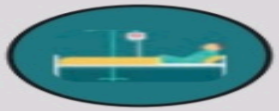
# *Səyirici aritmiyada antikoaqulyant seçimi*

***Sara Əzizli***

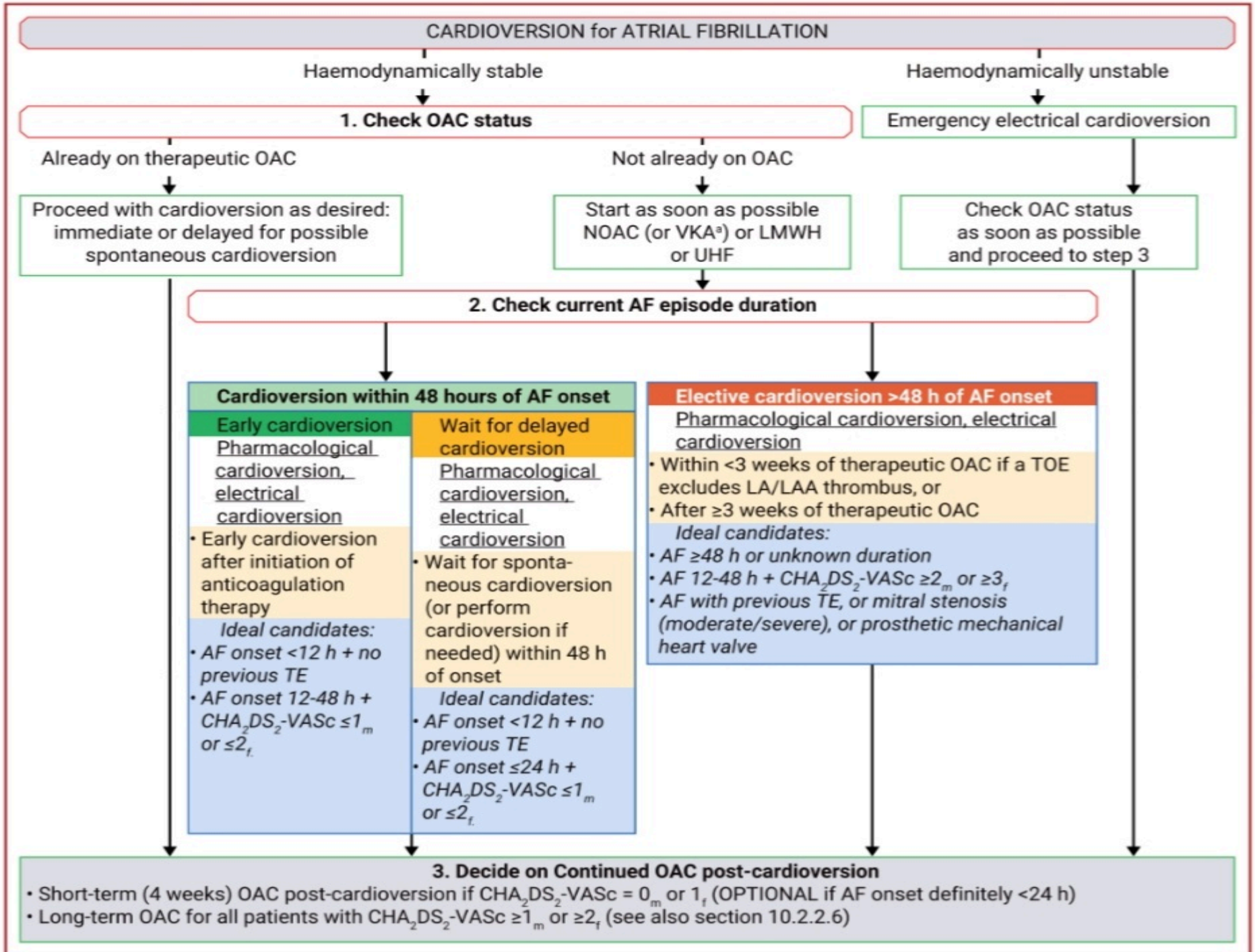
***ESC-2020***

# AF-related OUTCOMES

| AF-Related Outcome | Frequency in AF | Mechanism(s) |
|---|---|---|
| Death  | 1.5 – 3.5 fold increase | Excess mortality related to:<br>• HF, comorbidities<br>• Stroke |
| Stroke  | 20-30% of all ischaemic strokes, 10% of cryptogenic strokes | • Cardioembolic, or<br>• Related to comorbid vascular atheroma |
| LV dysfunction / Heart failure  | In 20-30% of AF patients | • Excessive ventricular rate<br>• Irregular ventricular contractions<br>• A primary underlying cause of AF |
| Cognitive decline / Vascular dementia  | HR 1.4 / 1.6 (irrespective of stroke history) | • Brain white matter lesions, inflammation,<br>• Hypoperfusion,<br>• Micro-embolism |
| Depression  | Depression in 16-20% (even suicidal ideation) | • Severe symptoms and decreased QoL<br>• Drug side effects |
| Impaired quality of life  | >60% of patients | • Related to AF burden, comorbidities, psychological functioning and medication<br>• Distressed personality type |
| Hospitalizations  | 10-40% annual hospitalization rate | • AF management, related to HF, MI or AF related symptoms<br>• Treatment-associated complications |

