Challenging Anticoagulation Scenarios

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Disclosure

Consultant: Bayer

Research Grant: Bayer; Bristol Myer Squibb; Pfizer

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Agenda

- AF, ACS, and PCI – 10 min
- Anticoagulation after Embolic Stroke – 10 min
- AF and Non-AC meds– 10 min
- AC and Falls – 10 min
- DOACs and special populations (Obesity and Dialysis) – 15 min
  - Apixaban vs. warfarin in VTE
  - Renal AF
- Switching Anticoagulants – 10 min
- Q&A

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- 68-year-old with Atrial Fibrillation on a DOAC was Admitted for ACS s/p PCI
- Also Has Hypertension, Hyperlipidemia, Smokes, and Strong Family History of Coronary Heart Disease
- He Is Now on Aspirin, Plavix and a DOAC

Was Discharged on Hospital Day #3 and Now Presents to Your Clinic Within 1 Week. Should You De-prescribe Aspirin?

A. Yes
B. No

- 1 Year Later He Returns with Persistent Atrial Fibrillation to your clinic with uncontrolled Diabetes Mellitus
- He Is Now on Aspirin, Plavix and a DOAC

What Regimen Would You Recommend at Discharge?

A. DOAC and DAPT
B. DOAC and SAPT
C. DOAC
D. ASA
E. Whatever the cardiologist says

2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

Joglar JA, et al. ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation. *Circulation*. 2024;149(1):e167.

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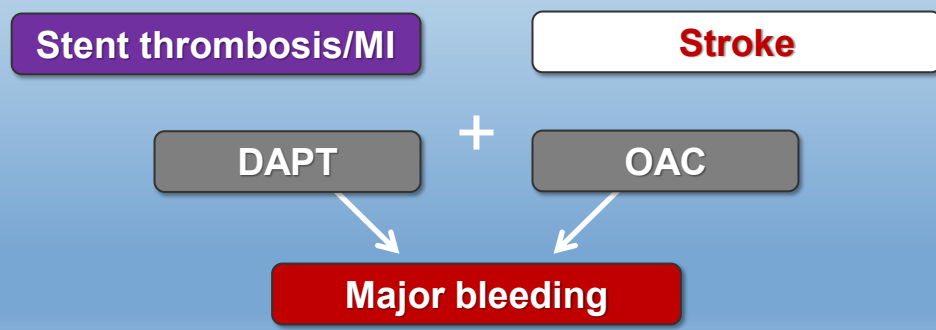
Coronary Stenting in Patients with AF and High Risk of Stroke

The problem: you cannot simultaneously prevent all three!



DAPT, dual antiplatelet therapy; OAC, oral anticoagulant.

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Coronary Artery Disease (CAD)

- **AF patients w CAD undergoing PCI**
  - ***DOACs preferred*** *over VKAs in combination with APT (1; A)*
  - *Early discontinuation of ASA (1-4 weeks) and continuation of dual antithrombotic therapy with OAC and a P2Y12 inhibitor is preferred over triple therapy (1; A)*
- **Chronic Coronary Disease (CCD)**
  - *… AF and CCD (**beyond 1 year** after revascularization or CAD not requiring coronary revascularization) without history of stent thrombosis, **oral anticoagulation monotherapy** is recommended over the combination therapy of OAC and single APT (aspirin or P2Y12 inhibitor) ... (1; B-R)*

CAD, coronary artery disease; CCD, chronic coronary disease; DOAC, direct oral anticoagulant; OAC, oral anticoagulant; PAD, peripheral artery disease.
Joglar JA, et al. ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation. *Circulation.* 2024;149(1):e167.

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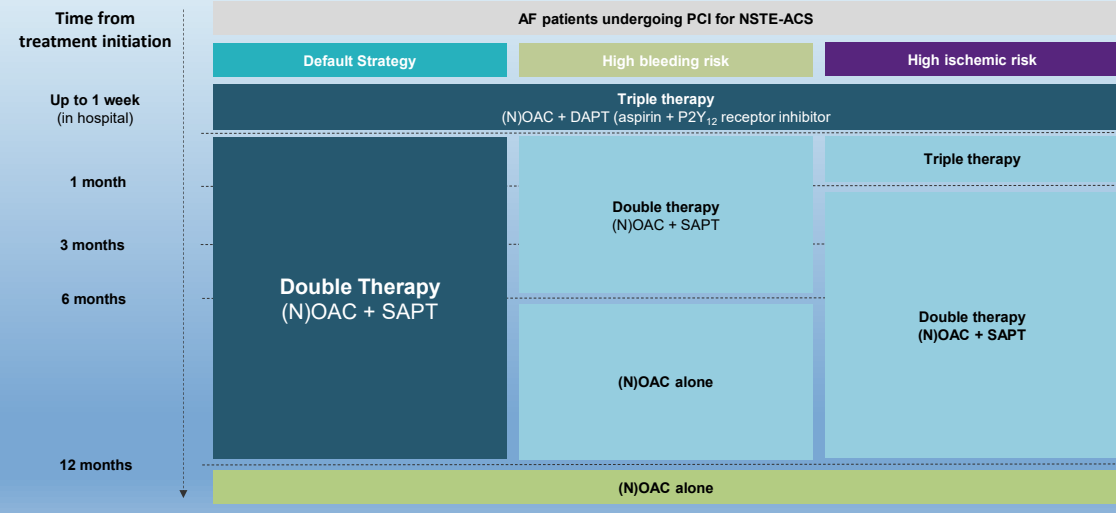
2020 ESC Guidelines Stratify According to Bleeding and Ischemic Risk



AF, atrial fibrillation; NSTE-ACS, non-ST-elevation acute coronary syndrome; NOAC, non-vitamin K inhibitor oral anticoagulant;
SAPT: Single antiplatelet therapy;
1. Collet J-P et al. *Eur Heart J.* 2024;1;45(5):404-405.

