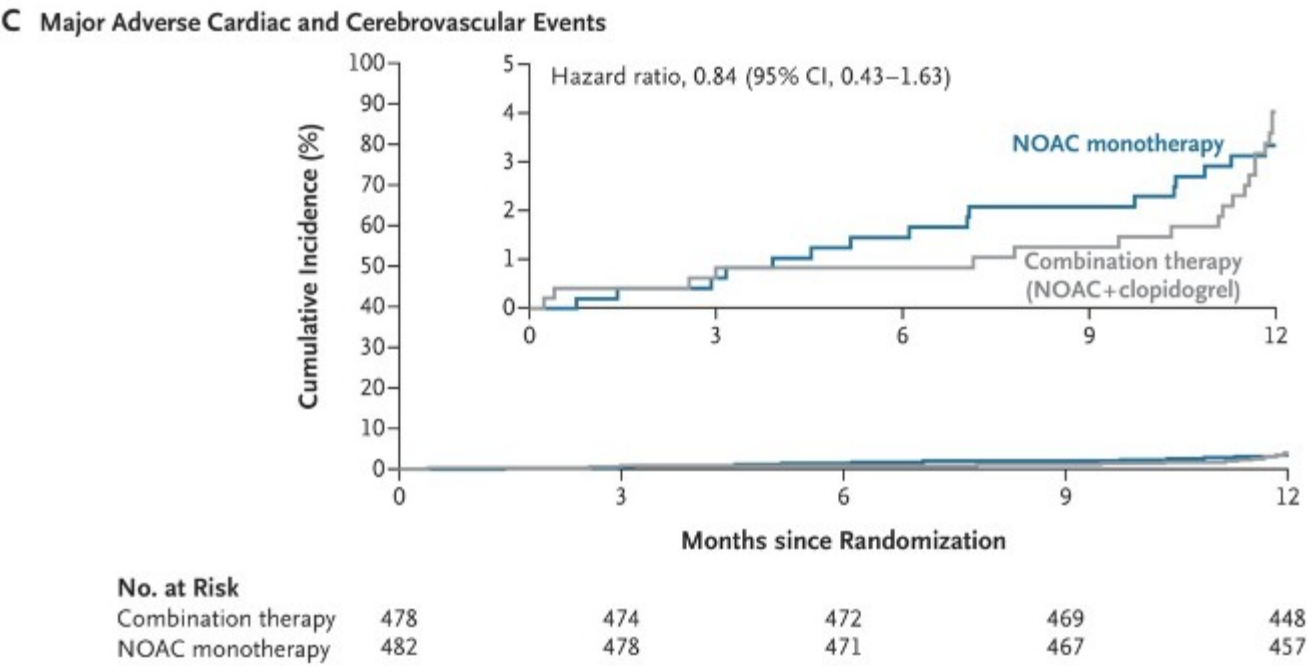
Post-PCI Antithrombotic Therapy in AF: 2021 Consensus

Up to 40% of AF patients have CAD • up to 10% of PCI patients have AF

AF patients undergoing PCI—2021 North American Consensus			
Time from PCI	Default strategy	Patients at high ischemic/thrombotic and low bleeding risk	Patients at low ischemic/thrombotic or high bleeding risk
Peri-PCI	Triple Therapy (OAC + DAPT)	Triple Therapy (OAC + DAPT)	Triple Therapy (OAC + DAPT)
1 month	Double Therapy up to 12 months (OAC + P2Y ₁₂ inhibitor)	Triple Therapy up to 1 month (OAC + DAPT)	Double Therapy up to 6 months (OAC + P2Y ₁₂ inhibitor)
3 months		Double Therapy up to 12 months (OAC + P2Y ₁₂ inhibitor)	
6 months			
12 months			
>12 months	OAC alone	OAC alone	OAC alone
Peri-PCI period: inpatient stay until time of discharge or a few days longer, up to 1 week post-PCI. OAC: prefer a NOAC over VKA if no contraindications. Clopidogrel is the P2Y₁₂ inhibitor of choice; ticagrelor may be considered in patients at high thrombotic and acceptable bleeding risks; avoid prasugrel. Continuation of antiplatelet therapy in adjunct to OAC beyond one-year should be considered only for select patients with high risk for ischemic recurrences and low bleeding risk.			

North American Consensus, 2021 — JACC 2023; 83:109-279.

APT and Anticoagulation (Afib, >1y after PCI)



ADAPT AF-DES Investigators. Therapy for Atrial Fibrillation in Patients with Drug-Eluting Stents. N Engl J Med. 2026 Feb 12;394(7):658-668.

Choosing a P2Y12 Inhibitor in Older Adults

- **Clopidogrel preferred — lower bleeding risk than ticagrelor or prasugrel**
- Elderly ACS II: prasugrel not superior to clopidogrel; numerically higher bleeding
- POPular AGE: clopidogrel similar efficacy to ticagrelor, with fewer bleeding events
- SWEDEHEART (≥80y): ticagrelor showed no reduction in death/MI/stroke vs. clopidogrel + ASA, but 32% higher bleeding risk
- Network meta-analysis (n=14,485): clopidogrel has the most favorable bleeding profile

Exception

STEMI or complex anatomy: ticagrelor is a reasonable choice.

Dual vs. Triple Therapy After PCI: WOEST2 Registry

1,075

patients on OAC undergoing PCI, 2014–2021

60.9%

received dual therapy (DAT) at discharge

16.8%

vs 23.4% clinically relevant bleeding (DAT vs TAT,
p<0.01)

Verdict

Dual antithrombotic therapy (P2Y12 + OAC) is associated with substantially lower clinically relevant bleeding, with no statistically significant difference in MACCE (12.4% vs 9.7%, p=0.17) compared to triple therapy.

