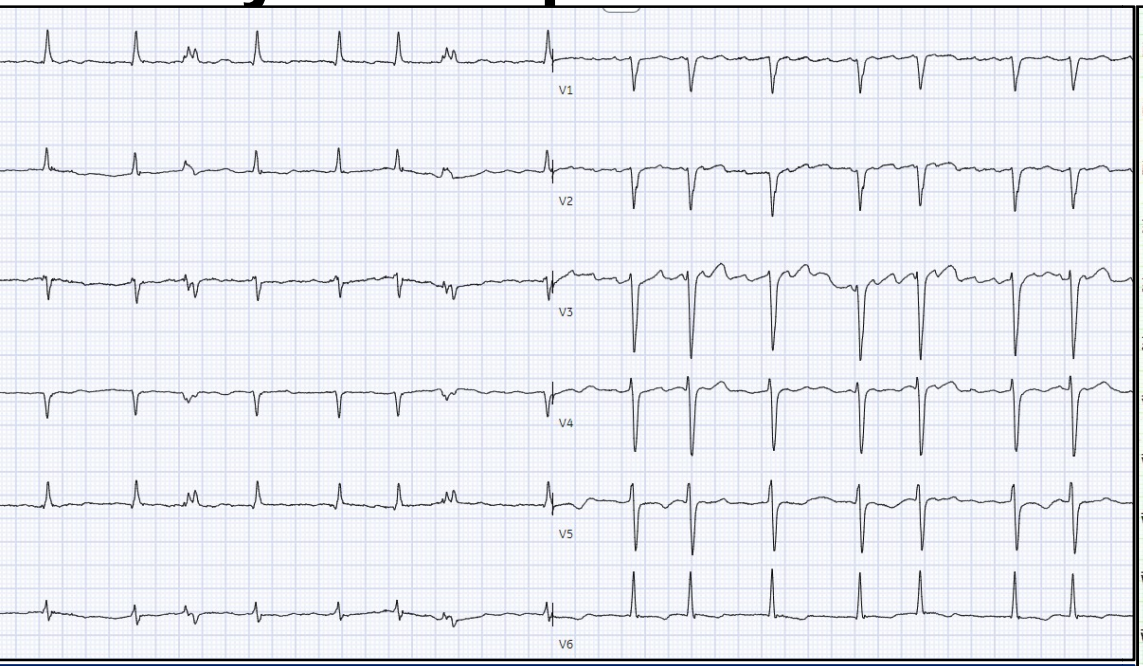
VŠEOBECNÁ FAKULTNÍ NEMOCNICE V PRAZE

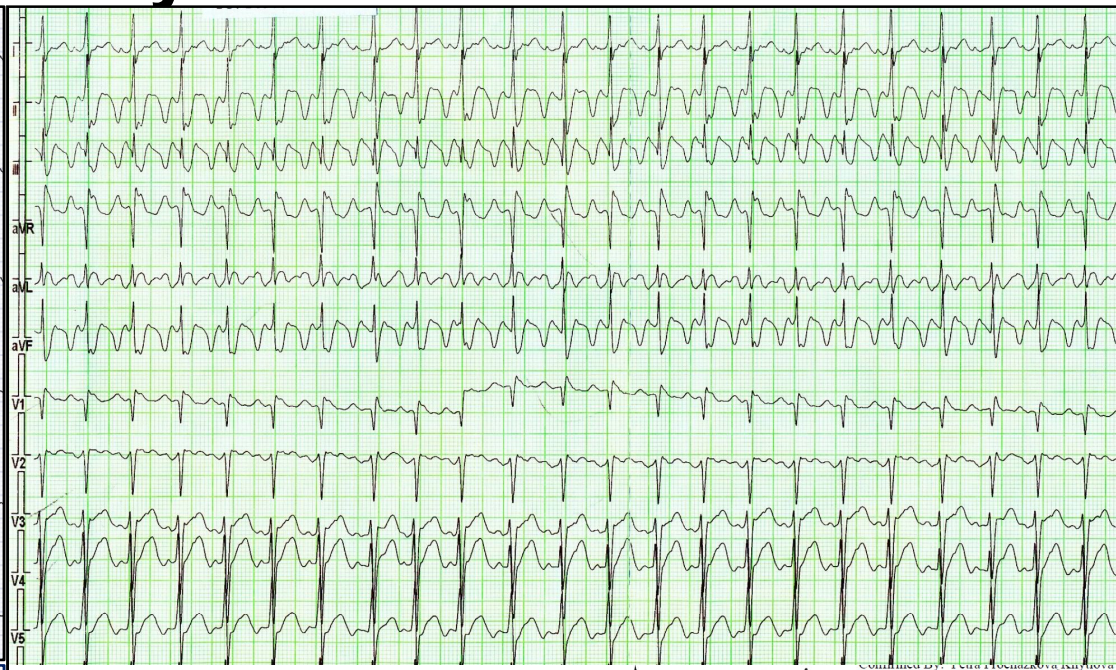