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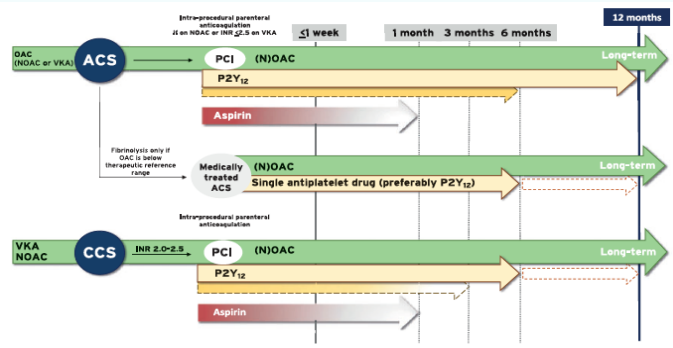
Acute Coronary Syndrome, Percutaneous Coronary Intervention and Chronic Coronary Syndrome in Patients with Atrial Fibrillation



THROMBOTIC RISK FACTORS

- Diabetes mellitus requiring therapy
- Prior ACS/recurrent myocardial infarction
- Multivessel CAD
- Concomitant PAD
- Premature CAD (occurring at age of <45 y) or accelerated CAD (new lesion within 2 years)
- CKD (eGFR <60 mL/min)
- Clinical presentation (ACS)
- Multivessel stenting
- Complex revascularisation (left main stenting, bifurcation lesion stenting, chronic total occlusion intervention, last patent vessel stenting)
- Prior stent thrombosis on antiplatelet treatment
- Procedural factors (stent expansion, residual dissection, stent length, etc.)

BLEEDING RISK FACTORS

- Hypertension
- Abnormal renal or liver function
- Stroke or ICH history
- Bleeding history or bleeding diathesis (e.g., anaemia with haemoglobin <110 g/L)
- Labile INR (if on VKA)
- Elderly (>65 years)
- Drugs (concomitant OAC and antiplatelet therapy, NSAIDs), excessive alcohol consumption

STRATEGIES TO REDUCE BLEEDING ASSOCIATED WITH PCI

- Radial artery access
- PPIs in patients taking DAPT who are at increased risk of bleeding (e.g., the elderly, dyspepsia, gastro-oesophageal reflux disease, Helicobacter pylori infection, chronic alcohol use)
- Non–administration of unfractionated heparin in patients on VKA with INR >2.5
- Pre-treatment with aspirin only, add a $P2Y_{12}$ inhibitor when coronary anatomy is known or if STEMI
- GP IIb/IIIa inhibitors only for bailout or periprocedural complications
- Shorter duration of combined antithrombotic therapy

ASC, acute coronary syndrome; CAD, coronary artery disease; DAPT, dual antiplatelet therapy; ICH, intracranial haemorrhage; PAD, peripheral artery disease; VKA, vitamin K antagonist.
Hindricks G, et al. *European Heart Journal.* 2021;1;42:507.

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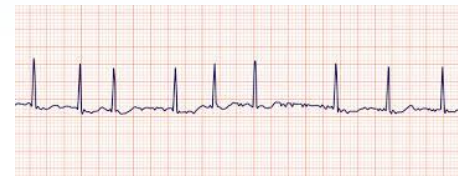
Case

- 80 y/o patient with HTN originally presented with mild new onset L-sided weakness and diagnosed with an embolic stroke
- On examination, pulse is irregularly irregular
- EKG shows new atrial fibrillation
- Imaging revealed a small to moderate sized stroke in an MCA branch
- Patient was not a candidate for tPA or thrombectomy and was discharged on no anticoagulants



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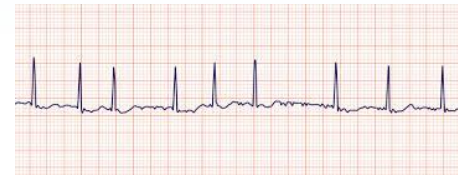
What Is Your Next Step in Management?

A. Aspirin for 4 weeks, then transition to DOAC
B. Aspirin for 1 week, then transition to DOAC
C. Dance the Afib dance



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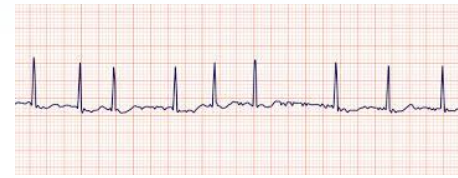

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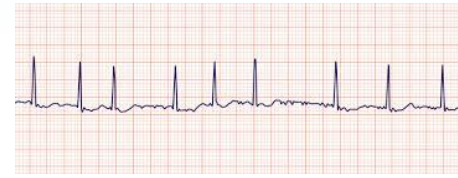

Optimal Timing of Anticoagulation After Acute Ischemic Stroke with Atrial Fibrillation (OPTIMAS)

Werring D et al. Lancet 2024 Nov 2; 404: 1731-1741. doi: 10.1016/S0140-6736(24)02197-4

Collaboration on the Optimal Timing of Anticoagulation After Ischemic Stroke and Atrial Fibrillation: A Systematic Review and Prospective Individual Participant Data Meta-analysis of Randomized Controlled Trials (CATALYST)

Debhi HM, et al. Lancet. 2025 Jul 5; 406: 43-51. doi: 10.1016/S0140-6736(25)00439-8

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OPTIMAS: Timing of Anticoagulation Embolic Stroke Due to Afib

Background: In patients with embolic stroke due to atrial fibrillation, some guidelines suggest delayed initiation (10–14 days after stroke onset) to lower risk for hemorrhagic transformation.

However, brain hemorrhage is lower with DOACs than with warfarin

Question: Should AC for embolic stroke due to afib be initiated earlier or later?

Methods: RCT, 3621 older patients (mean age 79 years) with stroke and afib. 41% had an NIH stroke scale score of 0–4, 34% a score of 5–10, and 25% a score >10.