PRECISE-DAPT: Who Can Stop DAPT Early?

- Score incorporates hemoglobin, age, white blood cell count, creatinine clearance, and prior bleeding history
- **Score >25 (of 0–100): restrict DAPT to 3–6 months**
- High bleeding risk (HBR) patients derive no ischemic or mortality benefit from long-term DAPT — regardless of PCI complexity or acute presentation
- HBR patients experience excess bleeding events with longer treatment duration

Short-Term DAPT After Stroke/TIA — Only 21 Days

China Trial

- High-risk TIA (ABCD2 $\geq$ 4) or minor stroke (NIHSS $\leq$ 3)
- Clopidogrel + ASA vs. ASA alone, for 21 days
- ↓ recurrent stroke (HR 0.68), no significant ↑ in ICH or severe bleeding

International Trial

- Minor stroke or high-risk TIA, DAPT for 90 days vs. ASA alone
- ↓ recurrent ischemic stroke (HR 0.70) at 90 days
- ↑ major bleeding after the first 30 days

Recommendation: limit DAPT to 21–30 days after minor stroke or high-risk TIA.

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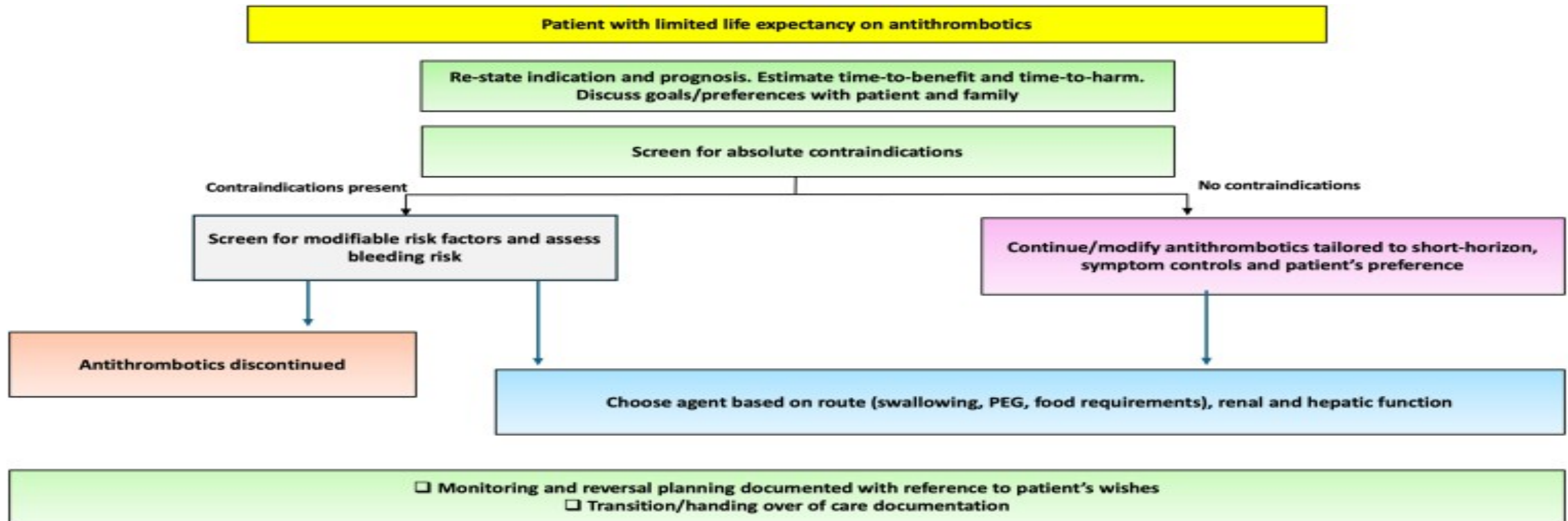
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Antithrombotics in Palliative & End-of-Life Care



Res Pract Thromb Haemost. 2026 Mar 26;10(3):103459.

Transitions of Care & Medication Simplification

- Post-ACS transitions are high-risk — coordinate cardiology, surgery (when relevant), geriatrics, nursing, pharmacy, and hospitalist
- A detailed medication review and reconciliation is essential, ideally with pharmacist involvement
- Simplified, once-daily regimens improve adherence, especially with mobility or cognitive difficulties
- 90-day prescriptions after ACS discharge have been shown to improve post-ACS medication adherence

Putting It Together: Prescribe, Deprescribe, or Don't

Reasonable to Deprescribe or Avoid

- ASA for primary prevention
- DAPT beyond 6–12 months post-PCI in appropriate patients
- APT >1 year post-PCI in patients on a DOAC
- OAC if reversible AF cause with no recurrence
- Low-burden device AF (<6 min)
- Asymptomatic coronary or vascular calcification

Clinical Pearls to Carry Forward

- Clopidogrel preferred in older ACS patients; ticagrelor reasonable for STEMI/complex anatomy
- Minimize triple-therapy duration; transition to dual therapy within 4 weeks post-PCI
- Reassess regularly — escalate or de-escalate as clinical status changes
- Favor simpler regimens tailored to comorbidities and goals of care

A TOOL FOR EVERY VISIT

Anticoagulation Stewardship Checklist



Indication confirmed



Date of primary event documented



Duration of APT / DAPT / OAC reviewed



Dosage appropriate for renal & hepatic function



Anemia and drug interactions assessed



Next cardiology follow-up scheduled



PRECISE-DAPT score calculated



HAS-BLED / ATRIA / HEMORR₂HAGES score calculated

THANK YOU

Questions & Discussion

“Yes, anticoagulation and antiplatelet therapy is messy — I hope this helped clear up some of that mess.”

Abhishek Gaur, MD, FACC, FASE, RPVI