| | $CHA_2DS_2$-VASc risk factor | Points |
|---|---|---|
| **C** | Congestive heart failure | +1 |
| **H** | Hypertension | +1 |
| **$A_2$** | Age 75 years or older | +2 |
| **D** | Diabetes mellitus | +1 |
| **$S_2$** | Previous stroke, transient ischaemic attack or thromboembolism | +2 |
| **V** | Vascular disease | +1 |
| **A** | Age 65–74 years | +1 |
| **Sc** | Sex category (female) | +1 |

| Condition | Points |
| --- | --- |
| H – Hypertension | 1 |
| A – Ab(N) liver/renal | 1 point each |
| S – Stroke | 1 |
| B – Bleeding | 1 |
| L – Labile INRs | 1 |
| E – Elderly (>65) | 1 |
| D – Drugs or ETOH | 1 point each |


CARDIOVERSION for ATRIAL FIBRILLATION
Haemodynamically stable
Haemodynamically unstable
1. Check OAC status
Emergency electrical cardioversion
Already on therapeutic OAC
Not already on OAC
Proceed with cardioversion as desired: immediate or delayed for possible spontaneous cardioversion
Start as soon as possible NOAC (or VKA[a]) or LMWH or UHF
Check OAC status as soon as possible and proceed to step 3
2. Check current AF episode duration
Cardioversion within 48 hours of AF onset
Early cardioversion
Pharmacological cardioversion, electrical cardioversion
• Early cardioversion after initiation of anticoagulation therapy
Ideal candidates:
• AF onset <12 h + no previous TE
• AF onset 12-48 h + CHA2DS2-VASc ≤1m or ≤2f
Wait for delayed cardioversion
Pharmacological cardioversion, electrical cardioversion
• Wait for spontaneous cardioversion (or perform cardioversion if needed) within 48 h of onset
Ideal candidates:
• AF onset <12 h + no previous TE
• AF onset ≤24 h + CHA2DS2-VASc ≤1m or ≤2f
Elective cardioversion >48 h of AF onset
Pharmacological cardioversion, electrical cardioversion
• Within <3 weeks of therapeutic OAC if a TOE excludes LA/LAA thrombus, or
• After ≥3 weeks of therapeutic OAC
Ideal candidates:
• AF ≥48 h or unknown duration
• AF 12-48 h + CHA2DS2-VASc ≥2m or ≥3f
• AF with previous TE, or mitral stenosis (moderate/severe), or prosthetic mechanical heart valve
3. Decide on Continued OAC post-cardioversion
• Short-term (4 weeks) OAC post-cardioversion if CHA2DS2-VASc = 0m or 1f (OPTIONAL if AF onset definitely <24 h)
• Long-term OAC for all patients with CHA2DS2-VASc ≥1m or ≥2f (see also section 10.2.2.6)
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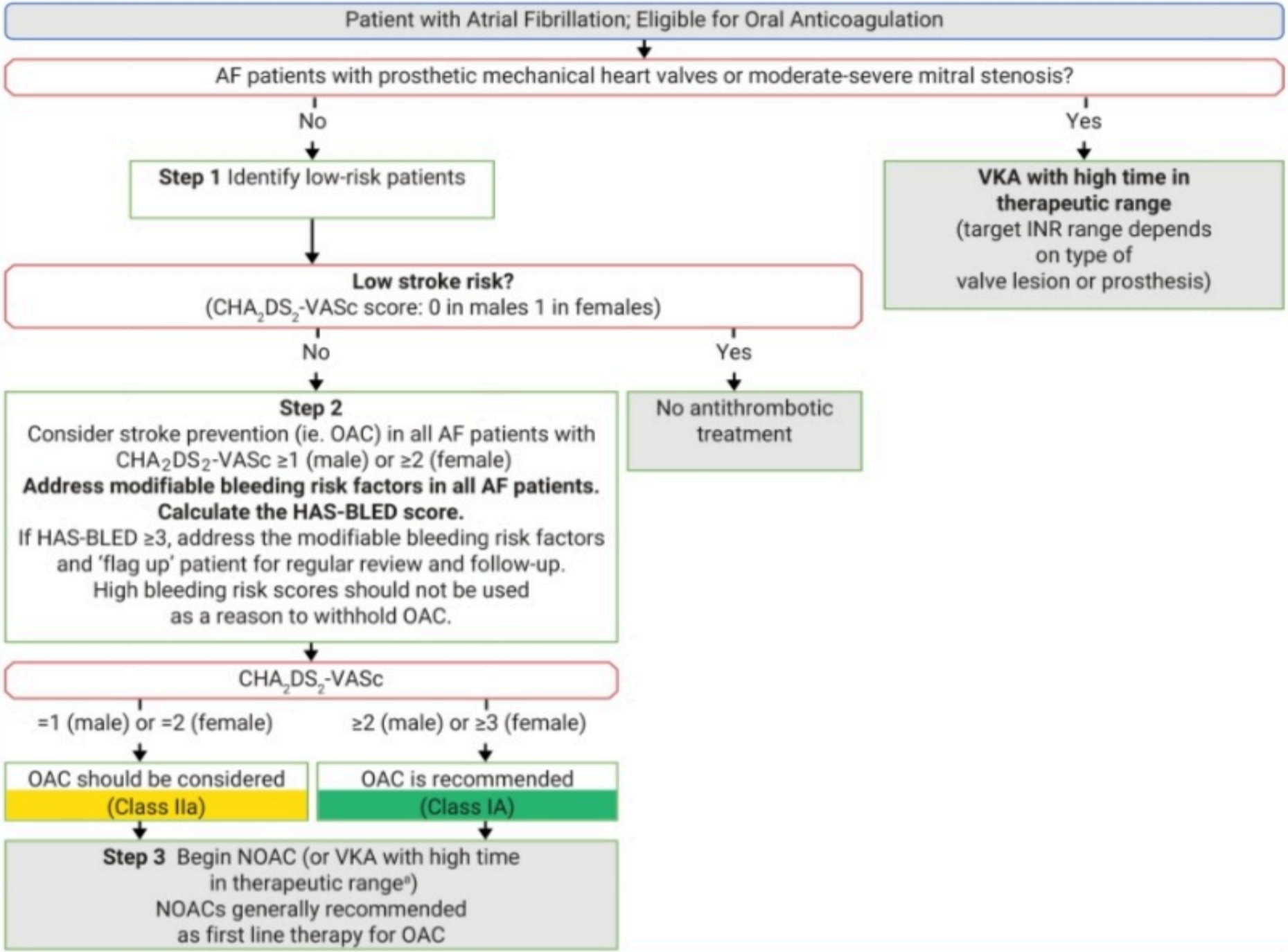