1. LÉKAŘSKÁ FAKULTA Univerzita Karlova

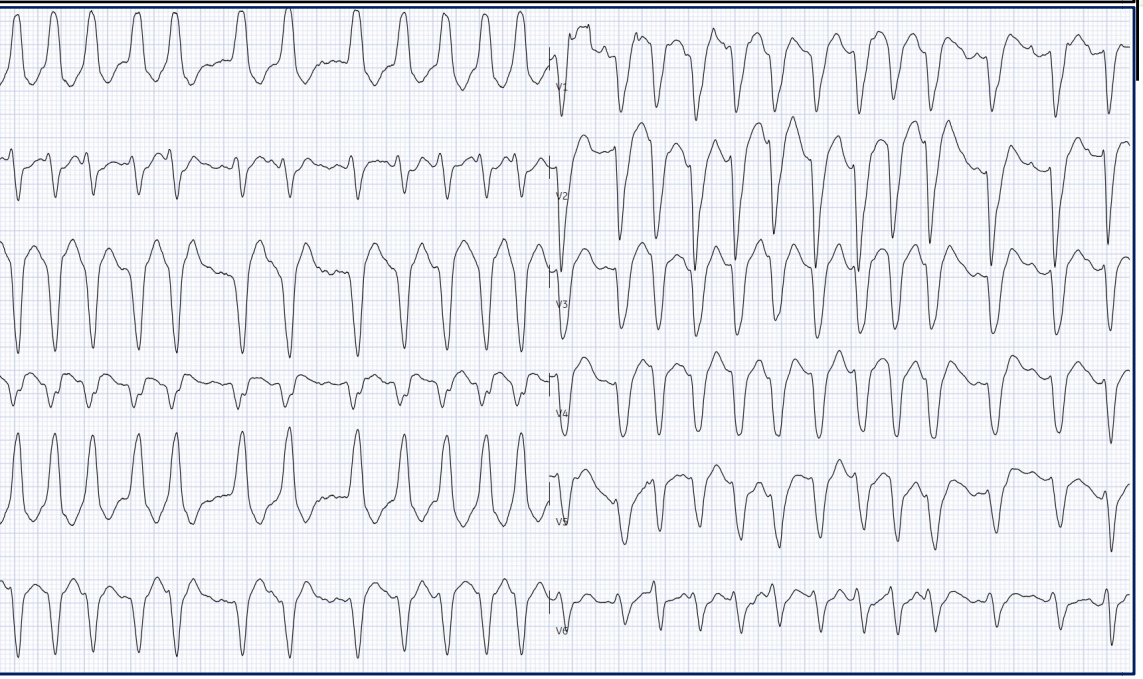
… v ovlivnění rychlých SVT

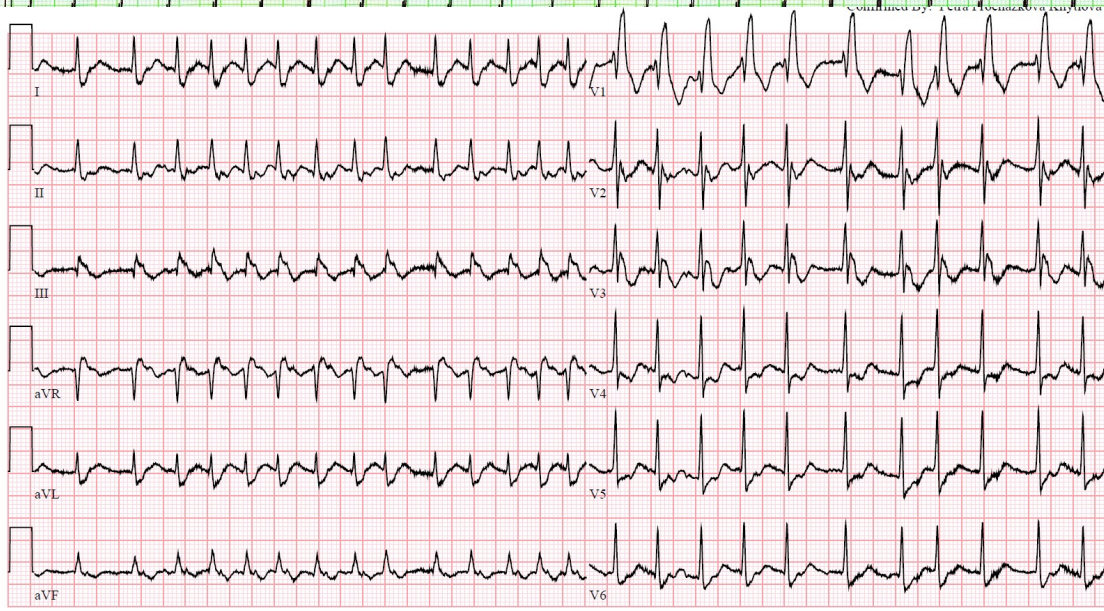