Interventions: Early initiation of AC (<4 days). Mean 3.1 days. (SD 1.8 days)

or

Delayed initiation of AC (7-14 days). Mean 8.3 days. (SD 3.1 days)

Werring D et al. Lancet 2024 Nov 2; 404: 1731-1741. https://doi.org/10.1016/S0140-6736(24)02197-4

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OPTIMAS: Timing of Anticoagulation Embolic Stroke Due to Afib

Outcomes at 90 days	Early initiation	Late initiation	RD	P-Value	NNT
Primary Outcome*	3.3%	3.3%	0	0.96	-
Symptomatic Intracranial Hemorrhage	0.6%	0.7%	0.1%	0.78	-
All major bleeding	1.0%	1.4%	0.4%	0.24	-
Mortality	8.8%	8.9%	0.1%	0.83	-

*Primary outcome: recurrent ischemic stroke, symptomatic brain hemorrhage, unclassified stroke, and systemic embolism within 90 days

Werring D et al. Lancet 2024 Nov 2; 404: 1731-1741. https://doi.org/10.1016/S0140-6736(24)02197-4

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July 2025 Update: CATALYST Study: Meta-analysis of 4 RCTs (Including OPTIMAS) and ~5400 Patients Timing of Anticoagulation Embolic Stroke Due to Afib

Outcomes at 90 days	Early initiation	Late initiation	RD	P-Value	NNT
Primary Outcome*	2.1%	3.0%	0.9%	0.04	108
Ischemic stroke	1.7%	2.6%	0.9%	0.03	111
Symptomatic ICH	0.4%	0.4%	0	0.96	-
30-day Mortality	3.7%	4.4%	0.7%	0.19	(147)

*Primary outcome: recurrent ischemic stroke, symptomatic brain hemorrhage, unclassified stroke

Debhi H-M, et al. Lancet 2025 Jul 2; 406: 43. https://doi.org/10.1016/0140-6736(25)00439-8

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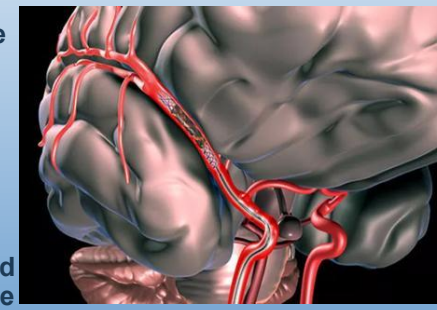
Timing of Anticoagulation Embolic Stroke Due to Afib

Conclusions: For patients with ischemic stroke and Afib, starting DOAC treatment within 4 days appears safe and may actually improve outcomes.

The timing decision for each patient should take into account patient comorbidities and brain imaging findings.



Impact on Clinical Care:

Delayed initiation of DOAC after embolic stroke due to Afib is unnecessary.

Hospitalists and Primary Care Physicians should use the hospital stay as an opportunity to initiate anticoagulation for most patients prior to hospital discharge.

Werring D et al. Lancet 2024 Nov 2; 404: 1731-1741. https://doi.org/10.1016/S0140-6736(24)02197-4

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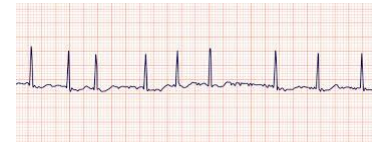
Our Patient with HTN and an Embolic Stroke Has Persistent AF with RVR

Is Your Next Step in Management?

A. Metoprolol 100mg / day
B. Diltiazem 60mg / day
C. Diltiazem 120mg / day
D. Dance the Afib dance



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Serious Bleeding on Diltiazem and Apixaban or Rivaroxaban

- Retrospective cohort of Medicare prescribed apixaban or rivaroxaban for AF initiating diltiazem or metoprolol
- Primary outcome: bleeding related hospitalization or death with bleeding
- Secondary: stroke, death without bleeding

Covariate	Diltiazem	Metoprolol
Patients	53275	150880
Age mean	78.8	78.8
CHADSVasc	4.2	4.2
HASBLED	3.0	3.0
Stroke	7.1%	7.1%
Bleed	16.1%	16.1%
Rivaroxaban	34.1%	34.1%
Standard AC dose	78.8%	78.8%
Rate control in 30 days	70.9%	70.9%
Dilt dose ≤ 120 mg	48.9%	------
Aspirin indication	41.4%	41.4%
Number of meds	12.3	12.3

Ray WA, et al. *JAMA.* 2024;331(18):1565–1575.

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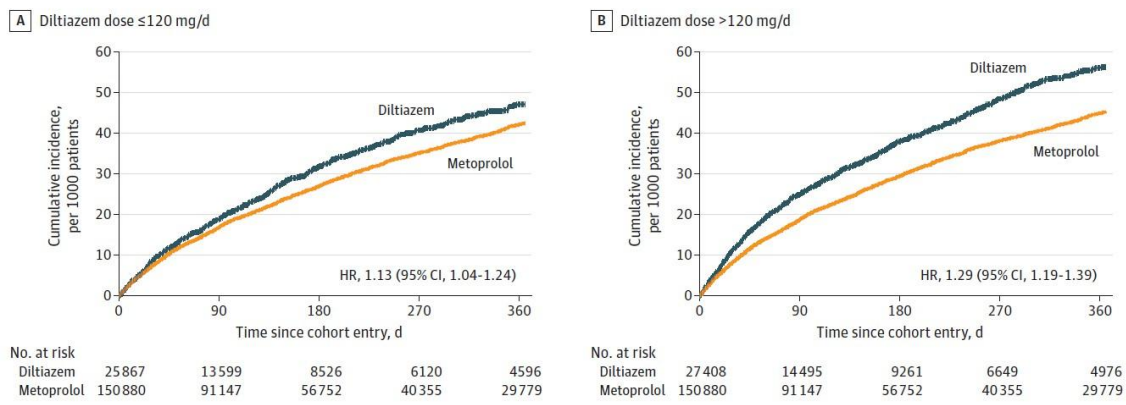
Bleeding Risk Increases with Diltiazem Dose

Figure 2. Adjusted Cumulative Incidence of the Primary Composite Outcome According to Ventricular Rate–Control Treatment and Initial Diltiazem Dose



bleeding-related hospitalization or death with recent evidence of bleeding.

Ray WA, et al. *JAMA*. 2024;331(18):1565–1575.

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Conclusions

- In Medicare patients with atrial fibrillation receiving apixaban or rivaroxaban, diltiazem was associated with greater risk of serious bleeding than metoprolol, particularly for diltiazem doses exceeding 120 mg/d.
- **Limitations:** Not randomized, unmeasured confounding, event coding errors

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Case

You see Mr. M in follow up a few months later and he mentions he has had a few falls. About a 2 months ago while rushing to get to the bus stop, he tripped stepping off a curb. He caught himself (did not hit his head) but had some impressive bruising and soreness for awhile. He also fell at home when getting up off the couch. Oh, and he almost fell in the parking lot on the way here.

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This Falling Is Making You Nervous. **You Should:**

A. Stop the anticoagulation, if he is falling every month, he is bound to hit his head one of these times.

B. Reduce to dose of apixaban to 2. 5mg BID. Just a sprinkle may be enough.

C. Continue anticoagulation. So far, we have gotten away with it.

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Are DOACs Dangerous in Older Adults with AF Who Fall?

