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Antikoagulation bei CKD

Gunnar Henrik Heine

Ich habe keinen Interessenskonflikt

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ESC 2020 Atrial Fibrillation Guidelines

Eur Heart J 2021

Prothrombotic state

Prothrombotic state in coexistent AF and CKD

Virchow's triad

Vessel wall and/or atrial tissue abnormalities

Atrial fibrosis
- Myocyte hypertrophy
- Fibroelastosis
- Endocardial fibrosis and infiltration
- Extracellular matrix abnormalities

Ventricular hypertrophy
- Extensive myocardial fibrosis

Vascular factors
- Accelerated atherosclerosis
- Arteriosclerosis (fibrosis and thickening of the media)
- Arterial wall calcification
- Increased arterial stiffness

Endothelial dysfunction
- Impaired arterial vasodilatation due to reduced NO availability

Blood flow abnormalities

- Atrial dilatation
- Loss of atrial systole
- LAA characteristics

RAAS activation:
- ↑ Fibrinogen
- ↑ D-dimer
- PAI1

Inflammation:
- ↑ IL-6
- ↑ IL-1β
- ↑ CRP
- ↑ vWF
- ↑ TNF

- Vitamin D
- Phosphorus
- Calcium

Blood constituents

Hypercoagulability
- ↑ Thrombin–antithrombin complex
- ↑ D-dimer
- ↑ Prothrombin 1 and 2
- ↑ vWF
- ↑ Tissue factor
- ↑ PAI1

Platelet dysfunction
- Increased aggregability
- Increased reactivity

Microparticles
- Increased platelet production
- Increased surface tissue factor
- Increased release of soluble tissue factor

Prohaemorrhagic state

Alterations in platelet function

Reduced platelet activity

Disturbed composition of α-granules
- Increased ATP: ADP ratio
- Reduced content of serotonin

↓ PAF synthesis

↓ Oxidative stress and inflammation

↑ Ca^{2+} content and disturbed intracellular Ca^{2+} flux

Altered arachidonic acid and prostaglandin metabolism with impaired synthesis and/or release of TxA_2

Alterations in platelet–vessel-wall interactions

Reduced binding of platelets to the vessel wall

↓ Function of GPIb/GPIIIa

GPIb/GPIIIa

↓ Proteolysis of GPIb

Functional defect in the vWF–platelet interaction

GPIb

Endothelial cell

↑ Production of prostacyclin and NO

vWF

ECM

Prohaemorrhagic state

Alterations in platelet function

Reduced platelet adhesion and aggregation

↑ Circulating fibrinogen

Anaemia

- ↓ Erythrocytes
- ↓ NO scavenging owing to reduced haemoglobin levels

- ↓ Interactions with the vessel wall
- ↓ ADP release
- ↑ Activation of PGI_2

Therapy

Drugs
- β-Lactam antibiotics
- Aspirin
- NSAIDs
- Anticoagulants

Invasive procedures
- Central venous access
- Haemodialysis

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Nephrotisches Syndrom

Venöse Thrombembolie

Vorhofflimmern

Ausblick

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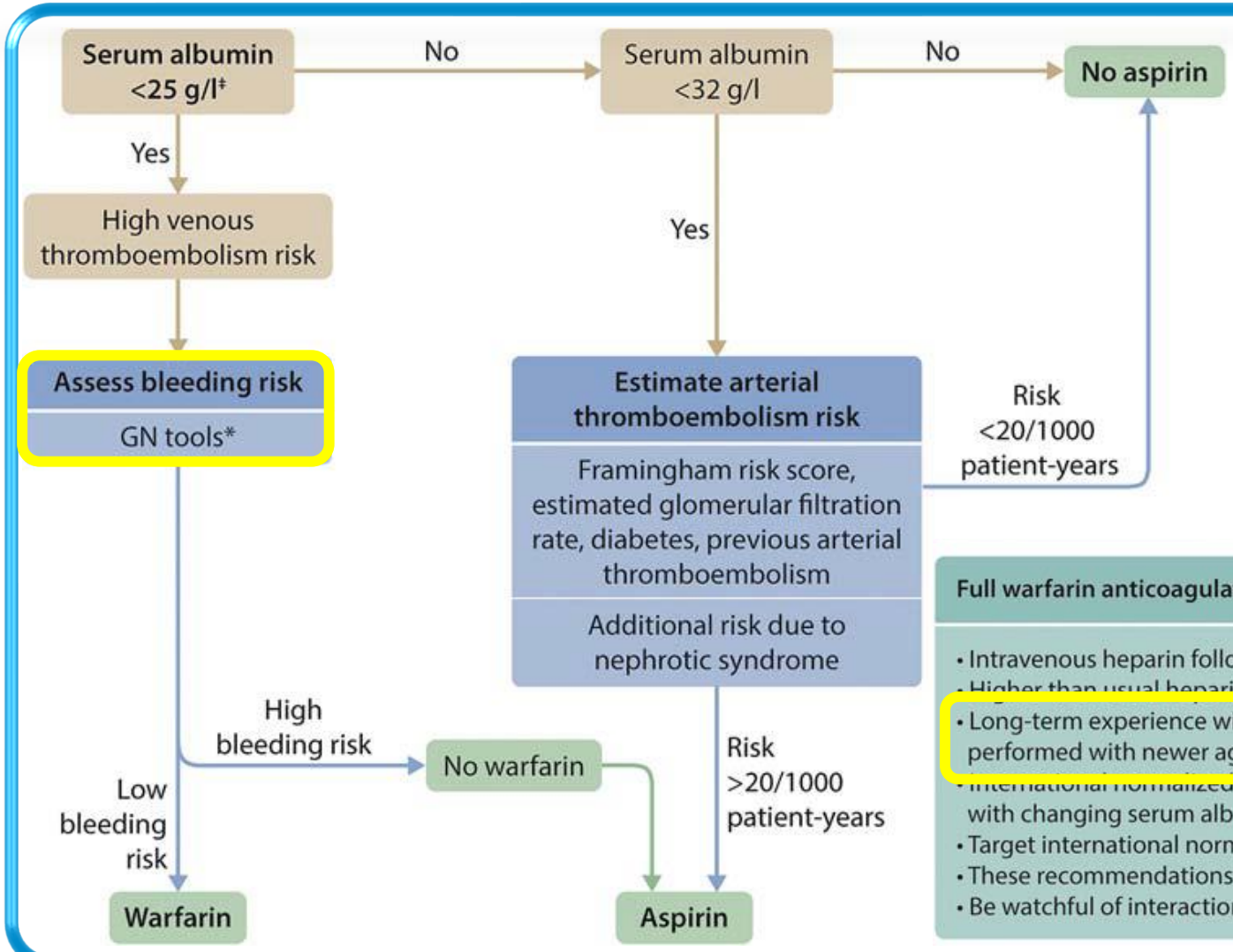
KDIGO 2021 Guidelines for Glomerular Diseases

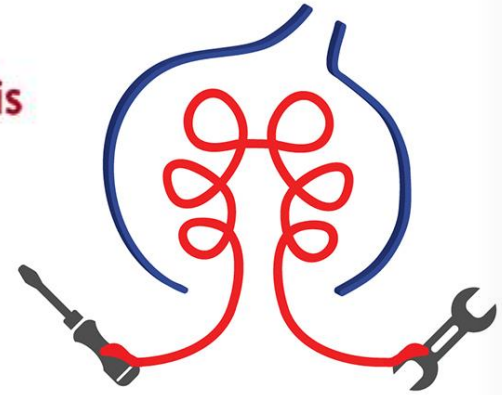
Kidney Int 2021



http://www.med.unc.edu/gntools/

TORONTO Glomerulonephritis REGISTRY

UNC HEALTH CARE KIDNEY CENTER



GNTOOLS.COM

Full warfarin anticoagulation for thromboembolic events

- Intravenous heparin followed by bridging to warfarin is preferred
- Higher than usual heparin dosing may be required in nephrotic syndrome due to antithrombin III urinary loss
- Long-term experience with warfarin makes it the anticoagulant of choice until pharmacokinetic studies are performed with newer agents
- International normalized ratio should be monitored frequently, since warfarin–protein binding may fluctuate with changing serum albumin
- Target international normalized ratio is 2–3
- These recommendations are not supported by randomized controlled trials
- Be watchful of interactions of warfarin with other medications

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Apixaban in Nephrotic Syndrome

Vimal K. Derebail *et al.* Am J Kidney Dis 2023

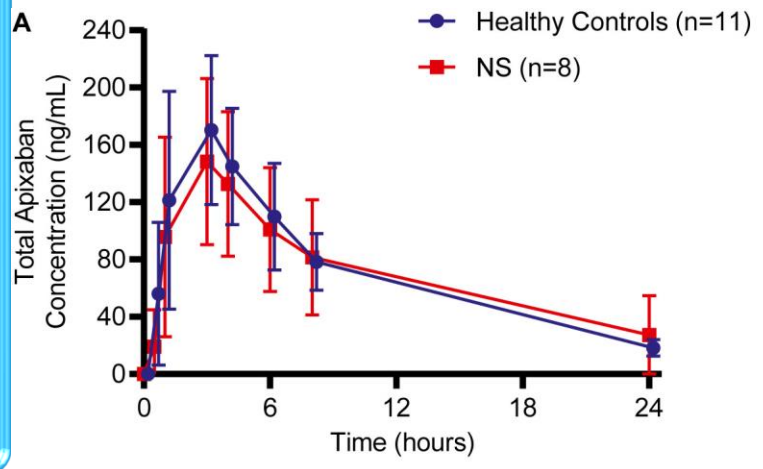
11 / 11
(Nephrotic Syndrome / controls)

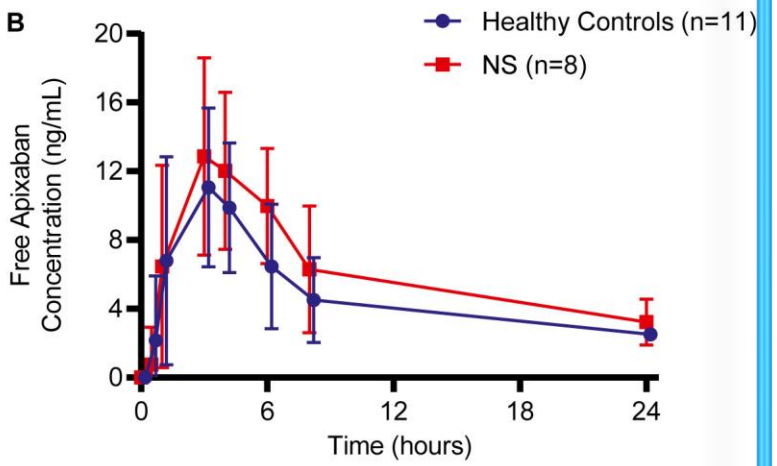
Apixaban 10 mg

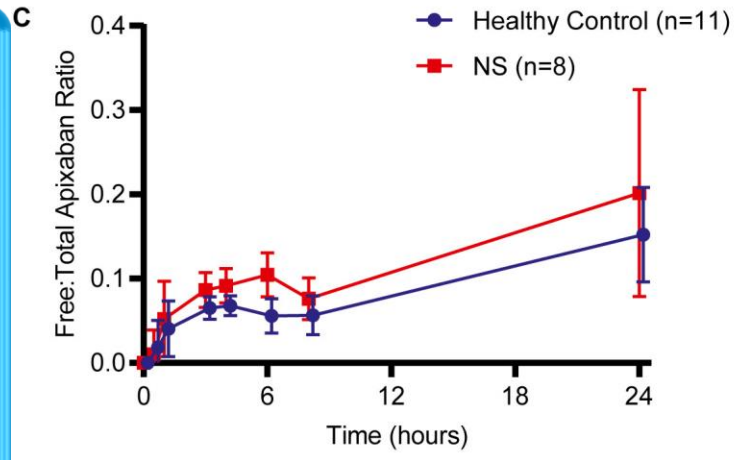
BE vor und 0, 5, 1, 3, 4, 6, 8, and 24 h nach