Patient with Atrial Fibrillation; Eligible for Oral Anticoagulation
AF patients with prosthetic mechanical heart valves or moderate-severe mitral stenosis?
No
Yes
Step 1 Identify low-risk patients
VKA with high time in therapeutic range (target INR range depends on type of valve lesion or prosthesis)
Low stroke risk? (CHA2DS2-VASc score: 0 in males 1 in females)
No
Yes
No antithrombotic treatment
Step 2
Consider stroke prevention (ie. OAC) in all AF patients with CHA2DS2-VASc ≥1 (male) or ≥2 (female)
Address modifiable bleeding risk factors in all AF patients.
Calculate the HAS-BLED score.
If HAS-BLED ≥3, address the modifiable bleeding risk factors and 'flag up' patient for regular review and follow-up.
High bleeding risk scores should not be used as a reason to withhold OAC.
CHA2DS2-VASc
=1 (male) or =2 (female)
≥2 (male) or ≥3 (female)
OAC should be considered (Class IIa)
OAC is recommended (Class IA)
Step 3 Begin NOAC (or VKA with high time in therapeutic range[a])
NOACs generally recommended as first line therapy for OAC

## Table 11 Dose selection criteria for NOACs

| | Dabigatran | Rivaroxaban | Apixaban | Edoxaban |
|---|---|---|---|---|
| **Standard dose** | 150 mg b.i.d. | 20 mg o.d. | 5 mg b.i.d. | 60 mg o.d. |
| **Lower dose** | 110 mg b.i.d. | | | |
| **Reduced dose** | | 15 mg o.d. | 2.5 mg b.i.d. | 30 mg o.d. |
| **Dose-reduction criteria** | Dabigatran 110 mg b.i.d. in patients with:<br>• Age ≥80 years<br>• Concomitant use of verapamil, or<br>• Increased bleeding risk | CrCl 15 - 49 mL/min | At least 2 of 3 criteria:<br>• Age ≥80 years,<br>• Body weight ≤60 kg, or<br>• Serum creatinine ≥1.5 mg/dL (133 µmol/L) | If any of the following:<br>• CrCl 15 - 50 mL/min,<br>• Body weight ≤60 kg,<br>• Concomitant use of dronedarone, ciclosporine, erythromycin, or ketoconazole |