- Prospective cohort of older AF pts. (age ≥ 65) starting DOAC
- If ≥ 1 fall classified as "faller"
- Outcomes: Major or CRNM bleed, reported falls
- At 2 years, 148 pts. with ≥ 1 fall (28.2%) and 49 major bleeds and 308 CRNM bleeds

Characteristic	Faller (N=148)	No Fall (N=376)	P Value
Age	83.2	79.8	<0.01
Women	90 (60.8%)	193 (51.3%)	0.31
eGFR < 30	7 (4.7%)	23 (6.1%)	0.35
CHADSVasc ≥ 5	78 (52.7%)	152 (40.4%)	0.01
HAS-BLED ≥ 3	127 (85.8%)	287 (76.3%)	0.02
Prior Fall	45 (30.4%)	54 (14.4%)	<0.01
Prior Bleed	60 (45.4%)	146 (38.8%)	0.77
Apixaban	44 (29.7%)	78 (20.7%)	0.04
Dabigatran	43 (29.1%)	112 (29.8%)	0.92
Edoxaban	11 (7.4%)	44 (11.7%)	0.20
Rivaroxaban	50 (33.8%)	142 (37.8%)	0.42
Standard dose	37 (25%)	141 (37.5%)	<0.01
Reduced dose	111 (75%)	235 (62.5%)	<0.01

Catalani F, et al. Thromb Res. 2024 Jun;238:78-84.PMID: 38678866.

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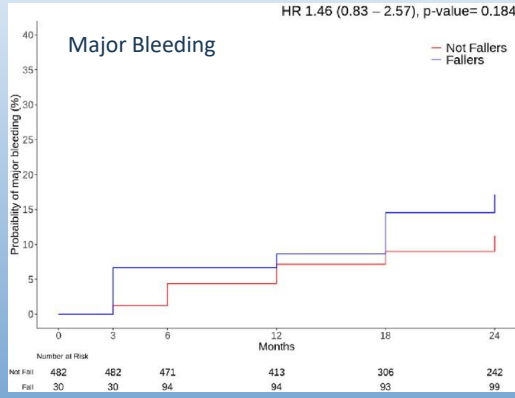
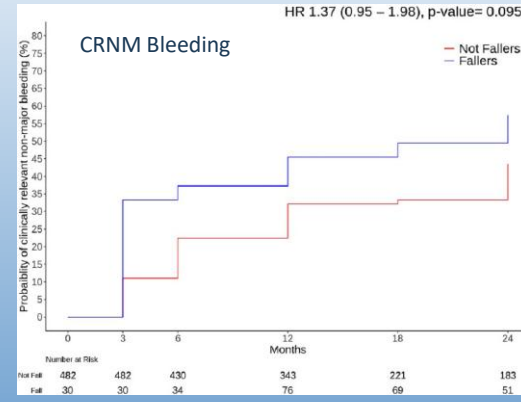
Falling Was Not Associated with Increased Risk of Major Bleeding or Death





After adjustment for potential confounders, there was no difference in major bleeding (HR 1.04[0.58-1.85]), ICH (HR 1.63 [0.69-3.80]), CRNM bleeding (HR 1.21[0.83-1.76]) or all cause death (HR 1.51[0.85-2.69]) between fallers and non-fallers.

Catalani F, et al. Thromb Res. 2024 Jun;238:78-84.PMID: 38678866.

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Conclusion

- In an AC-naïve population 65 years or older with AF starting a DOAC, falls do not increase the risk of bleeding.
- These data are consistent with previous studies of warfarin which demonstrated patients with AF benefit from therapy despite falls

Gage BF, et al. Am J Med. 2005 Jun;118(6):612-7. and Man-Son-Hing M, et al. Arch Intern Med. 1999 Apr 12;159(7):677-85.

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A Man with Acute VTE Who Has Obesity and Receiving Multiple Different Medications

How could we manage this patient?

- 65-year-old man
- **Obese at 130 kg**
- Hypercholesterolemia
- Mild renal impairment (CrCl 45 mL/min)
- Gastric ulcer 2 years ago
- Poorly controlled hypertension
- Type II diabetes
- Receiving several different medications for his chronic conditions (polypharmacy)

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Would This Patient's Obesity Impact Your Decision to Prescribe a DOAC?

A. Yes
B. No
C. More information needed
D. Unsure

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2016

Journal of Thrombosis and Haemostasis, **14**: 1308–1313 DOI: 10.1111/jth.13323

RECOMMENDATIONS AND GUIDELINES

Use of the direct oral anticoagulants in obese patients: guidance from the SSC of the ISTH

- Recommend appropriate standard dosing of direct oral anticoagulants (DOACs) in patients with BMI ≤ 40 kg/m^2 and weight ≤ 120 kg.
- Suggest not using DOACs in patients with BMI >40 kg/m^2 or weight >120 kg.
- If DOACs are used in BMI >40 kg/m^2 or weight >120 kg, suggest checking drug-specific peak and trough level.

➢ *DOACs= apixaban, dabigatran, edoxaban, rivaroxaban*

➢ *Based on limited clinical data and available PK data at the time*

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2021 ISTH Updated Summary Guidance Statements

- The use of any DOAC is appropriate for patients with BMI up to 40 kg/m^2 or weight 120 kg. For patients with BMI >40 kg/m^2 or weight >120 kg, ISTH recommends that the individual DOACs should be used as follows:
- For treatment of VTE, ISTH suggests that standard doses of rivaroxaban or apixaban are among appropriate anticoagulant options regardless of high BMI and weight. Fewer supportive data exist for apixaban than rivaroxaban. VKA, weight based LMWH (per manufacturers' recommendations), and fondaparinux are also options.
- For primary prevention of VTE, ISTH suggests that standard doses of rivaroxaban or apixaban are among appropriate anticoagulant options regardless of high BMI and weight. Drug approval is restricted to elective hip and knee arthroplasty and (in some countries) extended VTE prevention following acute medical illness.
- Suggests not to use dabigatran, edoxaban, or betrixaban for VTE treatment and prevention in patients with BMI >40 kg/m^2 or weight >120 kg, given unconvincing data for dabigatran, and lack of clinical or PK/PD data for edoxaban and betrixaban.
- Suggests not to regularly follow peak or trough drug-specific DOAC levels because there are insufficient data to influence management decisions.