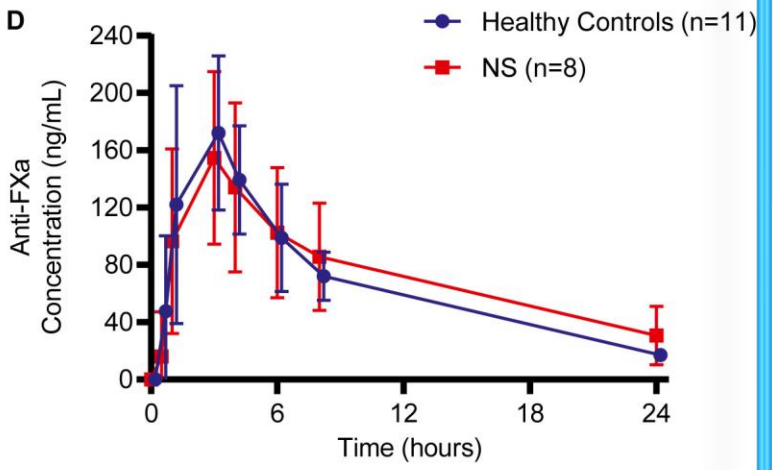
PK Analysen / anti-FXa

Characteristic	Nephrotic Syndrome Subjects (n=8)	Healthy Control Subjects (n=11)
Age, median years (range)	42.3 (34.5-66.7)	28.0 (23.5-62.6)
Diagnosis, n (%)		
MN	3 (38)	0 (0)
FSGS	4 (50)	0 (0)
MCD	1 (12)	0 (0)
Weight (kg), mean (SD)	96 (26)	85 (23)
BMI (kg/m^2), mean (SD)	32 (9)	28 (6)
Renal Function		
UPCR (for eligibility), mean (SD)	7.52 (2.66)	0.02 (0.02)
UPCR (at Day 1 study visit), mean (SD)	6.07 (2.95)	0.02 (0.02)
SCr (mg/dL), mean (SD)	1.77 (1.77)	0.79 (0.14)









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Venöse
Thrombembolie

Vorhofflimmern

Ausblick

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OAC in CKD – Metaanalysis

Ha J *et al.* Ann Intern Med 2019

Annals of Internal Medicine REVIEW

Benefits and Harms of Oral Anticoagulant Therapy in Chronic Kidney Disease

A Systematic Review and Meta-analysis

Jeffrey T. Ha, MBBS; Brendon L. Neuen, MBBS(Hons); Lap P. Cheng, MBBS; Min Jun, PhD; Tadashi Toyama, PhD; Martin P. Gallagher, PhD; Meg J. Jardine, PhD; Manish M. Sood, MD; Amit X. Garg, PhD; Suetonia C. Palmer, PhD; Patrick B. Mark, PhD; David C. Wheeler, MD; Vivekanand Jha, MD; Ben Freedman, PhD; David W. Johnson, PhD; Vlado Perkovic, PhD; and Sunil V. Badve, PhD

Background: Effects of oral anticoagulation in chronic kidney disease (CKD) are uncertain.

Purpose: To evaluate the benefits and harms of vitamin K antagonists (VKAs) and non-vitamin K oral anticoagulants (NOACs) in adults with CKD stages 3 to 5, including those with dialysis-dependent end-stage kidney disease (ESKD).

Data Sources: English-language searches of MEDLINE, EMBASE, and Cochrane databases (inception to February 2019); review bibliographies; and ClinicalTrials.gov (25 February 2019).

Study Selection: Randomized controlled trials evaluating VKAs or NOACs for any indication in patients with CKD that reported efficacy or bleeding outcomes.

Data Extraction: Two authors independently extracted data, assessed risk of bias, and rated certainty of evidence.

Data Synthesis: Forty-five trials involving 34 082 participants who received anticoagulation for atrial fibrillation (AF) (11 trials), venous thromboembolism (VTE) (11 trials), thromboprophylaxis (6 trials), prevention of dialysis access thrombosis (8 trials), and cardiovascular disease other than AF (9 trials) were included. All but the 8 trials involving patients with ESKD excluded participants with creatinine clearance less than 20 mL/min or estimate glomerular filtration rate less than 15 mL/min/1.73 m^2. In A compared with VKAs, NOACs reduced risks for stroke or sy temic embolism (risk ratio [RR], 0.79 [95% CI, 0.66 to 0.93]; high certainty evidence) and hemorrhagic stroke (RR, 0.48 [CI, 0.30 to 0.76]; moderate-certainty evidence). Compared with VKAs, th effects of NOACs on recurrent VTE or VTE-related death wer uncertain (RR, 0.72 [CI, 0.44 to 1.17]; low-certainty evidence). all trials combined, NOACs seemingly reduced major bleedin risk compared with VKAs (RR, 0.75 [CI, 0.56 to 1.01]; low certainty evidence).

Limitation: Scant evidence for advanced CKD or ESKD; da mostly from subgroups of large trials.

Conclusion: In early-stage CKD, NOACs had a benefit-risk pr file superior to that of VKAs. For advanced CKD or ESKD, ther was insufficient evidence to establish benefits or harms of VKA or NOACs.

Primary Funding Source: None. (PROSPERO: CRD42017079707

Ann Intern Med. doi:10.7326/M19-0087 Annals.o
For author affiliations, see end of text.
This article was published at Annals.org on 16 July 2019.

Chronic kidney disease (CKD) is a prothrombotic state that is associated with substantially increased risks for arterial and venous thromboembolism (VTE) (1). In addition, atrial fibrillation (AF) is highly prevalent in this population, affecting 18% of patients with CKD (2) and 12% to 25% of those with dialysis-dependent end-stage kidney disease (ESKD) (3, 4). The presence of CKD increases risks for stroke or systemic embolism, congestive heart failure, myocardial infarction, and all-cause death among patients with AF (5, 6). Compared with persons with normal kidney function, risk for VTE is almost 2-fold greater among those with an estimated glomerular filtration rate (eGFR) between 15 and 59 mL/min/1.73 m^2 (7) and 3-fold greater in those with dialysis-dependent ESKD (8). Venous thromboembolism in ESKD is also associated with increased risks for bleeding and all-cause death (8). Other common clinical manifestations of increased thrombotic risk in CKD include acute coronary syndrome, stroke, peripheral artery occlusion, and dialysis access thrombosis (1, 9).

Anticoagulant therapy is an important intervention in the prevention of cardiovascular thrombotic and VTE events. Evidence-based treatment guidelines recommend anticoagulation for prevention of stroke in patients with nonvalvular AF and a CHA_2DS_2-VASc score of 2 or greater in men or 3 or greater in women (1 11), for VTE in patients who have had major orthoped or nonorthopedic surgery or hospitalized patients wit acute illness (12), and for recurrent VTE in patients wit VTE disease (13).

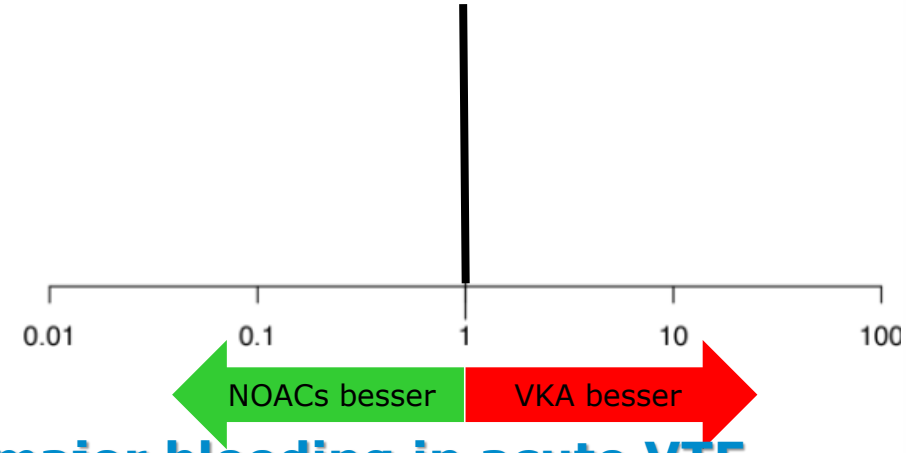
Patients with advanced CKD and ESKD who hav AF are prescribed oral anticoagulant (OAC) therap less frequently than those with normal kidney functio (3, 14). Use of warfarin in patients receiving dialysis wh have AF varies from 2% in Germany to 37% in Canad (3). The low rates of anticoagulant therapy use in ac vanced CKD and ESKD may be due to the increase risk for bleeding, uncertainty about potential benefits this population, warfarin-associated calciphylaxis, an warfarin-related nephropathy (15, 16). In CKD, risk fo major bleeding increases linearly with decreasing eGF

See also:
Editorial comment
Web-Only
Supplement
CME/MOC activity

Relative effect on VTE / VTE-related death in acute VTE

NOAC vs VKA				
EINSTEIN	11	332	11	322
Hokusai VTE	8	268	16	273
AMPLIFY	7	169	7	158
RE–MEDY	1	59	1	49
RECOVER	0	114	5	123
Random effects model	**27**	**942**	**40**	**925**

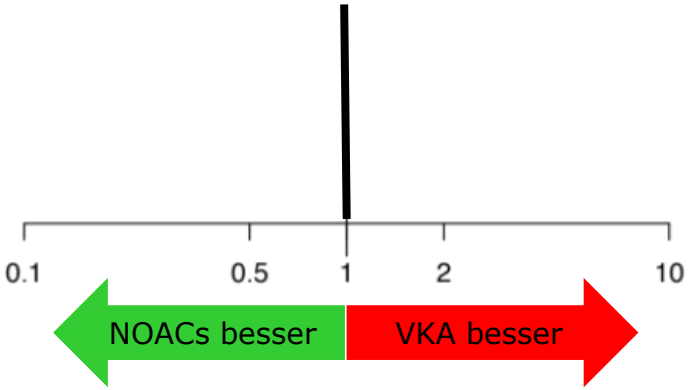
$I^2 = 0\%$



Relative effect on major bleeding in acute VTE

NOAC vs VKA				
AMPLIFY	5	175	9	163
RECOVER	6	106	5	114
EINSTEIN	3	329	13	321
Random effects model	**14**	**610**	**27**	**598**

$I^2 = 51\%$



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USRDS (Wetmore *et al.*)

Clin J Am Soc Nephrol 2022

12206 Pat mit VTE

Dialysis

Apixaban vs Warfarin (retrospektiv, Kohorte)