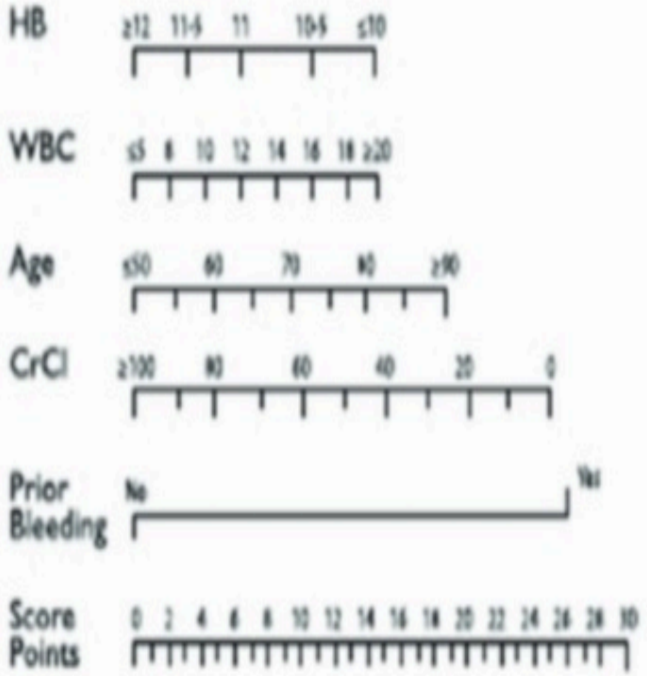
b.i.d. = bis in die (twice a day); CrCl = creatinine clearance; o.d. = *omni die* (once daily).

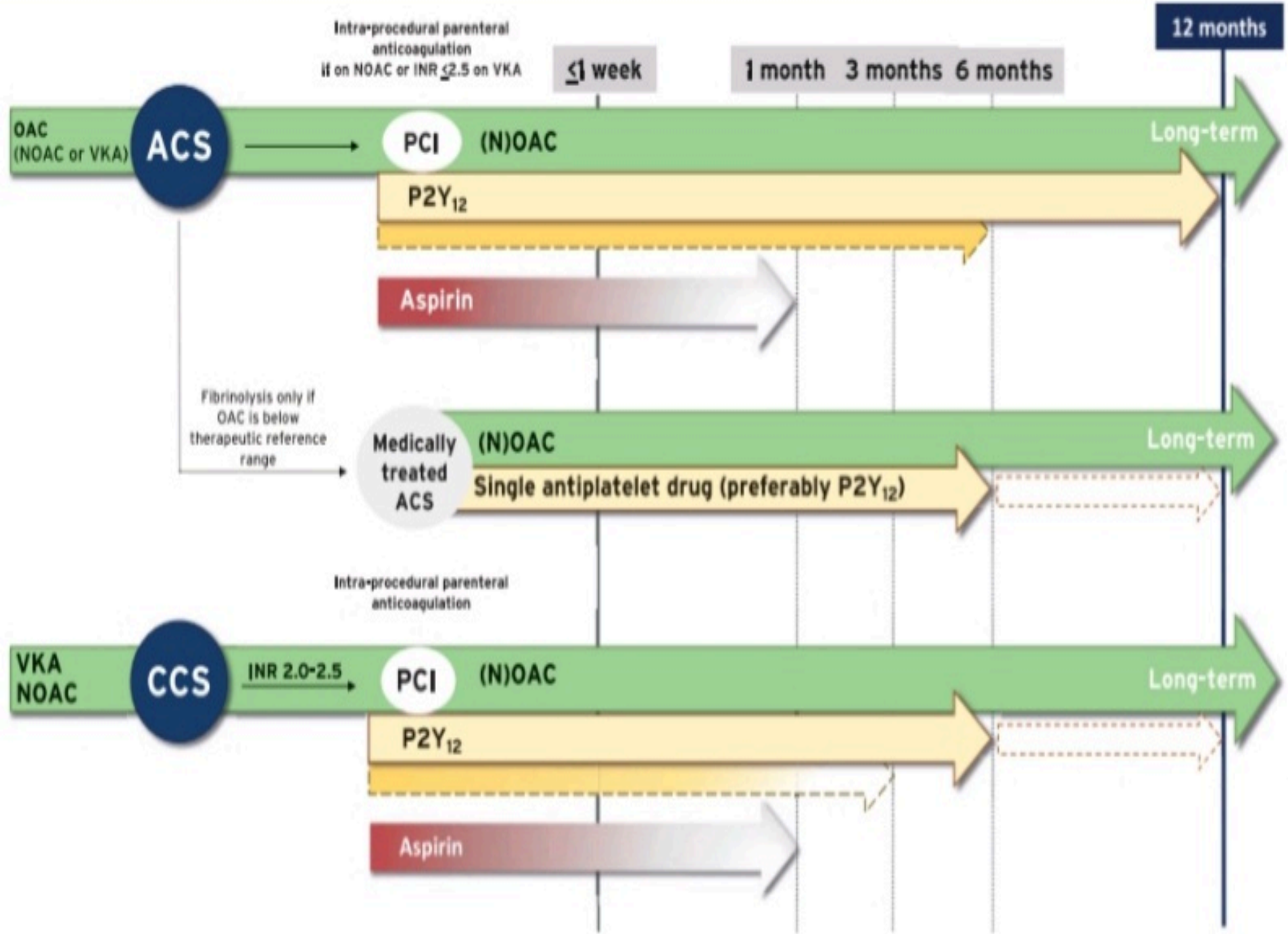
*Başlanğıcda insult riski aşağı olduqda 4-6 ay sonra təkrar dəyərləndir-*class IIa*