Martin et al *J Thromb Haemst* 2021

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Martin KA, et al. *JThrombHaemost*. 2021;1-9.

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ISTH Guidance Statements (Cont'd)

- Suggests not to use DOAC for treatment or prevention of VTE in the acute setting after bariatric surgery (because of concerns of decreased absorption), and instead, to initiate such patients on parenteral anticoagulation in the early postsurgical phase. Suggests that switching to VKA or DOAC may be considered after at least 4 weeks of parenteral treatment, and if so, suggest obtaining a DOAC trough level to check for drug absorption and bioavailability.

DOAC = direct oral anticoagulant; ISTH = International Society on Thrombosis and Haemostasis; VTE = venous thromboembolism; VKA = vitamin K antagonist.

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Martin KA, et al. *JThrombHaemost*. 2021;1-9.

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2023 Guideline for Diagnosis and Management of Atrial Fibrillation
American College of Cardiology, American Heart Association, American College of Clinical Pharmacy and Heart Rhythm Society

- **Obesity**
  - –DON'T: preclude patients with **BMI > 40kg/m²** from DOACs
  - –DO: consider warfarin instead of DOAC in patients that have had bariatric surgery

COR	LOE	RECOMMENDATIONS
2a	B-NR	1. In patients with AF and class III obesity (BMI ≥40 kg/m^2), DOACs are reasonable to choose over warfarin for stroke risk reduction.[1-5]
2b	C-LD	2. In patients with AF who have undergone bariatric surgery, warfarin may be reasonable to choose over DOACs for stroke risk reduction in view of concerns about DOAC drug absorption.[6,7]

Joglar JA. J Am Coll Cardiol. 2024 Jan 2;83(1):109-279. PMID: 38043043.

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49-year-old Man with ESRD on HD with Recurrent VTE While on Warfarin for 2 Years, TTR = 49% Changed to Apixaban in Hospital.

Is It Okay for Him to be on Apixaban?

A. Yes
B. No

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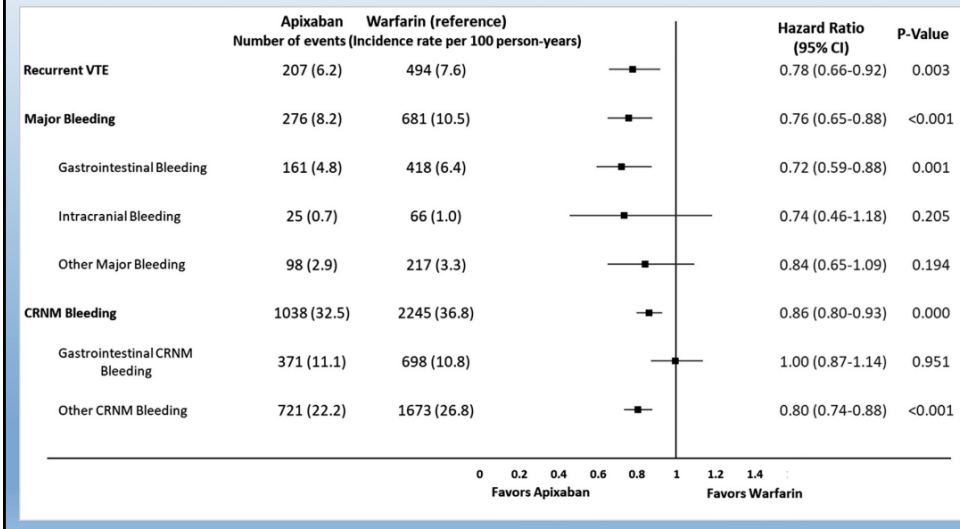
Effectiveness and Safety of Apixaban versus Warfarin in Venous Thromboembolism Patients with Chronic Kidney Disease



- ~30,000 patients
- No INRs
- Outcomes based on codes
- Outcomes consistent across CKD stage
- Suggests apixaban may be used in ESRD for VTE

Cohen AT. Thromb Haemost. 2022 Jun;122(6):926-938. PMID: 34963185.

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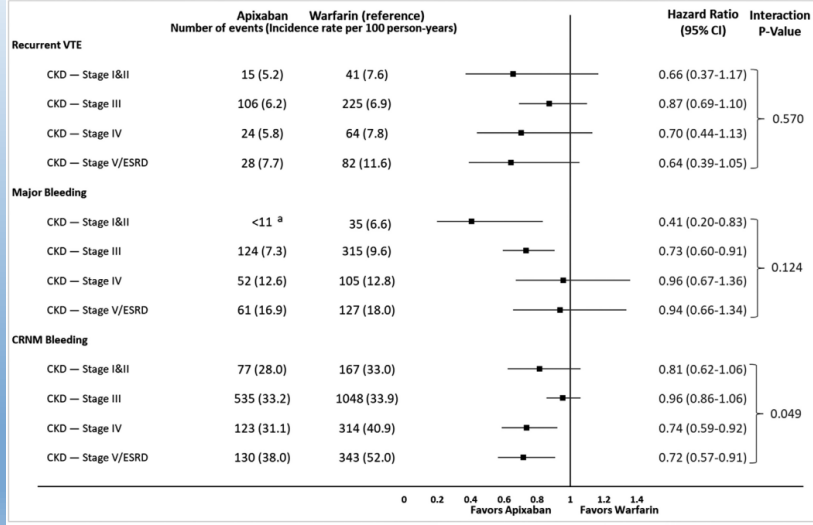
Effectiveness and Safety of Apixaban versus Warfarin in Venous Thromboembolism Patients with Chronic Kidney Disease



- Rates of recurrent VTE, major and CRNM bleeding lower with apixaban
- Approximately 3600 Stage V or ESRD patients
- Apixaban associated with significantly lower risk of recurrent VTE, MB, and CRNMB

Cohen AT. Thromb Haemost. 2022 Jun;122(6):926-938. PMID: 34963185.