Rekurrente VTE, Majorblutung, Tod

Major Bleeding

Variable	Strata	Warfarin Crude N events	Warfarin Event rate per 100 PY	Apixaban Crude N events	Apixaban Event rate per 100 PY
VTE type	DVT only	295	11.2	78	8.6
	PE	107	11.0	25	10.0
VTE setting	Inpatient	164	12.3	34	10.6
	Outpatient	238	10.5	69	7.6
HD vascular access	Catheter	180	10.2	52	9.3
	AV graft	65	12.1	*	8.6
	AV fistula	126	11.4	30	8.4
Surgery/trauma	Yes	86	10.1	26	9.5
	No	316	11.4	77	8.5
Cancer/chemotherapy	Yes	64	15.0	18	12.6
	No	338	10.6	85	8.0
Antiplatelet use	Yes	67	15.8	22	11.3
	No	335	10.5	81	8.5

Api besser

Outcome	Analysis	Warfarin Crude N events	Warfarin Event rate per 100 PY	Apixaban Crude N events	Apixaban Event rate per 100 PY	HR (95% CI)
Recurrent VTE						
Major bleeding						
All-cause mortality						

Api besser 0.50 1.00 2.00 VKA besser

CAS
censored-at-drug-switch-or-continuation

ITT
intention-to-treat

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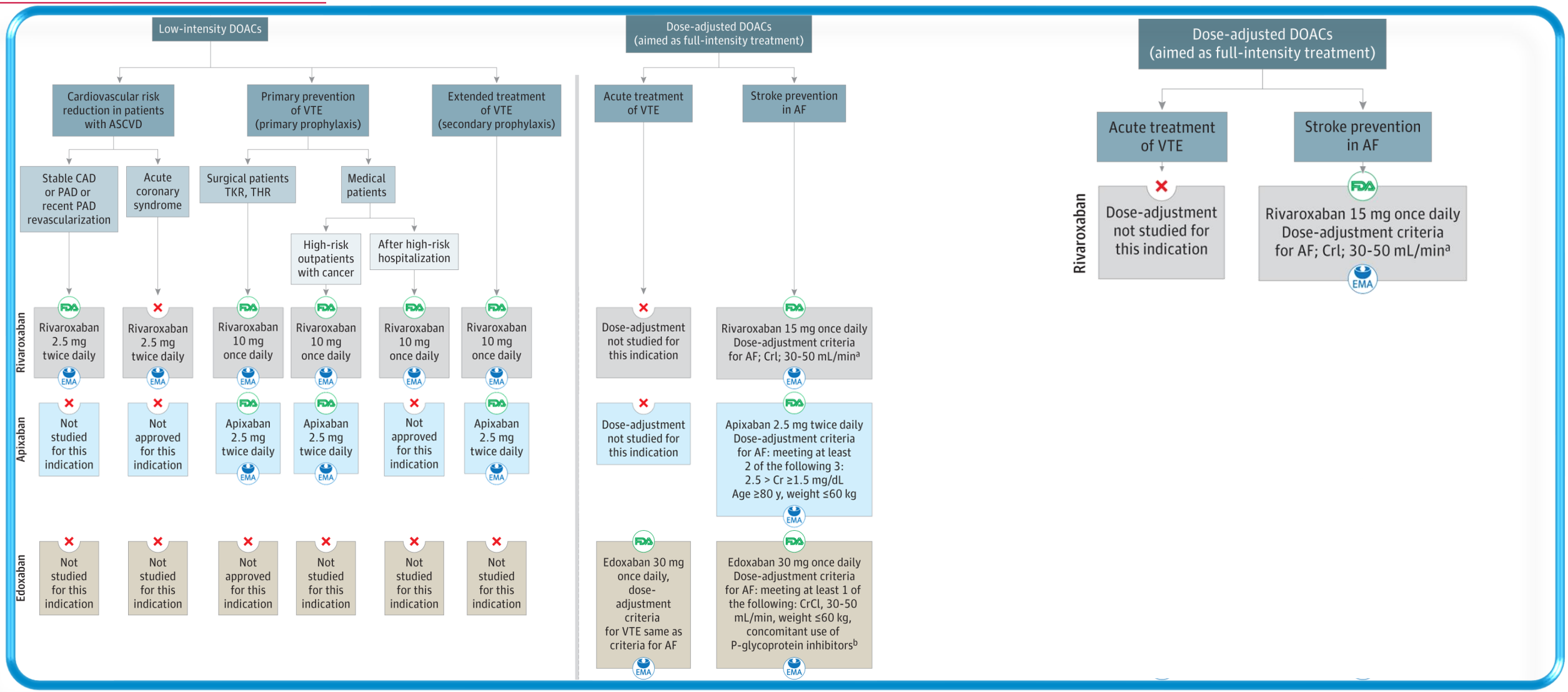
Dose-Reduced DOACs

B Bikdeli *et al* JAMA Cardiol 2022



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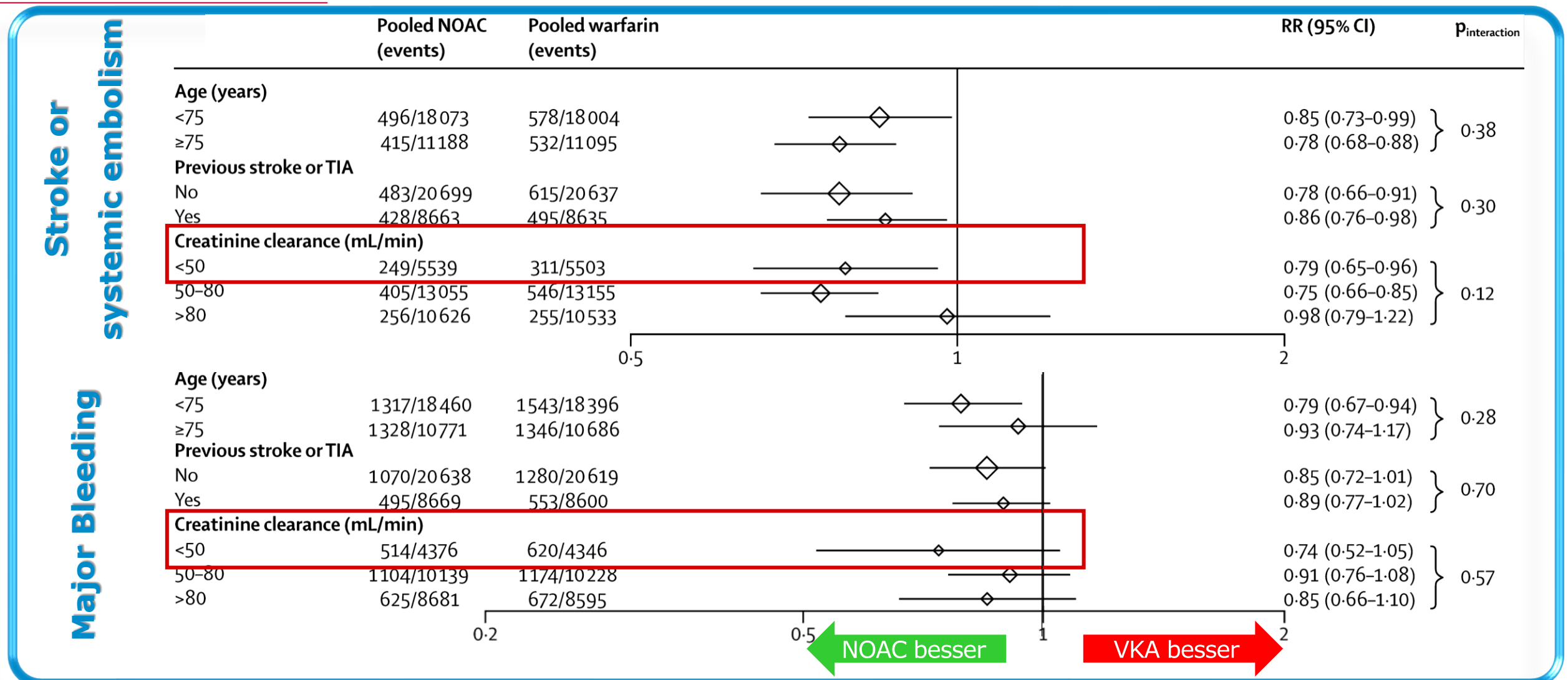
RE-LY, ROCKET AF, ARISTOTLE, ENGAGE AF

Ruff CT *et al.* Lancet 2014



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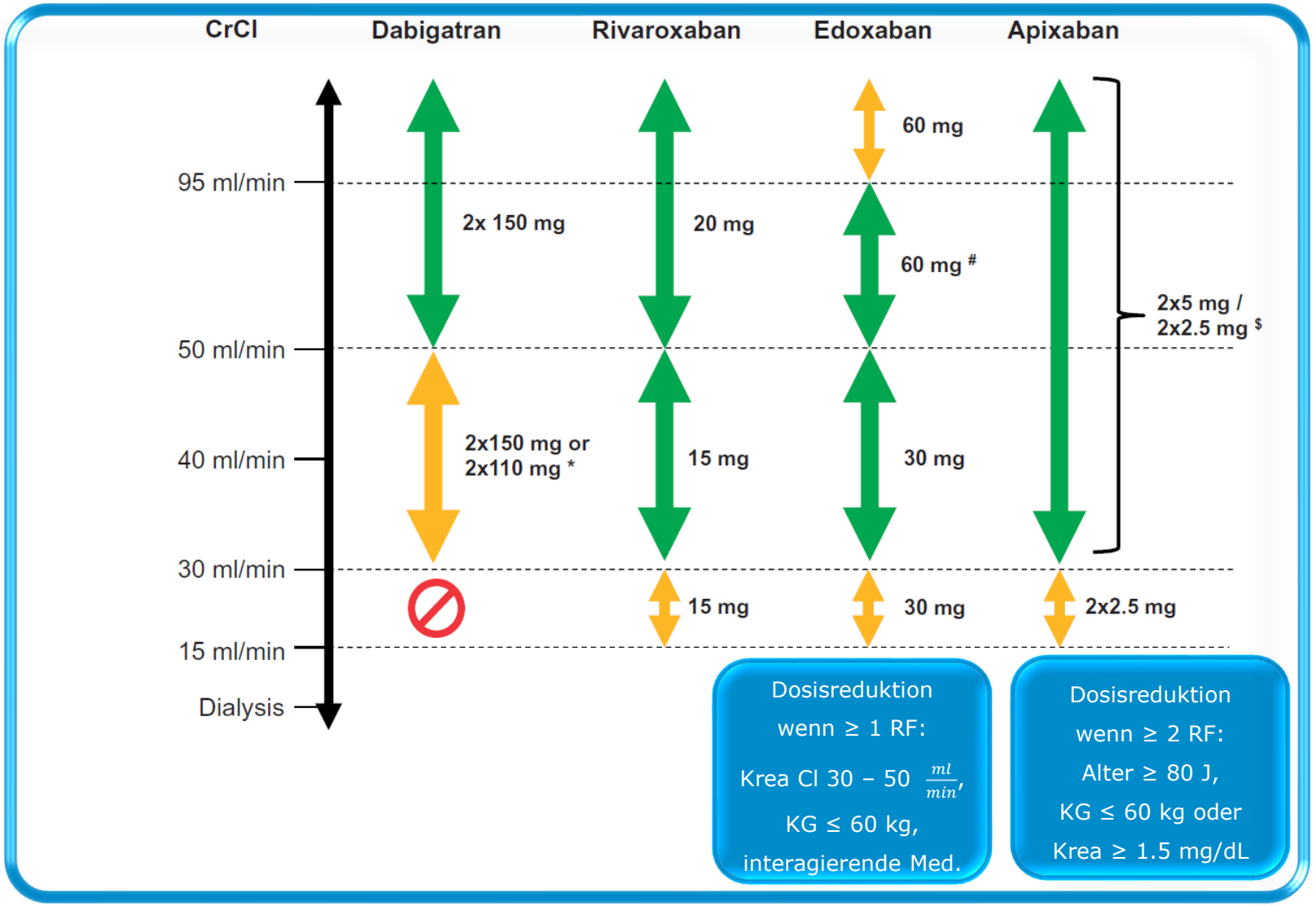
European Heart Rhythm Association Practical Guide 2018