*VKA qəbulunda INR 2-3,VKA+APT olarsa 2-2.5,TTR≥70%-*class I*

# *KAX+AF*

- YOAK VKA-ya seçim edilməli-*class I*
- Qanaxma riski varsa YOAK dozaları azaldılmalı-*class IIa*
- Non komplike PCİ xəstələrində qanaxma riski trombozdan üstünsə 3lü terapiya 1 həftə-*class I*
- Stent trombozu riski yüksəksə 3lü terapiya 1 ay-*class I*

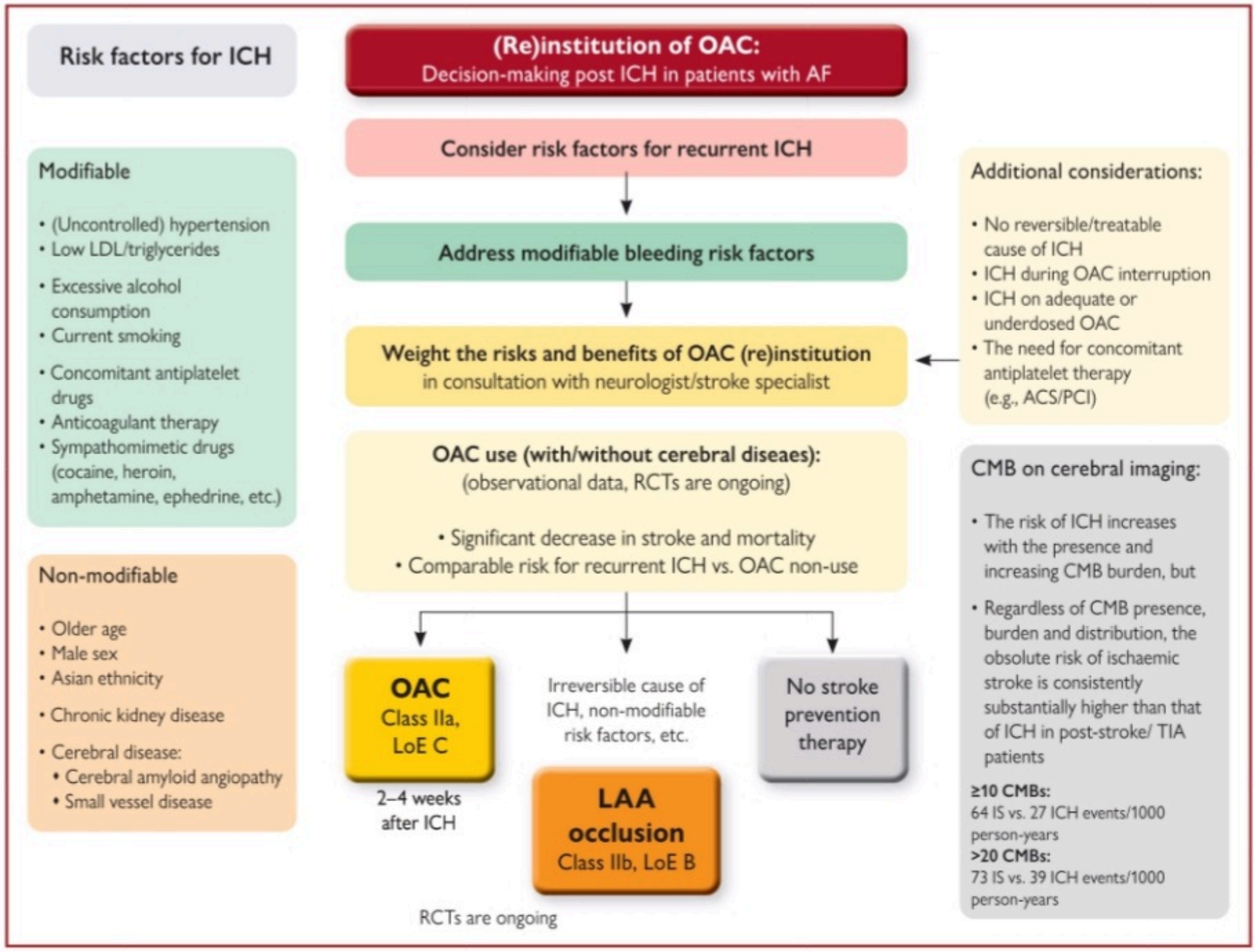
| | PRECISE-DAPT score[18] | DAPT score[15] | |
|---|---|---|---|
| Time of use | At the time of coronary stenting | After 12 months of uneventful DAPT | |
| DAPT duration strategies assessed | Short DAPT (3–6 months)<br>vs.<br>Standard/long DAPT (12–24 months) | Standard DAPT (12 months)<br>vs.<br>Long DAPT (30 months) | |
| Score calculation[a] |  | Age<br>≥75<br>65 to <75<br><65<br>Cigarette smoking<br>Diabetes mellitus<br>MI at presentation<br>Prior PCI or prior MI<br>Paclitaxel-eluting stent<br>Stent diameter <3 mm<br>CHF or LVEF <30%<br>Vein graft stent | <br>−2 pt<br>−1 pt<br>0 pt<br>+1 pt<br>+1 pt<br>+1 pt<br>+1 pt<br>+1 pt<br>+1 pt<br>+2 pt<br>+2 pt |
| Score range | 0 to 100 points | −2 to 10 points | |
| Decision making cut-off suggested | Score ≥25 → Short DAPT<br>Score <25 → Standard/long DAPT | Score ≥2 → Long DAPT<br>Score <2 → Standard DAPT | |
| Calculator | www.precisedaptscore.com | www.daptstudy.org | |