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Thrombosis Research

journal homepage: www.elsevier.com/locate/thromres

Full Length Article

Healthcare utilization differences between an apixaban-based and warfarin-based strategy for acute venous thromboembolism in patients with end-stage kidney disease

Shirin Ardeshirrouhanifard [a,1], Michael I. Ellenbogen [b,c,*,1], Jodi B. Segal [b,d], Michael B. Streiff [e], Steven B. Deitelzweig [f], Daniel J. Brotman [b]

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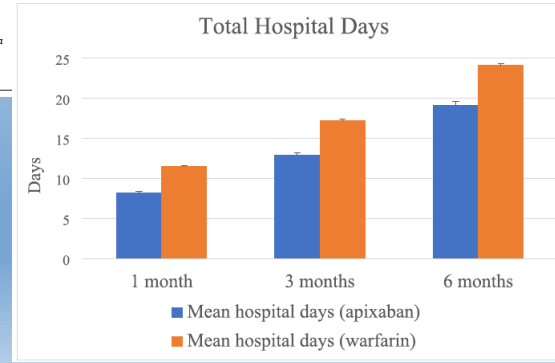
[e] Departments of Medicine and Pathology, Johns Hopkins School of Medicine, Baltimore, MD, United States of America
[f] Department of Medicine, Ochsner Health System, New Orleans, LA, United States of America



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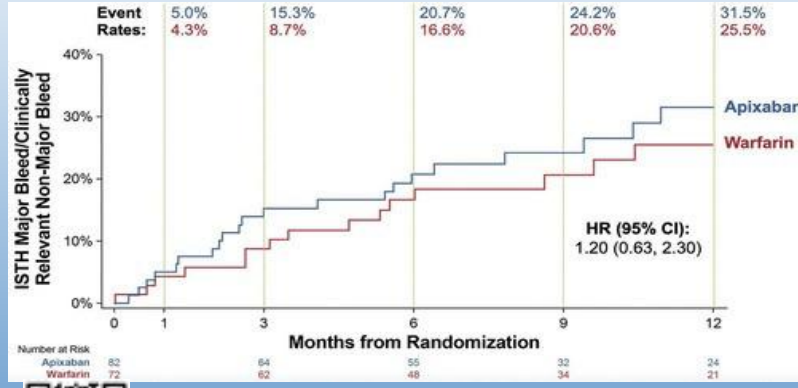
49-year-old Man with ESRD on HD with Recurrent VTE While on Warfarin for 2 Years, TTR = 49%

Is It Okay for Him to be on Apixaban?

A. Yes
B. No

RENAL AF



~150 patients warfarin vs apix 5mg BID (unless 2/3)
TTR 44%
Underpowered
~10% MB/ both groups
~3% stroke in both groups

Pokorney SD et al. Circulation. 2022;146:1735–1745.
PMID: 36335914

Given the high risk of bleeding in the hemodialysis population and the lack of randomized trials comparing anticoagulation with no anticoagulation, there remains uncertainty as to the role of chronic anticoagulation for such patients.

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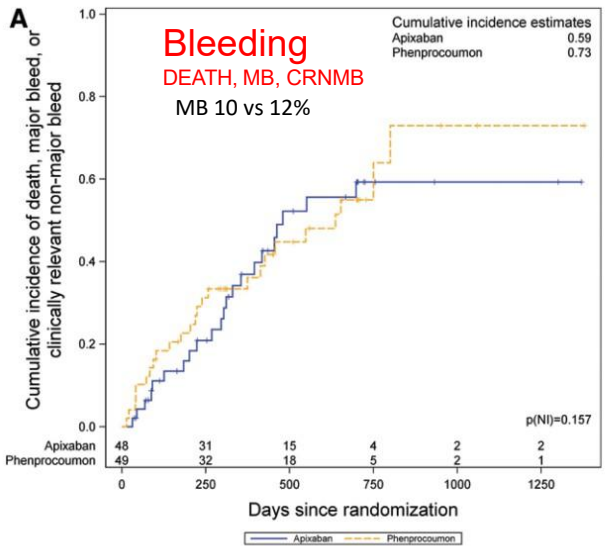
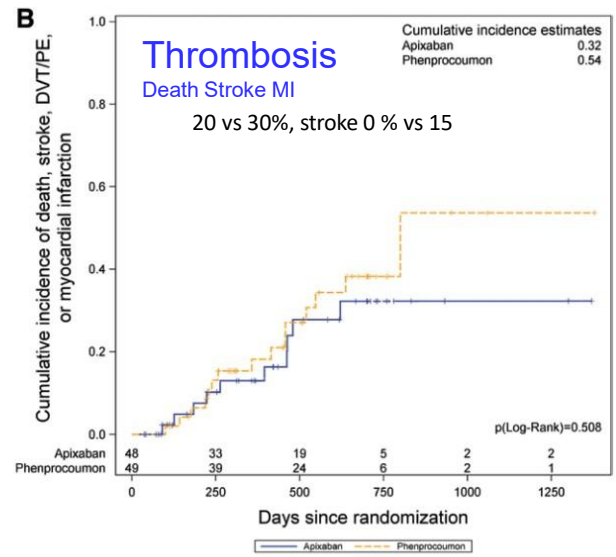
AXADIA-AFNET 8-

PK studies showed apixaban 2.5 mg BID -similar plasma levels normal kidney function on receiving 5 mg BID.





Reinecke H. Circulation. 2023 Jan 24;147(4):296-309. PMID: 36335915

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49-year-old Man with ESRD on HD with Recurrent VTE While on Warfarin for 2 Years, TTR = 49%

Is It Okay for Him to be on Apixaban?

A. Yes
B. No

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Bottom Line

- Dialysis patients are at high risk for bleeding and mortality
- Apixaban may be equivalent to warfarin for stroke prevention in atrial fibrillation in small randomized trials
  - –However, some argue we should only anticoagulate very high-risk patient
- Apixaban may be OK in treatment of DVT/PE
  - –With high risk of bleeding, shared decision making regarding extended treatment

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Challenging Anticoagulation Scenarios

- AF, ACS, and PCI – 10 min
- Anticoagulation after Embolic Stroke – 10 min
- AF and Non-AC meds– 10 min
- AC and Falls – 10 min
- DOACs and special populations (Obesity and Dialysis) – 15 min
  - Apixaban vs. warfarin in VTE
  - Renal AF
- **Switching Anticoagulants – 10 min**
- Q&A

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A 76-year-old man (Mr. M) with hypertension has been on warfarin for 5 years for AFIB. He asks if he should switch to one of the other agents he hears about on TV. You look at his TTR and find it is about 60%.