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K Okumura *et al.* ELDERCARE AF New Engl J Med 2020

984 ≥ 80 J (VF; ø Standard AK)

84 % KrCl 15 - 50 ml/min

41 % KrCl 15 -30 ml/min

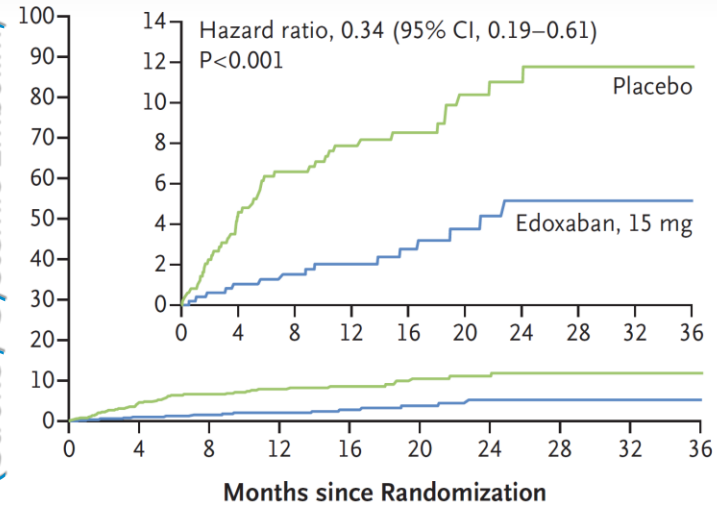
15 mg Edoxaban vs Placebo

1st Efficacy EP: stroke / SEE

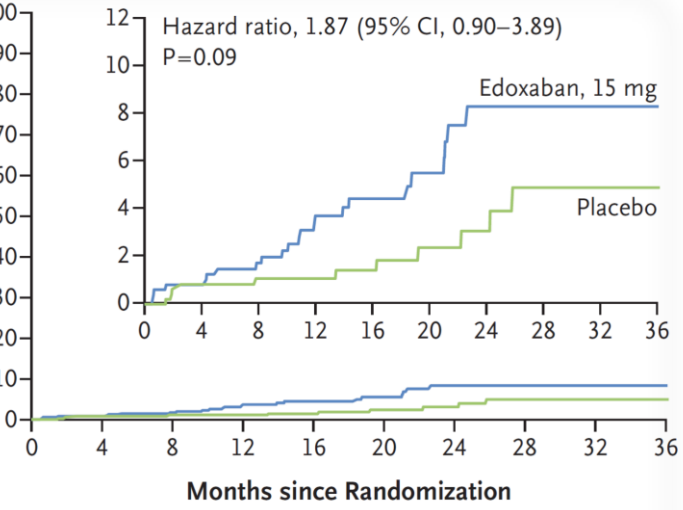
1st Safety EP: Major bleeding

Mean — yr	86.6±4.2
Distribution — no. (%)	
≤85 yr	447 (45.4)
>85 yr	537 (54.6)
Male sex — no. (%)	419 (42.6)
Type of atrial fibrillation — no. (%)	
Nonparoxysmal	521 (52.9)
Paroxysmal	463 (47.1)
Weight — kg	50.6±11.0
Body-mass index†	22.1±3.7
Creatinine clearance	
Mean — ml/min	36.3±14.4

Primary Efficacy EP (Stroke / Systemic Embolim; %)



Primary Safety EP (ISTH Major Bleeding; %)



1,3 Jahre (Median)

KrCl ≥ 30 $\frac{ml}{min}$ (n =581) **66 %** ↓

KrCl 15 – 30 $\frac{ml}{min}$ (n =403) **67 %** ↓

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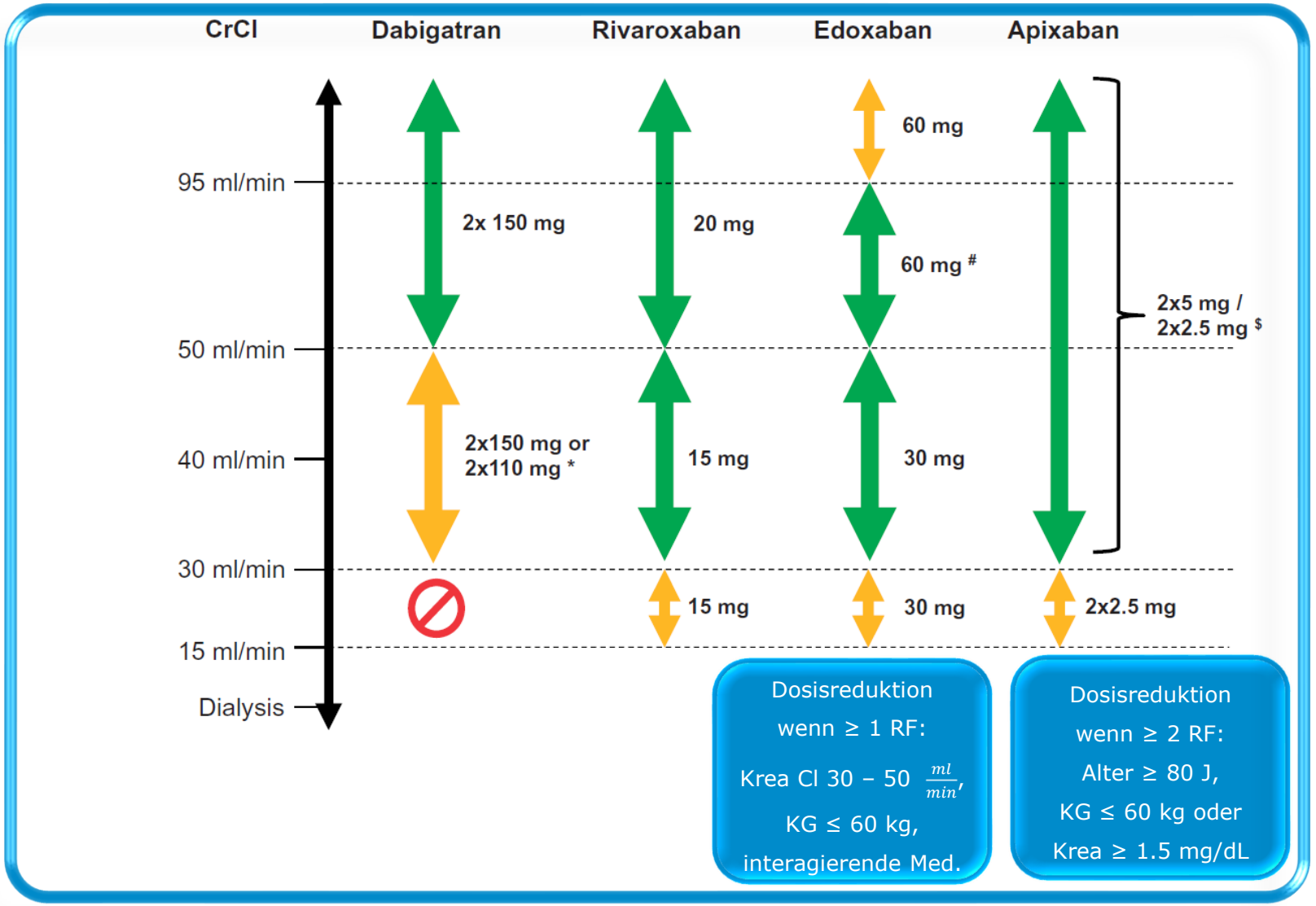
European Heart Rhythm Association Practical Guide 2018



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	Patienten	CHA_2DS_2-VASc	Alter	Intervention	Ziel-INR	Dauer
VALKYRIE	N = 132 (prävalente / inzidente HD)	≥2 (Median 5)	80 J (Median)	VKA *vs* Riva 10 mg *vs* Riva 10 mg + K2	2-3 (TTR 48 % Mo 1 – 6)	1,88 J (Median)
AXADIA	N = 97 (prävelente HD)	≥2 (Median 4,5)	75 J (Mittel)	VKA *vs* Api 2 * 2.5 mg	2–3 (TTR 44 %)	429 d (Api) 506 d (VKA) (Median)
RENAL-AF	N = 154 (prävalente HD)	≥ 2	68 J (Median)	VKA *vs* Api 2 * 5 mg (2 * 2,5 mg bei KG ≤ 60 kg oder Alter ≥ 80 J)	2 – 3 (TTR 51 %)	330 d (Api) 340 d (VKA) (Median)
SAFE-D	N = 151 (prävalente HD)	(Median 4)	72 J (Mittel)	Keine OAK *vs* Warfarin *vs* Api 2 * 5 mg (2 * 2,5 mg in „selected pat“)	2-3 (TTR 58 %)	26 Wochen (per Protokoll)

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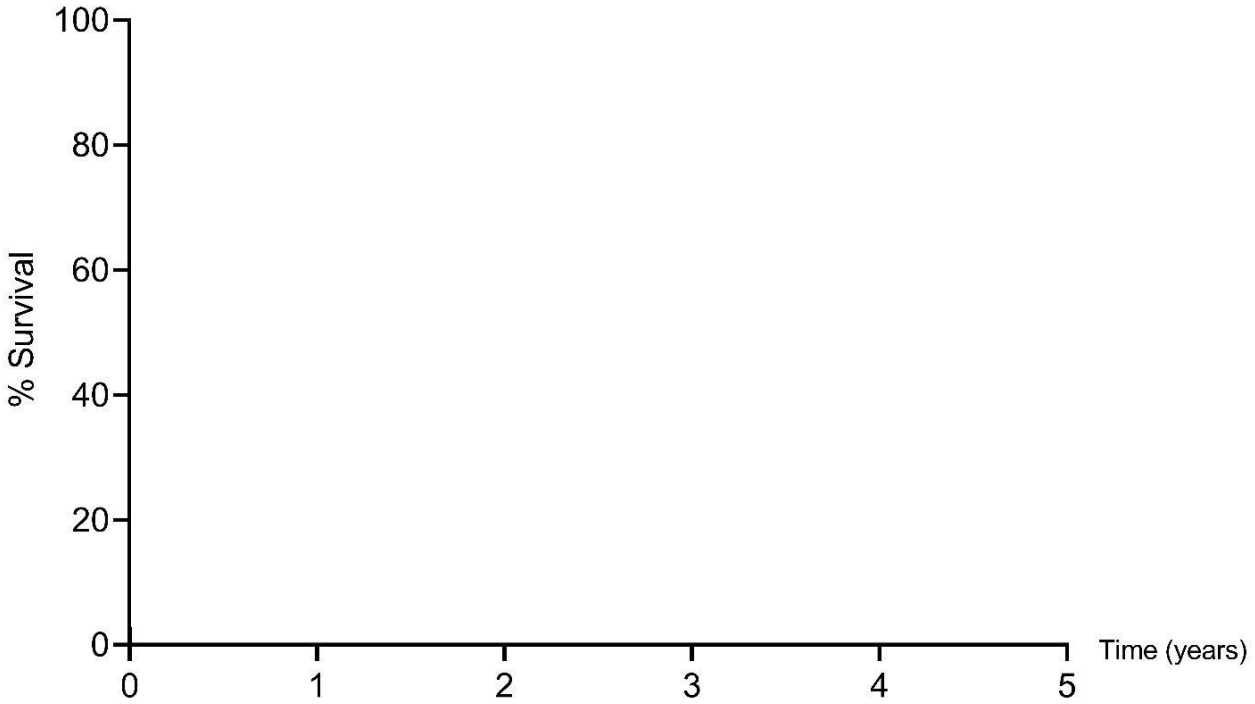
VALKYRIE / AXADIA: Effektivität