Intra-procedural parenteral anticoagulation if on NOAC or INR ≤2.5 on VKA
≤1 week
1 month
3 months
6 months
12 months
OAC (NOAC or VKA)
ACS
PCI
(N)OAC
Long-term
P2Y12
Aspirin
Fibrinolysis only if OAC is below therapeutic reference range
Medically treated ACS
(N)OAC
Long-term
Single antiplatelet drug (preferably P2Y12)
Intra-procedural parenteral anticoagulation
VKA NOAC
CCS
INR 2.0-2.5
PCI
(N)OAC
Long-term
P2Y12
Aspirin

# *İnsult+AF*

- İşemik insult və ya TİA xəstələrində YOAK VKA-ya seçim edilməli-*class I*

- Kəskin işemik insultda ilk 48 s.da VKA,LMWH,UFH əks göstərişdir-*class III*


Risk factors for ICH
(Re)institution of OAC:
Decision-making post ICH in patients with AF
Consider risk factors for recurrent ICH
Address modifiable bleeding risk factors
Weight the risks and benefits of OAC (re)institution
in consultation with neurologist/stroke specialist
Modifiable
• (Uncontrolled) hypertension
• Low LDL/triglycerides
• Excessive alcohol consumption
• Current smoking
• Concomitant antiplatelet drugs
• Anticoagulant therapy
• Sympathomimetic drugs (cocaine, heroin, amphetamine, ephedrine, etc.)
Non-modifiable
• Older age
• Male sex
• Asian ethnicity
• Chronic kidney disease
• Cerebral disease:
• Cerebral amyloid angiopathy
• Small vessel disease
Additional considerations:
• No reversible/treatable cause of ICH
• ICH during OAC interruption
• ICH on adequate or underdosed OAC
• The need for concomitant antiplatelet therapy (e.g., ACS/PCI)
OAC use (with/without cerebral diseaes):
(observational data, RCTs are ongoing)
• Significant decrease in stroke and mortality
• Comparable risk for recurrent ICH vs. OAC non-use
CMB on cerebral imaging:
• The risk of ICH increases with the presence and increasing CMB burden, but
• Regardless of CMB presence, burden and distribution, the obsolute risk of ischaemic stroke is consistently substantially higher than that of ICH in post-stroke/ TIA patients
≥10 CMBs:
64 IS vs. 27 ICH events/1000 person-years
>20 CMBs:
73 IS vs. 39 ICH events/1000 person-years
OAC
Class IIa, LoE C
2–4 weeks after ICH
Irreversible cause of ICH, non-modifiable risk factors, etc.
No stroke prevention therapy
LAA occlusion
Class IIb, LoE B
RCTs are ongoing
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# *XBÇ+AF*

- XBÇ(4-5 stadiya ya dializ)-da varfarin və apiksaban,böyrək klirensləri azdır-*class IIb AHA/ACC 2019*

- Son dönəm BÇ-da dabigatran,riveroksaban,endoksaban-*class III AHA/ACC 2019*
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Pharmacotherapy. 2017 Apr;37(4):412-419. doi: 10.1002/phar.1905. Epub 2017 Mar 10.

# Comparison of the Safety and Effectiveness of Apixaban versus Warfarin in Patients with Severe Renal Impairment.

Stanton BE[1], Barasch NS[1], Tellor KB[2].

Author information

## Abstract

**STUDY OBJECTIVE:** The U.S. Food and Drug Administration approval of the use of apixaban in patients with a creatinine clearance (CrCl) of < 15 ml/minute or in those receiving dialysis is based only on pharmacokinetic data as clinical trials of apixaban excluded patients with a CrCl of < 25 ml/minute or a serum creatinine concentration (SCr) of > 2.5 mg/dl. Thus, the objective of this study was to evaluate the safety and effectiveness of apixaban versus warfarin in patients with severe renal impairment.