MEDS: Diltiazem, warfarin, Vit D
LABS: Creatinine 1.0, LFTS normal, Hgb 14, PLTs 250 K

Should You Switch Him to a DOAC?

A. Yes
B. No

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FRAIL-AF

- Open RCT of VKA versus DOAC in "frail" AF (≥ 75, GFI ≥ 3), well matched
- Primary endpoint: Major or CRNM bleeding
- Secondary endpoint: Major bleed, CRNM bleed, stroke or death

Characteristic	DOAC (N=662)	VKA (N=661)
Mean age	83.0	82.8
Female	274 (41.4)	239 (36.2)
Permanent AF	340 (52.7)	335 (50.7)
Duration AF, y	12.0	13.0
CHADSVasc	4 (3-5)	4 (3-5)
Hx/o major bleed	105 (15.9)	88 (13.3)
Hx/o stroke	139 (21.1)	117 (17.7)
Est GFR ml/min	62.5	62.7
Mean Groningen FI	4 (3-6)	4 (3-6)
Use ≥ 4 med type	589 (89)	581 (88)
Memory impair	237 (36)	261 (40)
Unable to walk	112 (16.9)	112 (16.9)

Joosten LPT, et al. Circulation. 2024 Jan 23;149(4):279-289. PMID: 37634130.

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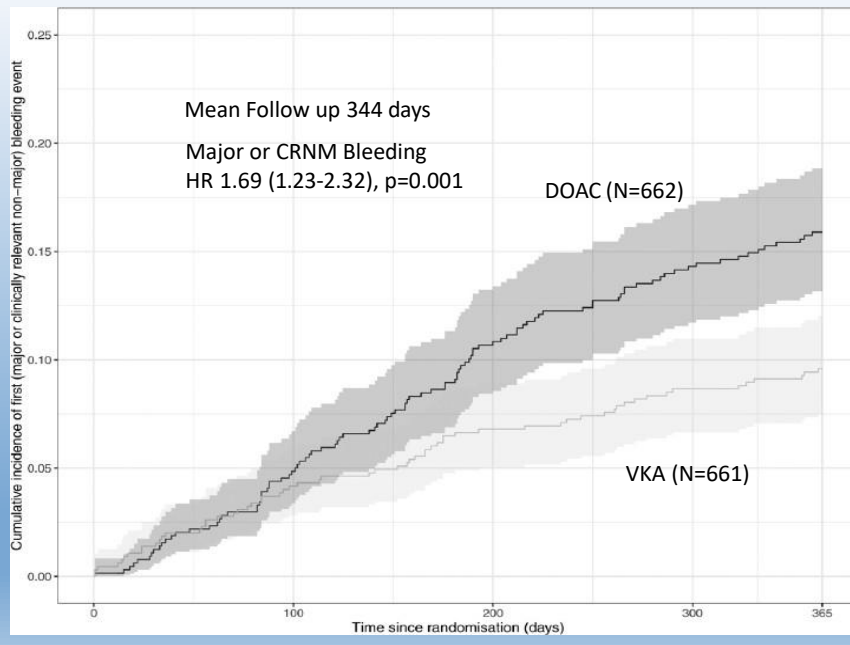

CRNMB
DOAC vs warfarin
3.9 vs 2.6
Events/100 pt yrs

MAJOR
DOAC vs warfarin
9 vs 1 event

SITES
DOAC vs warfarin
8 vs 3 GI
20 vs 11 GU
23 vs 10 skin

Anticoagulation FORUM Natural Conference

Joosten LPT, et al. Circulation. 2024 Jan 23;149(4):279-289. PMID: 37634130.

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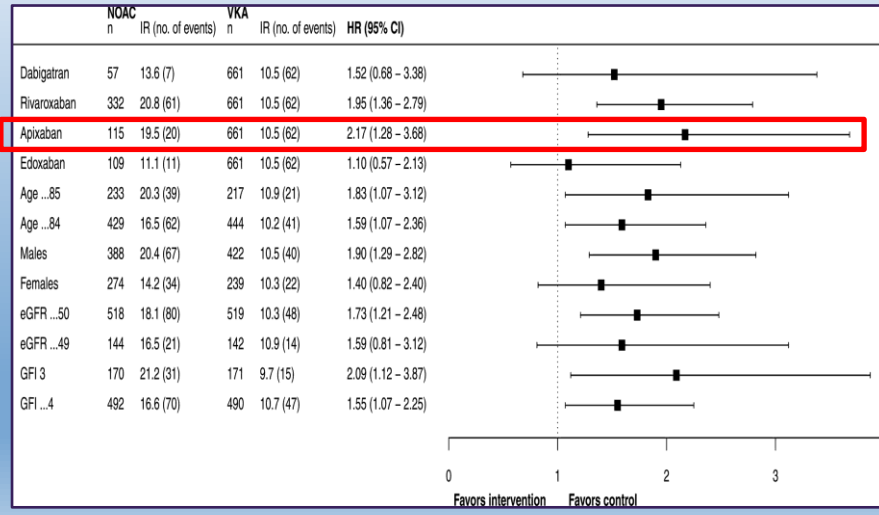
FRAIL-AF



Joosten LPT, et al. Circulation. 2024 Jan 23;149(4):279-289. PMID: 37634130.

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Conclusion

- Switching frail older AF patients already on VKA to a DOAC was associated with higher risk of CRNMB (not major) bleeding without any reduction in thromboembolism

- Additional observations
  - Managed in expert Dutch AC Clinics
  - VKA Time in therapeutic range at time of study (Range 65-74%)
  - Bleeding events: Skin, **GI,** GU

56

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MEDS: Diltiazem, warfarin, Vit D
LABS: Creatinine 1.0, LFTS normal, Hgb 14, PLTs 250 K

Should You Switch Him to a DOAC?

A. Yes
B. No

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75-year-old Female with Atrial Fibrillation on Rivaroxaban with CHADS-VASc of 7 and Hasbled 4 Asks You If Should Change Anticoagulation Regimen.

How Do You Manage Anticoagulation?