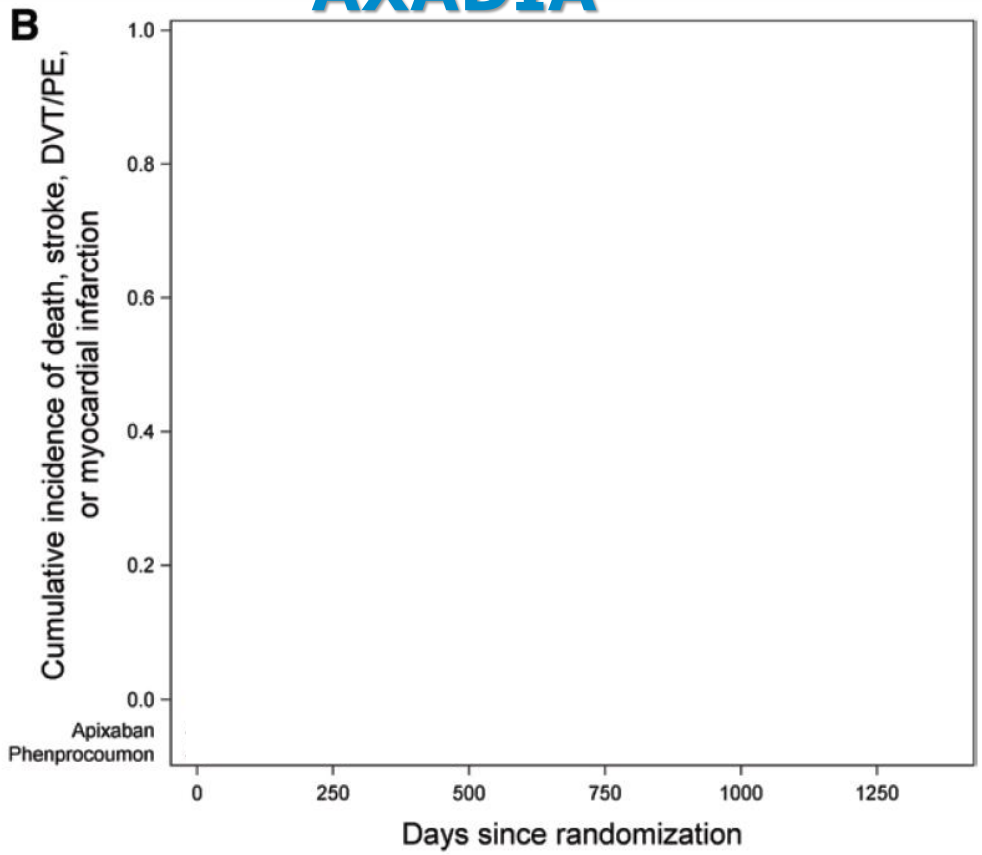
de Vriese J Am Soc Nephrol 2021 / Reinecke Circulation 2023

VALKYRIE



PE: Survival free of fatal and non-fatal cardiovascular events

AXADIA



1st composite efficacy outcome (MI, ischemic stroke, all-cause death, DVT or PE)

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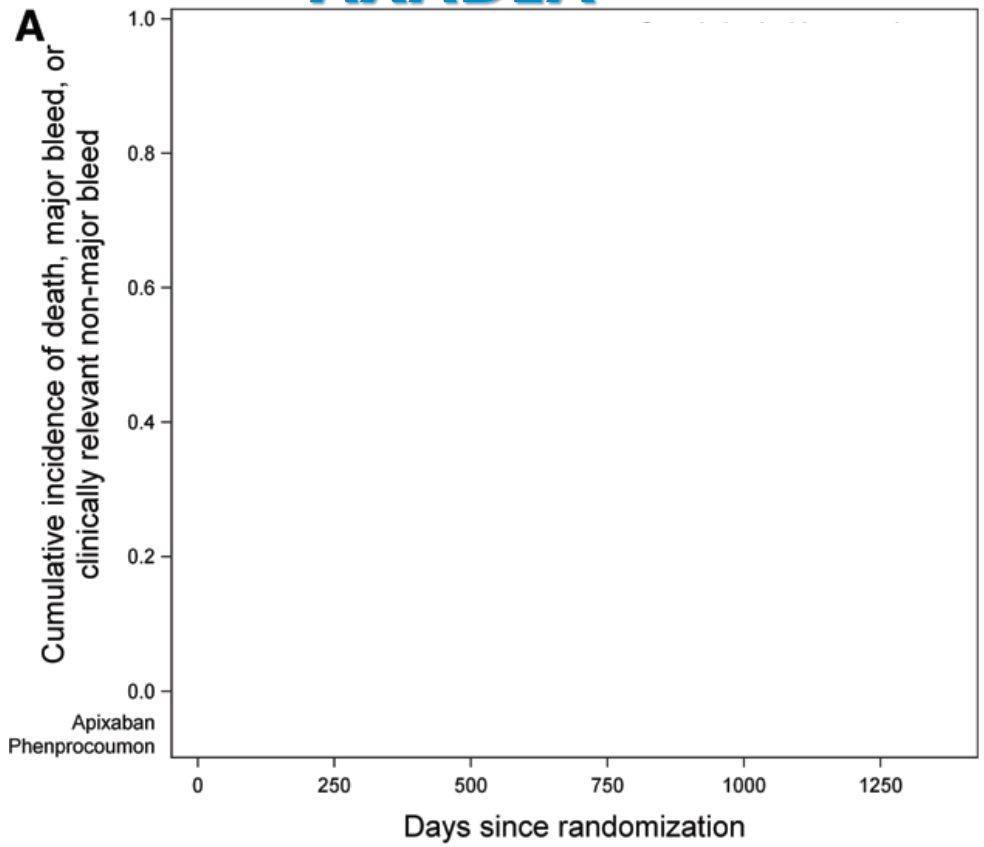
VALKYRIE / AXADIA: Sicherheit

de Vriese J Am Soc Nephrol 2021 / Reinecke Circulation 2023

VALKYRIE

Pat with bleedings (n of bleeding events)	**VKA** (n=44)	**Riva** (n=46)	**Riva + K2** (n=42)
Total	24 (49)	21 (38)	22 (34)
Life-threatening	11 (12)	3 (3)	6 (8)
Major	10 (18)	6 (8)	4 (4)
Life-threatening / major	17 (30)	8 (11)	9 (12)
Minor	13 (19)	16 (27)	16 (22)
Gastrointestinal	12 (23)	9 (16)	13 (19)

AXADIA



1st composite safety outcome (major or clinically relevant nonmajor bleeding, all-cause death)

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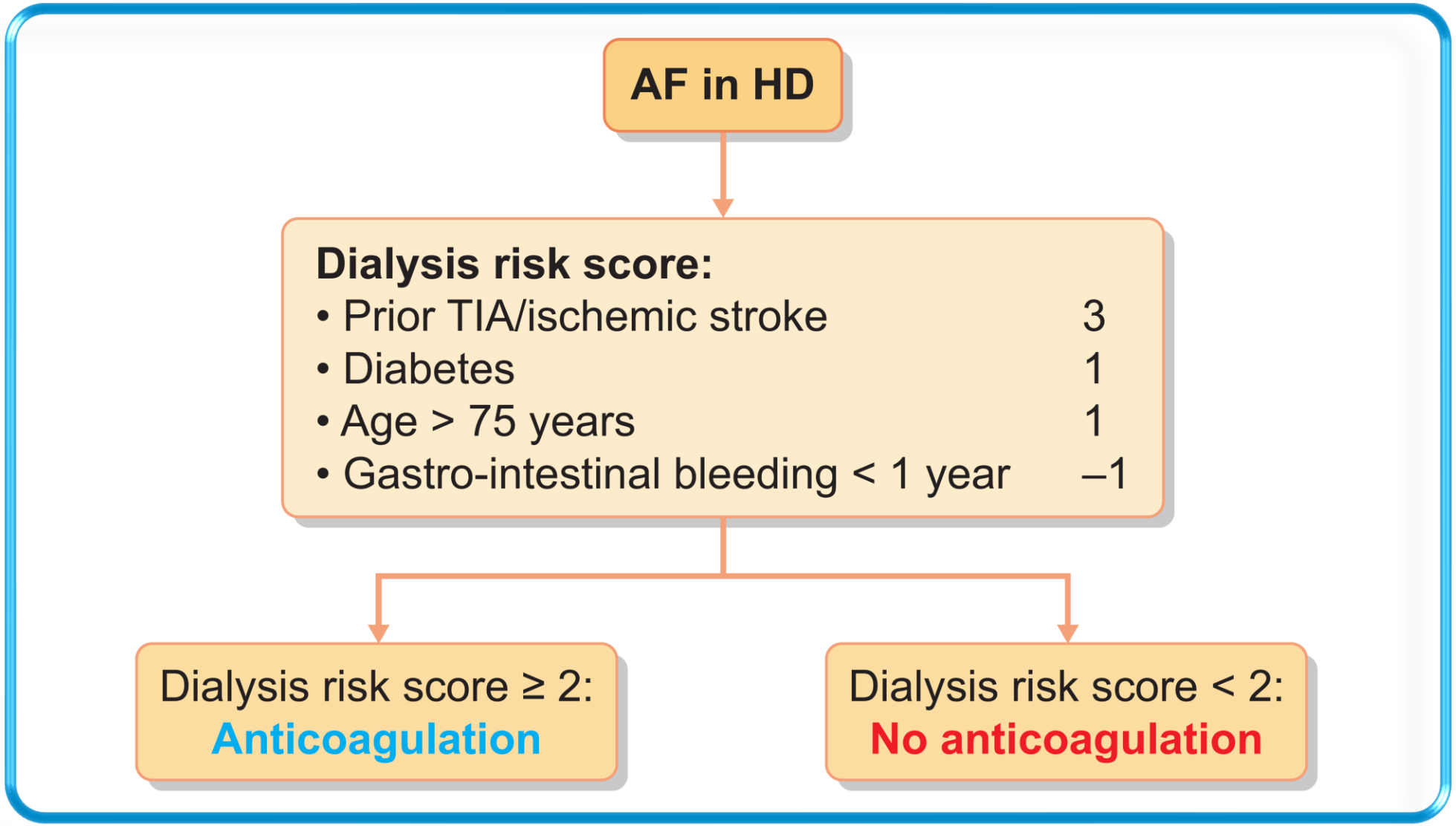
Dialysis Risk Score