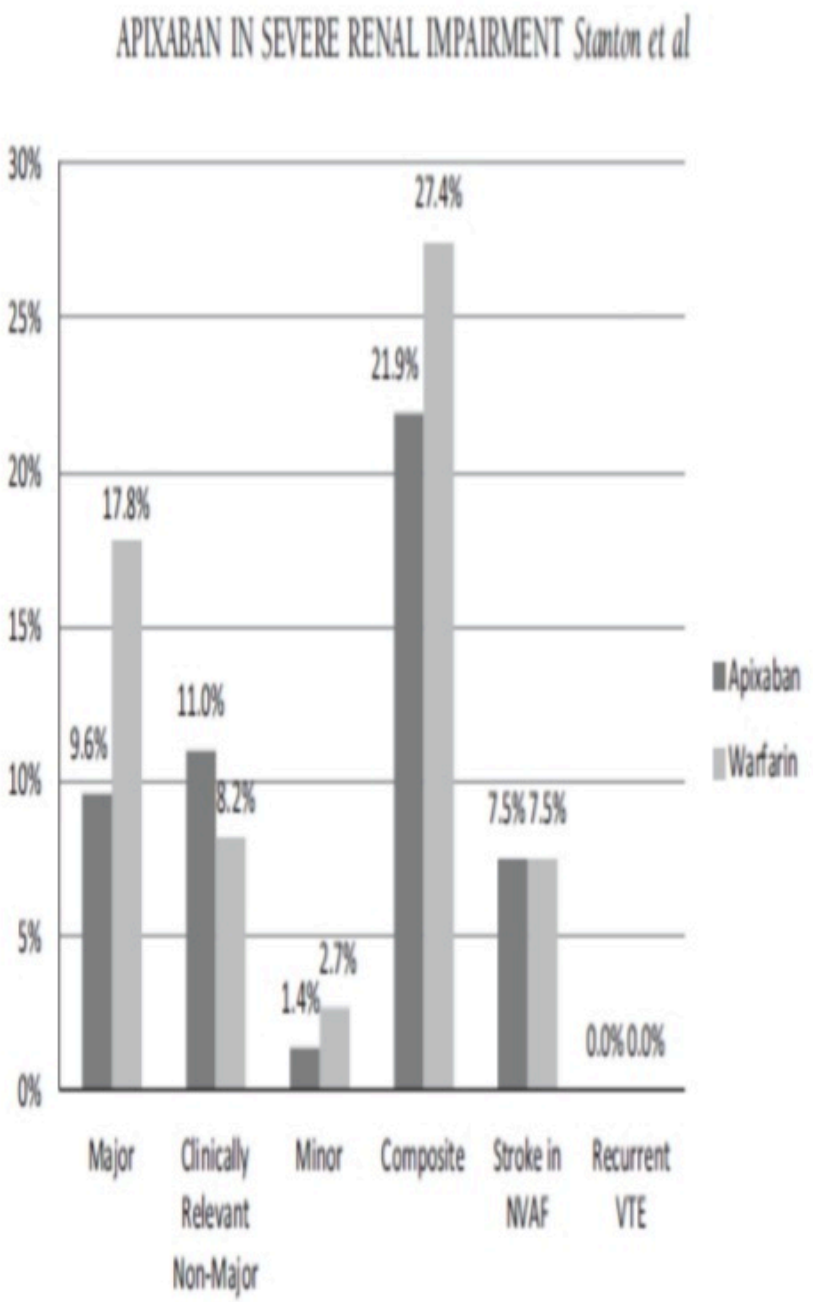
**DESIGN:** Retrospective, matched-cohort study.

**SETTING:** Community hospital.

**PATIENTS:** A total of 146 adults who received at least one dose of apixaban (73 patients) or warfarin (73 patients) while hospitalized between January 30, 2014, and December 31, 2015, and had a CrCl of < 25 ml/minute or SCr of > 2.5 mg/dl, or who received peritoneal dialysis or hemodialysis, were included. Patients who were taking warfarin and had a therapeutic international normalized ratio on admission were matched consecutively in a 1:1 fashion in chronologic order to patients taking apixaban based on renal function and indication for anticoagulation.

**MEASUREMENTS AND MAIN RESULTS:** The primary outcome was major bleeding. Secondary outcomes included the composite of bleeding (major bleeding, clinically relevant nonmajor bleeding, and minor bleeding) in addition to documented ischemic stroke or recurrent venous thromboembolism. A nonsignificant difference in the occurrence of major bleeding and composite bleeding was observed between patients who received apixaban compared with those who received warfarin (9.6% vs 17.8%, p=0.149, and 21.9% vs 27.4%, p=0.442, respectively). The occurrence of stroke was similar between the groups (7.5% in each group), and no recurrent venous thromboembolism events were noted in either group during the study period.

**CONCLUSION:** Apixaban appears to be a reasonable alternative to warfarin in patients with severe renal impairment.



Circulation. 2015 Mar 17;131(11):972-9. doi: 10.1161/CIRCULATIONAHA.114.014113. Epub 2015 Jan 16.