A. Return to warfarin
B. Change to Apixaban
C. Continue Rivaroxaban
D. Wait for the next ESC and ACC guideline update

CONTINUING EDUCATION COMPANY

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ATHENS Data Publication Is Now Available in the Journal of Clinical Medicine

Journal of Clinical Medicine

MDPI

Article

Clinical Impact of Switching or Continuation of Apixaban or Rivaroxaban among Patients with Non-Valvular Atrial Fibrillation

Steven Deitelzweig [1,*], Amiee Kang [2], Jenny Jiang [2], Chuan Gao [2], Xuemei Luo [3], Nipun Atreja [2], Stella Han [2], Dong Cheng [2], Saarusri R Loganathan [4] and Gregory Y. H. Lip [5,6]

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5 Liverpool Centre for Cardiovascular Science, University of Liverpool, Liverpool John Moores University and Liverpool Heart & Chest Hospital, Liverpool L14 3PE, UK; lipgy@liverpool.ac.uk
6 Danish Center for Health Services Research, Department of Clinical Medicine, Aalborg University, 9220 Aalborg, Denmark
* Correspondence: sdeitelzweig@ochsner.org

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Background, Objective and Study Design

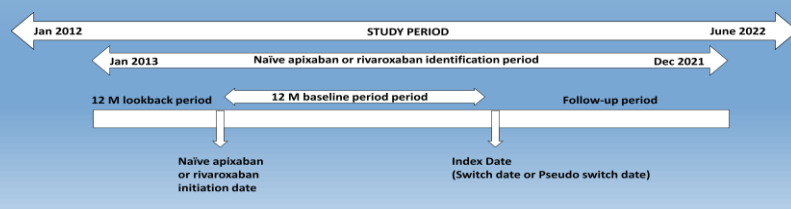
Background

- There is been lack of evidence in real-world clinical practice on the clinical outcomes of patients with NVAF who switch DOACs
- Comparing patients who switched DOACs to patients who continued the same DOAC is challenging
  - The two cohorts have very distinct baseline characteristics
  - Outcome after switching (for switchers) and outcome after DOAC initiation (for continuers) are not directly comparable

Objectives

- To compare the risk of major bleeding or stroke/SE events among patients who
  A. switched from apixaban to rivaroxaban versus patients who continued apixaban
  B. switched from rivaroxaban to apixaban versus patients who continued rivaroxaban

Study Design



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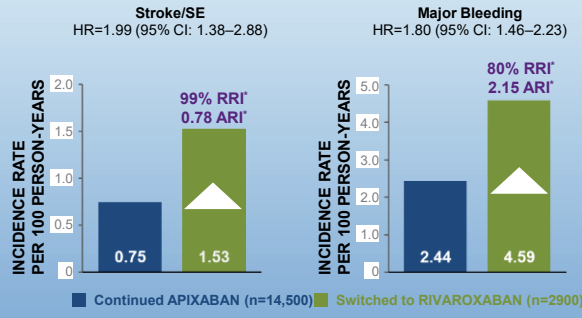
ATHENS: REAL-WORLD DATA ANALYSIS | PATIENTS WHO STARTED ON APIXABAN

OUTCOMES

Stroke/Systemic Embolism and Major Bleeding in Patients Who Continued on APIXABAN vs Those Who Switched to RIVAROXABAN



In this real-world analysis, switching to RIVAROXABAN was associated with 1.99x higher risk of stroke/SE and 1.80x higher risk of major bleeding vs continuing on APIXABAN

*Statistical note: RRI was calculated as (HR-1)x100. ARI represents the difference between the event rates and is expressed as per 100 person-years.

References: 1. Deitelzweig S, et al. *J Clin Med*. 2024;13:1073. 2. Eliquis [package insert]. Bristol-Myers Squibb Company, Princeton, NJ, and Pfizer Inc, New York, NY. 3. Silverman SL. *Am J Med*. 2009;122:114-120. 4. Noseworthy PA, et al. *Chest*. 2016;150:1302-1312. 5. Lip GYH, et al. [published corrections appear in *Stroke*. 2024;51:e71 and *Stroke*. 2018;49:2933-2944].

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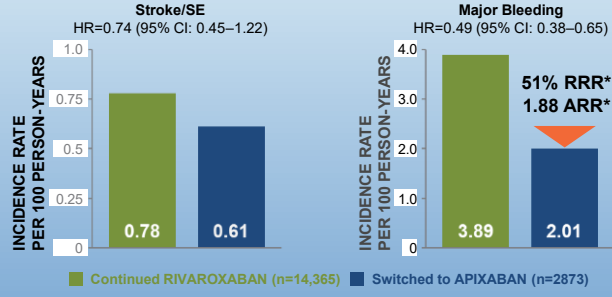
ATHENS: REAL-WORLD DATA ANALYSIS | PATIENTS WHO STARTED ON RIVAROXABAN

OUTCOMES

Stroke/Systemic Embolism and Major Bleeding in Patients Who Continued on RIVAROXABAN vs Those Who Switched to APIXABAN[1]



In this real-world analysis, switching to APIXABAN was associated with a 0.49x lower risk of major bleeding vs continuing on RIVAROXABAN

*Statistical note: RRR was calculated as (1-HR)x100. ARR represents the difference between the event rates and is expressed as per 100 person-years.

References: 1. Deitelzweig S, et al. *J Clin Med*. 2024;13:1073. 2. Eliquis [package insert]. Bristol-Myers Squibb Company, Princeton, NJ, and Pfizer Inc, New York, NY. 3. Silverman SL. *Am J Med*. 2009;122:114-120. 4. Noseworthy PA, et al. *Chest*. 2016;150:1302-1312. 5. Lip GYH, et al. [published corrections appear in *Stroke*. 2020;51:e71 and *Stroke*. 2018;49:2933-2944].

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- Switching Anticoagulants – 10 min
- **Q&A**

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Take Home Points

- All patients should de-escalate anticoagulants with AF, ACS, s/p PCI to DOAC monotherapy by 1 year. Stop unnecessary anti-platelets
  - Very few reasons for an oral anticoagulant and aspirin
- Be mindful of metoprolol and diltiazem bleeding risk with anticoagulants
- Therapeutic AC remains indicated despite fall risk
- Use DOAC for obese patients with VTE or atrial fibrillation
- Likely OK to use apixaban in dialysis and atrial fibrillation
  - However, high risk of bleeding with any anticoagulant
- Switching from VKA to DOAC is often fraught with adverse effects
- Switching DOAC to DOAC is best with starting and continuing Apixaban
- Do not use off label DOAC dosing, that means you shouldn't, it is bad, it can be fatal, just say no

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