A de Vriese / G Heine Nephrol Dial Transplant 2022



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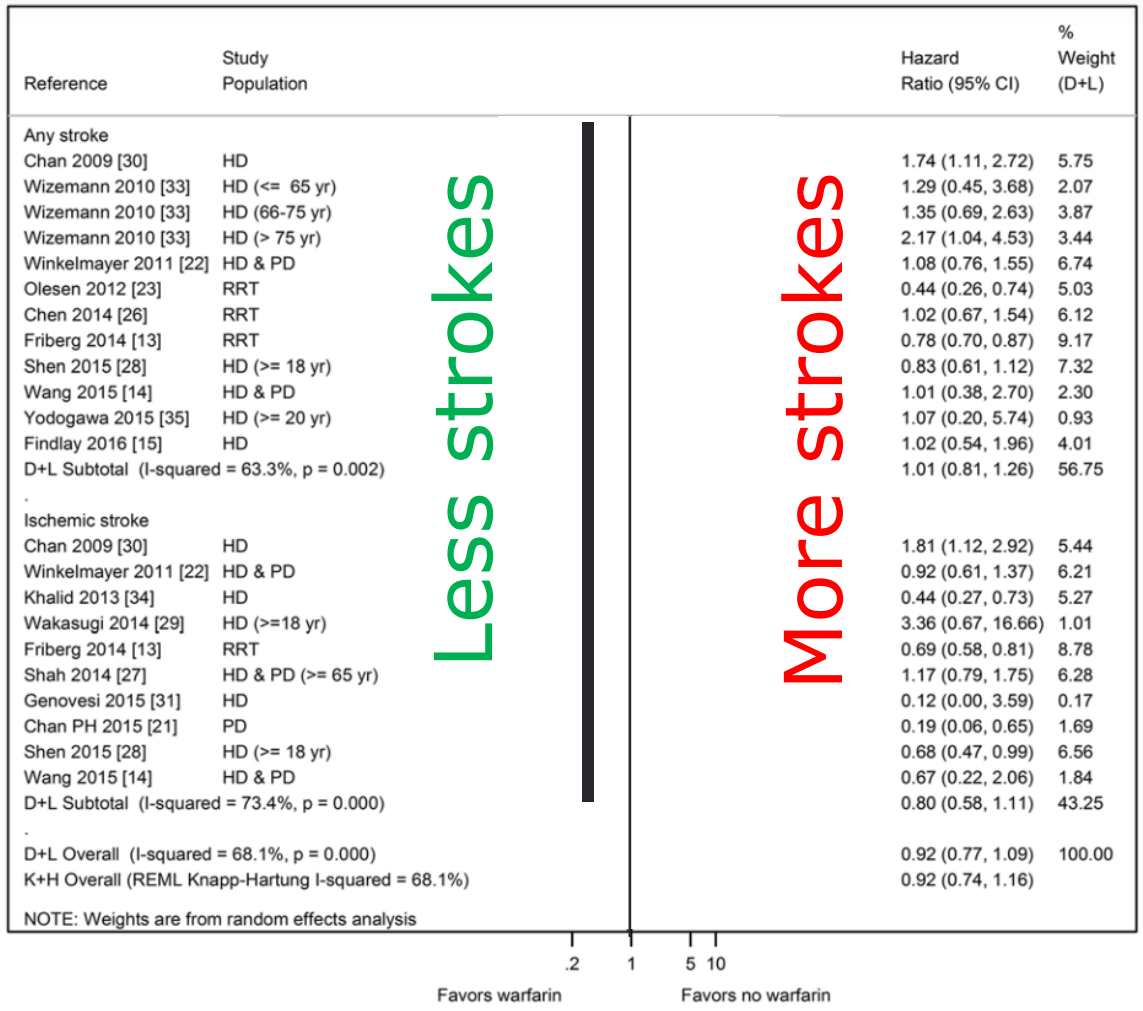
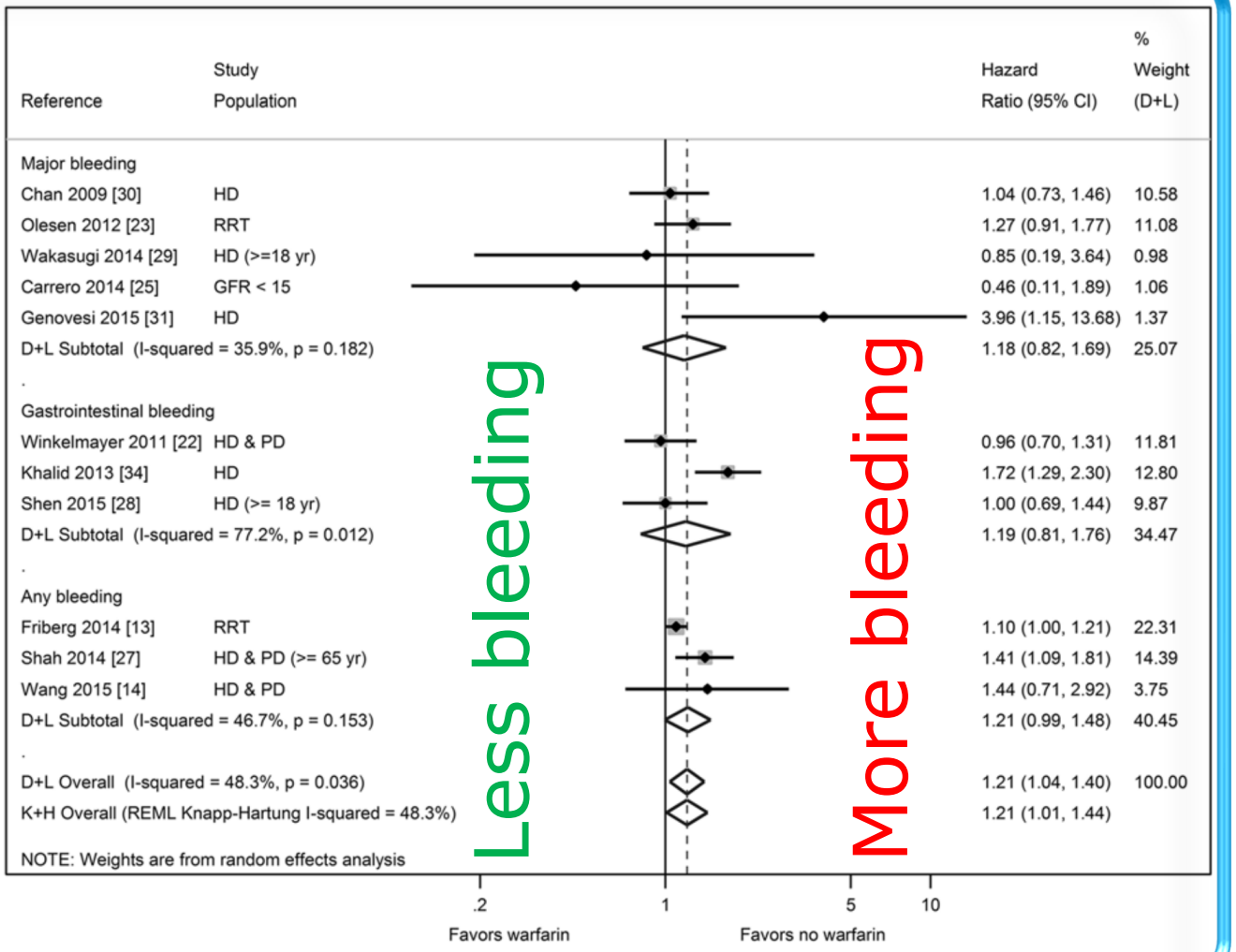
J Tan *et al*. BMC Nephrology 2016





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Gunnar Henrik Heine
@gunnar_heine

Nephrologists and Cardiologists: How would you treat a 70 year old female HD pat with A fib, no prior stroke, no prior bleeding, no diabetes?

- **NOAC**
- VKA
- LAAO
- Neither OAK nor LAAO

119 votes · Final results

7:52 PM · Nov 25, 2023 · **2,802** Views

https://twitter.com/gunnar_heine/status/1728486730381058234

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Gunnar Henrik Heine
@gunnar_heine

Nephrologists and Cardiologists: How would you treat a 70 year old female HD pat with A fib, no prior stroke, no prior bleeding, no diabetes?

NOAC	**63.9%**
VKA	10.9%
LAAO	8.4%
Neither OAK nor LAAO	16.8%

119 votes · Final results

7:52 PM · Nov 25, 2023 · **2,802** Views

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AXADIA	N = 97 (prävelente HD)	≥2 (Median 4,5)	75 J (Mittel)	VKA *vs* Api 2 * 2.5 mg	2–3 (TTR 44 %)	429 d (Api) 506 d (VKA) (Median)
RENAL-AF	N = 154 (prävalente HD)	≥ 2	68 J (Median)	VKA *vs* Api 2 * 5 mg (2 * 2,5 mg bei KG ≤ 60 kg oder Alter ≥ 80 J)	2 – 3 (TTR 51 %)	330 d (Api) 340 d (VKA) (Median)
SAFE-D	N = 151 (prävalente HD)	(Median 4)	72 J (Mittel)	Keine OAK *vs* Warfarin *vs* Api 2 * 5 mg (2 * 2,5 mg in „selected pat“)	2-3 (TTR 58 %)	26 Wochen (per Protokoll)

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SAFE-D

Harel Z *et al.* ASN 2023

151 MD Pat mit A Fib

Med. $CHADS_2$-VASc 4

Warfarin (INR 2 – 3)

vs Apixaban vs Ø OAK

26 Wochen

Feasibility

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Antikoagulation bei CKD

Gunnar Henrik Heine

Ausblick

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F XI Inhibition

A Greco *et al.* Circulation 2023

Circulation

NEW DRUGS AND DEVICES

Pharmacology and Clinical Development of Factor XI Inhibitors

Antonio Greco, MD; Claudio Laudani, MD; Marco Spagnolo, MD; Federica Agnello, MD; Denise Cristiana Faro, MD; Simone Finocchiaro, MD; Marco Legnazzi, MD; Maria Sara Mauro, MD; Placido Maria Mazzone, MD; Giovanni Occhipinti, MD; Carla Rochira, MD; Lorenzo Scalia, MD; Davide Capodanno, MD, PhD

ABSTRACT: Therapeutic anticoagulation is indicated for a variety of circumstances and conditions in several fields of medicine to prevent or treat venous and arterial thromboembolism. According to the different mechanisms of action, the available parenteral and oral anticoagulant drugs share the common principle of hampering or blocking key steps of the coagulation cascade, which unavoidably comes at the price of an increased propensity to bleed. Hemorrhagic complications affect patient prognosis both directly and indirectly (ie, by preventing the adoption of an effective antithrombotic strategy). Inhibition of factor XI (FXI) has emerged as a strategy with the potential to uncouple the pharmacological effect and the adverse events of anticoagulant therapy. This observation is based on the differential contribution of FXI to thrombus amplification, in which it plays a major role, and hemostasis, in which it plays an ancillary role in final clot consolidation. Several agents were developed to inhibit FXI at different stages (ie, suppressing biosynthesis, preventing zymogen activation, or impeding the biological action of the active form), including antisense oligonucleotides, monoclonal antibodies, small synthetic molecules, natural peptides, and aptamers. Phase 2 studies of different classes of FXI inhibitors in orthopedic surgery suggested that dose-dependent reductions in thrombotic complications are not paralleled by dose-dependent increases in bleeding compared with low-molecular-weight heparin. Likewise, the FXI inhibitor asundexian was associated with lower rates of bleeding compared with the activated factor X inhibitor apixaban in patients with atrial fibrillation, although no evidence of a therapeutic effect on stroke prevention is available so far. FXI inhibition could also be appealing for patients with other conditions, including end-stage renal disease, noncardioembolic stroke, or acute myocardial infarction, for which other phase 2 studies have been conducted. The balance between thromboprophylaxis and bleeding achieved by FXI inhibitors needs confirmation in large-scale phase 3 clinical trials powered for clinical end points. Several of such trials are ongoing or planned to define the role of FXI inhibitors in clinical practice and to clarify which FXI inhibitor may be most suited for each clinical indication. This article reviews the rationale, pharmacology, results of medium or small phase 2 studies, and future perspectives of drugs inhibiting FXI.