# Dabigatran and rivaroxaban use in atrial fibrillation patients on hemodialysis.

Chan KE[1], Edelman ER[2], Wenger JB[2], Thadhani RI[2], Maddux FW[2].

Author information

## Abstract

**BACKGROUND:** Dabigatran and rivaroxaban are new oral anticoagulants that are eliminated through the kidneys. Their use in dialysis patients is discouraged because these drugs can bioaccumulate to precipitate inadvertent bleeding. We wanted to determine whether prescription of dabigatran or rivaroxaban was occurring in the dialysis population and whether these practices were safe.

**METHODS AND RESULTS:** Prevalence plots were used to describe the point prevalence (monthly) of dabigatran and rivaroxaban use among 29977 hemodialysis patients with atrial fibrillation. Poisson regression compared the rate of bleeding, stroke, and arterial embolism in patients who started dabigatran, rivaroxaban, or warfarin. The first record of dabigatran prescription among hemodialysis patients occurred 45 days after the drug became available in the United States. Since then, dabigatran and rivaroxaban use in the atrial fibrillation-end-stage renal disease population has steadily risen where 5.9% of anticoagulated dialysis patients are started on dabigatrian or rivaroxaban. In covariate adjusted Poisson regression, dabigatran (rate ratio, 1.48; 95% confidence interval, 1.21-1.81; P=0.0001) and rivaroxaban (rate ratio, 1.38; 95% confidence interval, 1.03-1.83; P=0.04) associated with a higher risk of hospitalization or death from bleeding when compared with warfarin. The risk of hemorrhagic death was even larger with dabigatran (rate ratio, 1.78; 95% confidence interval, 1.18-2.68; P=0.006) and rivaroxaban (rate ratio, 1.71; 95% confidence interval, 0.94-3.12; P=0.07) relative to warfarin. There were too few events in the study to detect meaningful differences in stroke and arterial embolism between the drug groups.

**CONCLUSIONS:** More dialysis patients are being started on dabigatran and rivaroxaban, even when their use is contraindicated and there are no studies to support that the benefits outweigh the risks of these drugs in end-stage renal disease.

# *Postoperasion AF*

- Non-kardiak cərrahi sonrası OAK-*class Iia*
- Kardiak cərrahi sonrası-*class IIb*

## Preoperatively

- Optimize haemodynamics
- Correct electrolyte imbalance (including $Mg^{2+}$)
- Identify patients at increased risk for postoperative AF

**Pharmacological postoperative AF prophylaxis:**

- Continue/initiate beta-blocker and/or consider amiodarone
- If contraindicated, i.v. $Mg^{2+}$
- Other AADs in selected patients

If drug prophylaxis is contraindicated, consider:

- Perioperative posterior pericardiotomy
- Biatrial pacing

Not indicated

- Statins
- PUFAs
- Digoxin
- Steroids
- CCBs

## Postoperatively

- Optimize fluid balance, oxygenation and pain control
- Minimize inotropes and vasopressors
- Continue preoperative pharmacological prophylaxis

**Postoperative AF**

Haemodynamic instability? — YES → **Emergency cardioversion**

NO

**Systemic anticoagulation**

Symptomatic? Difficult rate control? — YES → **Rhythm control** ECV or PCV → **AADS**
Normal LVEF: Class IC or III
Reduced LVEF: Amiodarone

NO

**Rate control**

Target resting HR <100 bpm

- **Preserved LVEF:** beta-blocker, CCB or digoxin
- **Reduced LVEF:** Beta-blocker or digoxin

**At discharge**

Follow-up plan
Re-assessment for rhythm and AADs

**Long-term OAC** in patients at risk of stroke (balanced with bleeding risk) considering the anticipated net clinical benefit of OAC and informed patient preferences.

# *Hamiləlik+AF*

- YOAK əks göstərişdir
- Hamiləliyin mərhələsinə görə heparin ya VKA ilə antikoaqulyasiya önərilir- *class I*
- Ilk və son trimestrdə VKA əks göstərişdir.
- VKA 12-36cı həftələrdə verilə bilər.
- Xəstə VKA alırsa, fetal İK qanama riskinə görə vaginal doğuş olmaz.
-

# *Yaşlılarda AF*

- NOAK seçimdir,intrakranial hemoraggiya riski azdır.

- Başlamadan əvvəl və sonra illik qaraciyər və böyrək testləri dəyərləndirilməli-*class I*

*Ablasiya sonrası 2 ay antikoaqulyasiya mütləq,uzun müddət qərarı skora görə-*class I*

*OAK alanlarda ablasiya zamanı OAK kəsilməməli-*class I*

*LAA qapadılması sonrası uzun müddət OAK,skora görə-*class I*

DİQQƏTİNİZ ÜÇÜN TƏŞƏKKÜRLƏR!