Key Words: anticoagulants ■ blood coagulation ■ factor XI ■ hemostasis ■ thrombosis

The history of anticoagulation goes back to the early 20th century, when fatal bleedings among cattle were associated with intake of spoiled sweet clover hay. Dicumarol was identified as the responsible agent and synthetized thereafter by Karl Link and his team, initially for rodenticidal use.[1] It took almost 30 years to bring dicumarol to clinical use as the progenitor of a class of compounds reducing the availability of the active form of vitamin K (ie, vitamin K antagonists), an essential cofactor for the biosynthesis of several coagulation factors.[2] More recently, direct oral anticoagulants selectively and reversibly inhibiting the activated (-a) coagulation factors X (rivaroxaban, apixaban, edoxaban, betrixaban) or II (dabigatran) entered clinical practice. These drugs feature several advantages over vitamin K antagonists, including more rapid onset and offset of action, fixed dosing, fewer interactions with drugs and food, and no requirement for laboratory monitoring.[3] Nevertheless,

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For Sources of Funding and Disclosures, see page 910.

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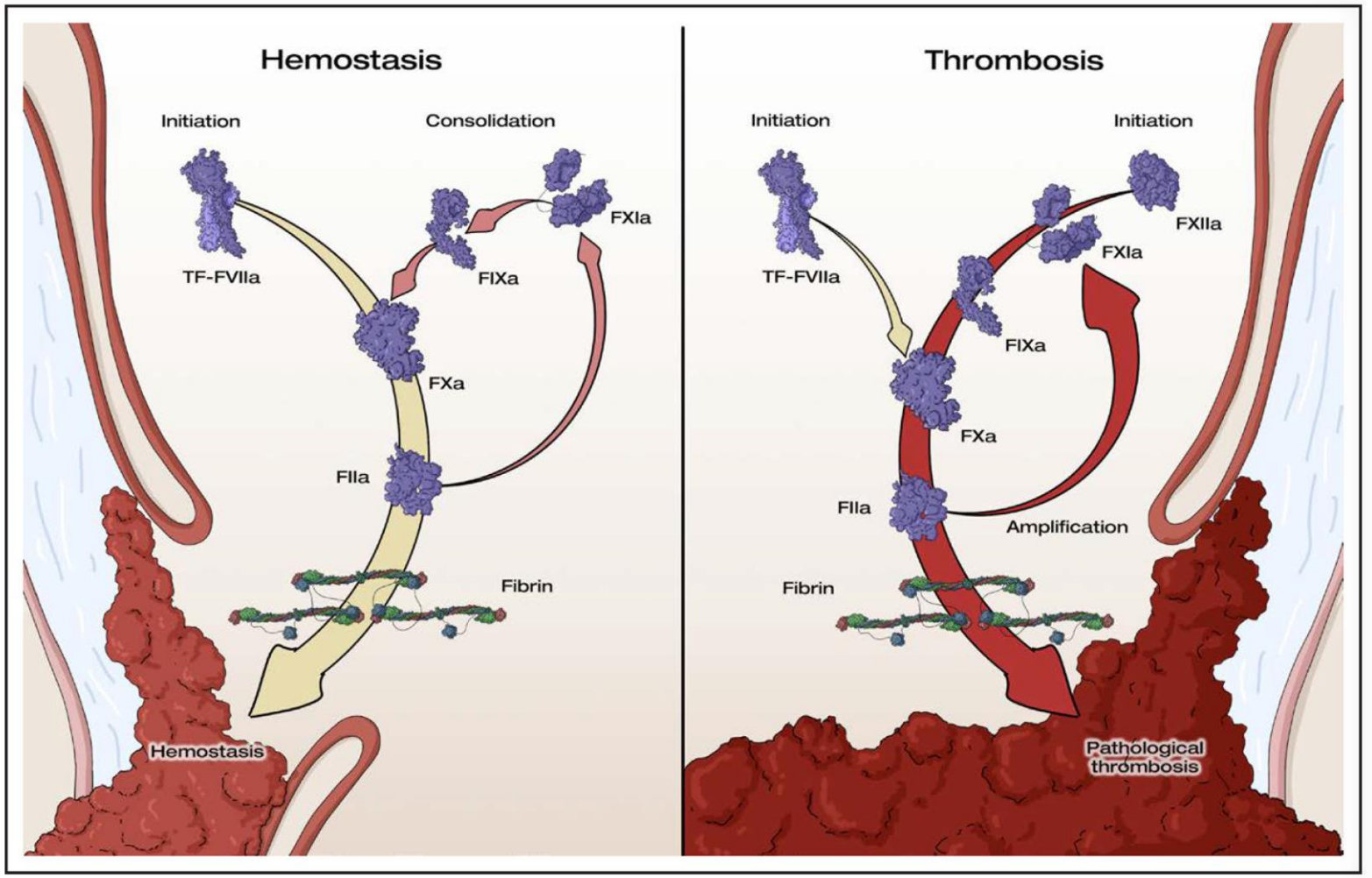

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F XI Inhibition

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NEW DRUGS AND DEVICES

Pharmacology and Clinical Development of Factor XI Inhibitors

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The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.
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Table 5. Ongoing Randomized Trials of FXI Inhibitors Enrolling ≥100 Patients

Trial	Design	Sample, n	Population	Intervention	Control	Primary outcomes	Follow-up, mo
EMERALD (NCT03358030)	Double blind, phase 2	213	ESRD	IONIS-FXI$_{Rx}$	Placebo	Treatment-emergent AEs; CRNM bleeding	≈9
RE-THINc ESRD (NCT04534114)	Double blind, phase 2	307	ESRD	Fesomersen	Placebo	Major or CRNM bleeding	6
CONVERT (NCT04523220)	Double blind, phase 2	686	ESRD	Osocimab	Placebo	Major or CRNM bleeding; composite of moderate/severe AEs and SAEs	6
MK-2060-007 (NCT05027074)	Double blind, phase 2	489	ESRD	MK-2060	Placebo	Arteriovenous graft thrombosis	17
ASTER (NCT05171049)	Open label, phase 3	1655	Cancer	Abelacimab	Apixaban	VTE	6
MAGNOLIA (NCT05171075)	Open label, phase 3	1020	Cancer	Abelacimab	Dalteparin	VTE	6
AZALEA (NCT04755283)	Open label, phase 2	≈1200	AF	Abelacimab	Rivaroxaban	Major or CRNM bleeding	17
LILAC (NCT05712200)	Double-blind, phase 3	1900	AF unsuitable for OAC	Abelacimab	Placebo	Ischemic stroke or systemic embolism; major bleeding	30
OCEANIC-AF (NCT05643573)	Double-blind, phase 3	18000	AF	Asundexian	Apixaban	Stroke or systemic embolism; major bleeding	34
OCEANIC-STROKE (NCT05686070)	Double-blind, phase 3	9300	Stroke or high-risk TIA	Asundexian	Placebo	Ischemic stroke; major bleeding	31
LIBREXIASTROKE (NCT05702034)	Double-blind, phase 3	15000	Stroke or high-risk TIA	Milvexian	Placebo	Ischemic stroke	41

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AZALEA TIMI 71

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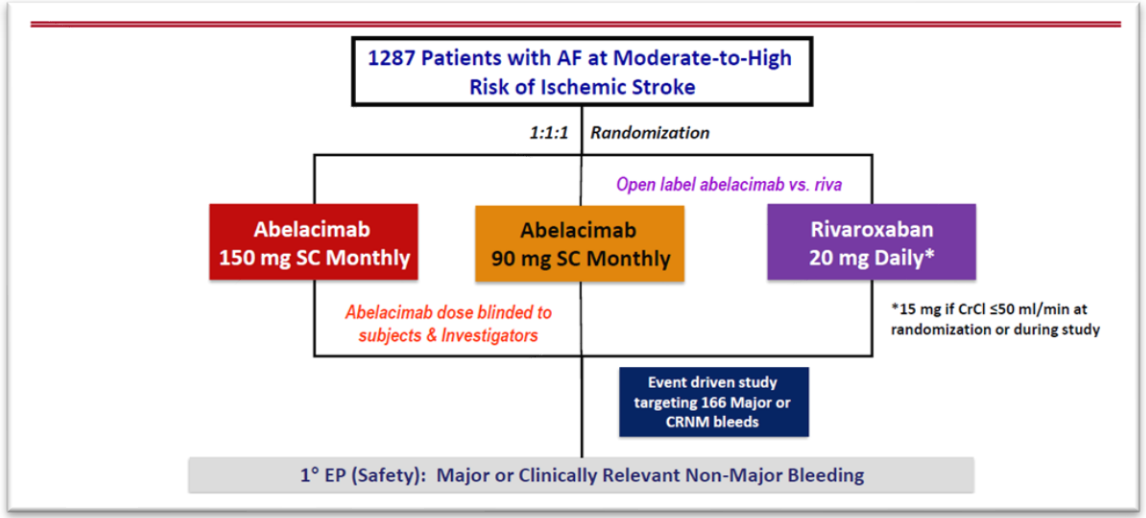

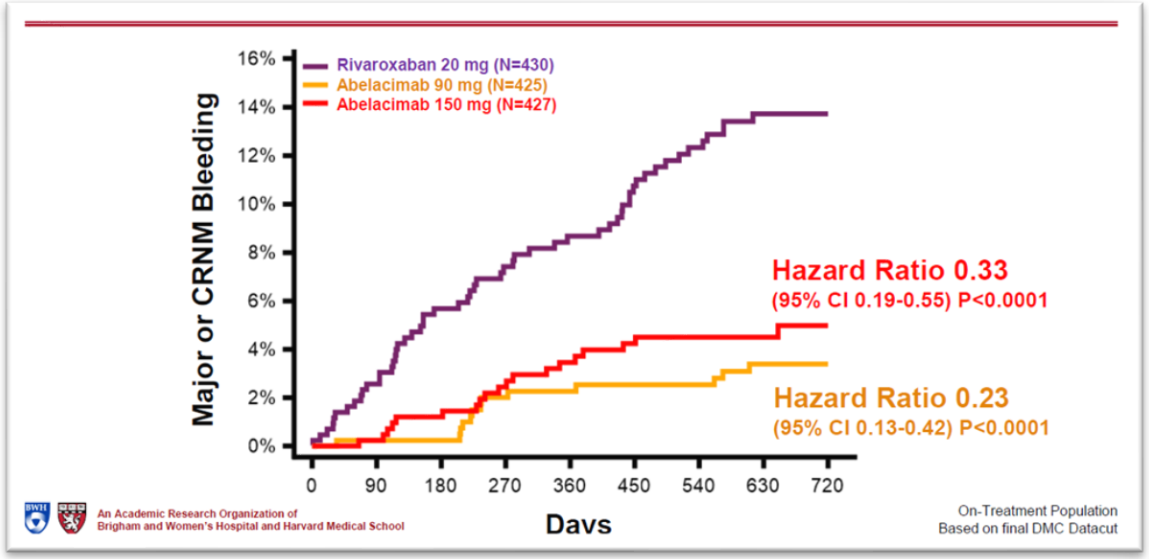

Key Inclusion Criteria

AZALEA TIMI 71

- Age ≥55 years
- Any history of AF or atrial flutter with planned anticoagulation
- CHA_2DS_2-VASc ≥4 *or*
  CHA_2DS_2-VASc = 3 with at least one of the following factors:
  - Planned concomitant use of antiplatelet medications
  - CrCl ≤50 ml/min

(21 %)

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19. November 2023

OCEANIC-AF-Studie aufgrund mangelnder Wirksamkeit vorzeitig abgebrochen

Independent Data Monitoring Committee (IDMC) empfiehlt, OCEANIC-AF-Studie, die eine unterlegene Wirksamkeit von Asundexian im Vergleich zum Kontrollarm der Studie zeigte, abzubrechen / Bei OCEANIC-AF handelt es sich um eine Studie, in der Asundexian im Vergleich zu Apixaban bei Patienten mit Vorhofflimmern und Schlaganfallrisiko im Rahmen des gesamten OCEANIC-Phase-III-Entwicklungsprogramms untersucht wird / IDMC empfiehlt,

https://www.bayer.com/media/oceanic-af-studie-aufgrund-mangelnder-wirksamkeit-vorzeitig-abgebrochen/

accessed 25th November, 2023

...olism

...5 bleeding

NCT05712200

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AZALEA TIMI 71

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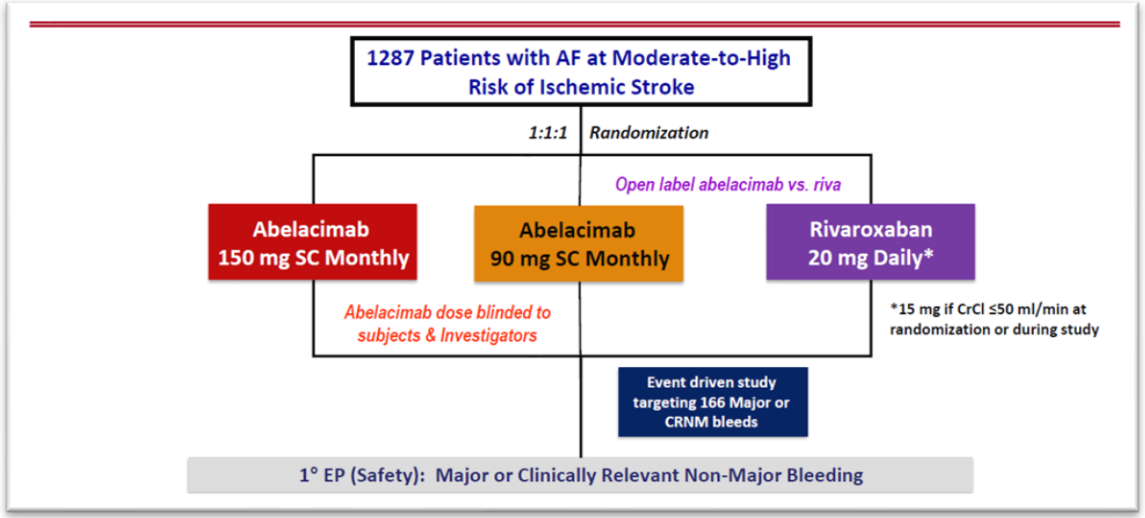

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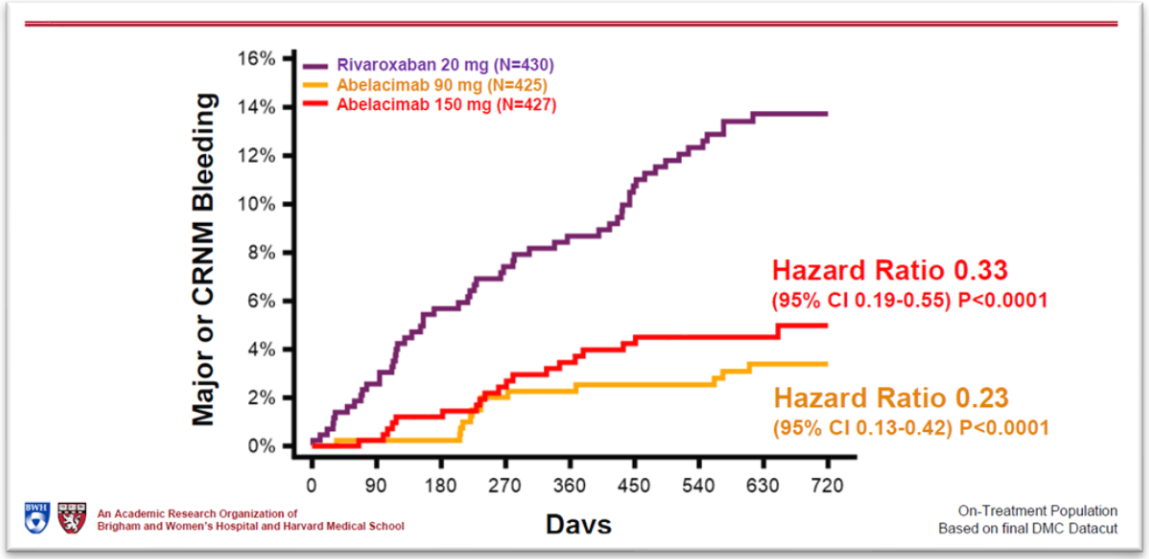
(21 %)



Endpoint	Riva 20 mg (N=430) Incidence Rate	Abelacimab 150 mg (N=427) Incidence Rate	HR (95% CI)	P Value	Abelacimab 90 mg (N=425) Incidence Rate	HR (95% CI)	P-Value
Stroke or SEE	1.0	1.1	1.13 (0.41-3.12)	0.81	1.4	1.45 (0.55-3.80)	0.45
Stroke	1.0	1.1	1.13 (0.41-3.12)	0.81	1.4	1.45 (0.55-3.80)	0.45
Ischemic	0.7	1.1	1.59 (0.52-4.85)	0.42	1.3	1.82 (0.61-5.45)	0.28
Hemorrhagic	0.3	0	N/A	N/A	0.1	0.51 (0.05-5.62)	0.58
All-Cause Death	3.1	2.4	0.77 (0.41-1.46)	0.43	2.8	0.93 (0.51-1.71)	0.83
Net Clinical Outcome	11.3	5.5	0.49 (0.33-0.71)	<0.001	5.6	0.49 (0.34-0.73)	<0.001

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Gunnar Henrik Heine
@gunnar_heine

Nephrologists and Cardiologists: How would you treat a 70 year old female HD pat with A fib, no prior stroke, no prior bleeding, no diabetes?

NOAC	**63.9%**
VKA	10.9%
LAAO	8.4%
Neither OAK nor LAAO	16.8%

119 votes · Final results

7:52 PM · Nov 25, 2023 · **2,802** Views

https://twitter.com/gunnar_heine/status/1728486730381058234

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LAAO

S Genovesi *et al.* J Nephrol 2021

92 Dialysepat mit AF LAAO

114 Dialysispat mit AF VKA
148 Dialysepat ø OAT

(2 Jahre)

PE: LAAO-Komplikationen / Thromboembolie / Blutung / Tod

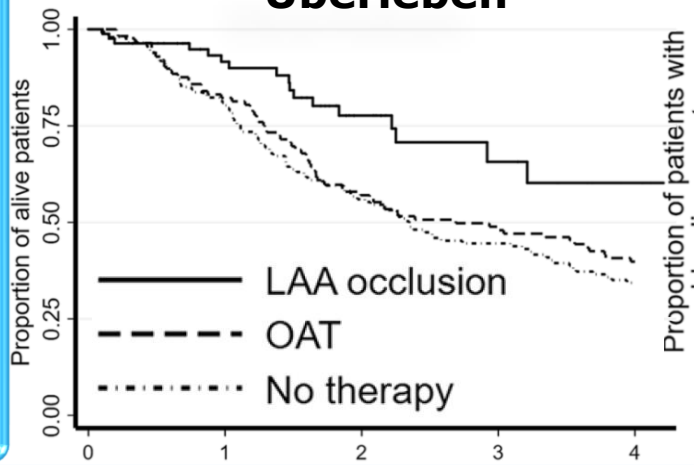
LAAO-Komplikationen

Hämorrhagischer PE (n=1)

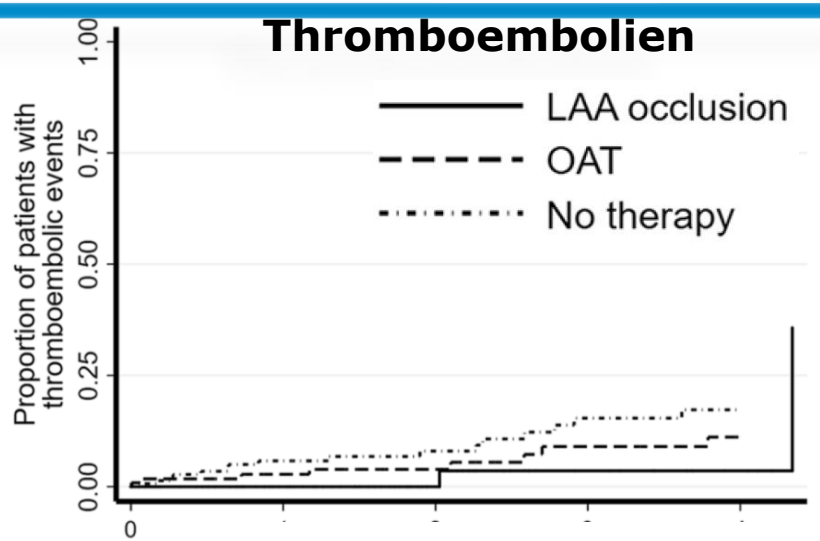
Art Ruptur (n=1)

Hämatom (n=2)

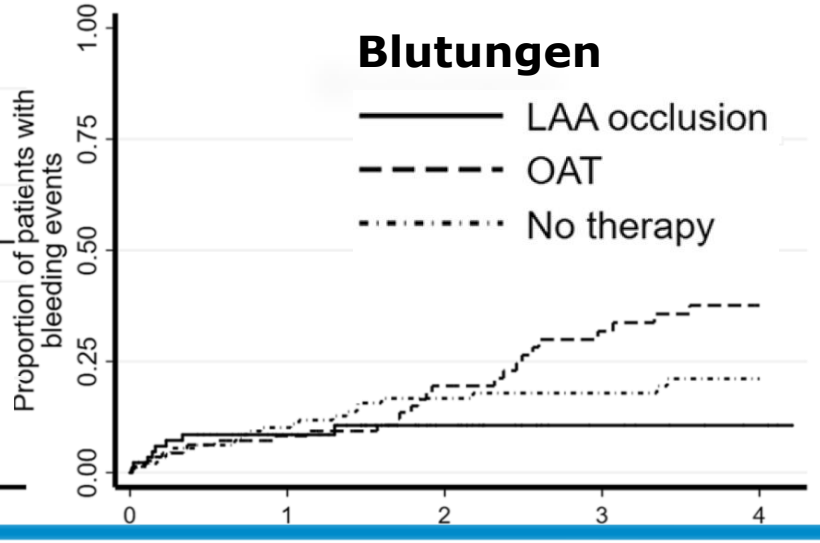
Überleben



Thromboembolien



Blutungen



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