Štěpán Havránek

Rychlé supraventrikulární tachykardie – fibrilace síní



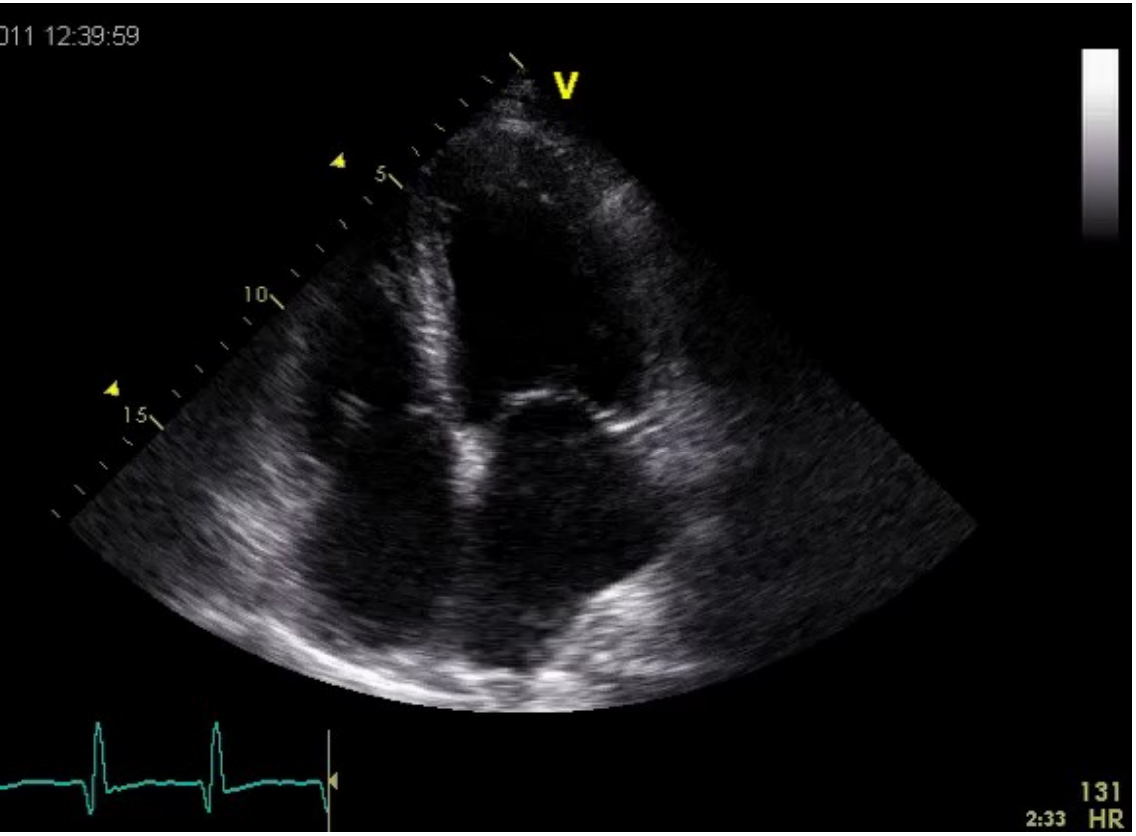


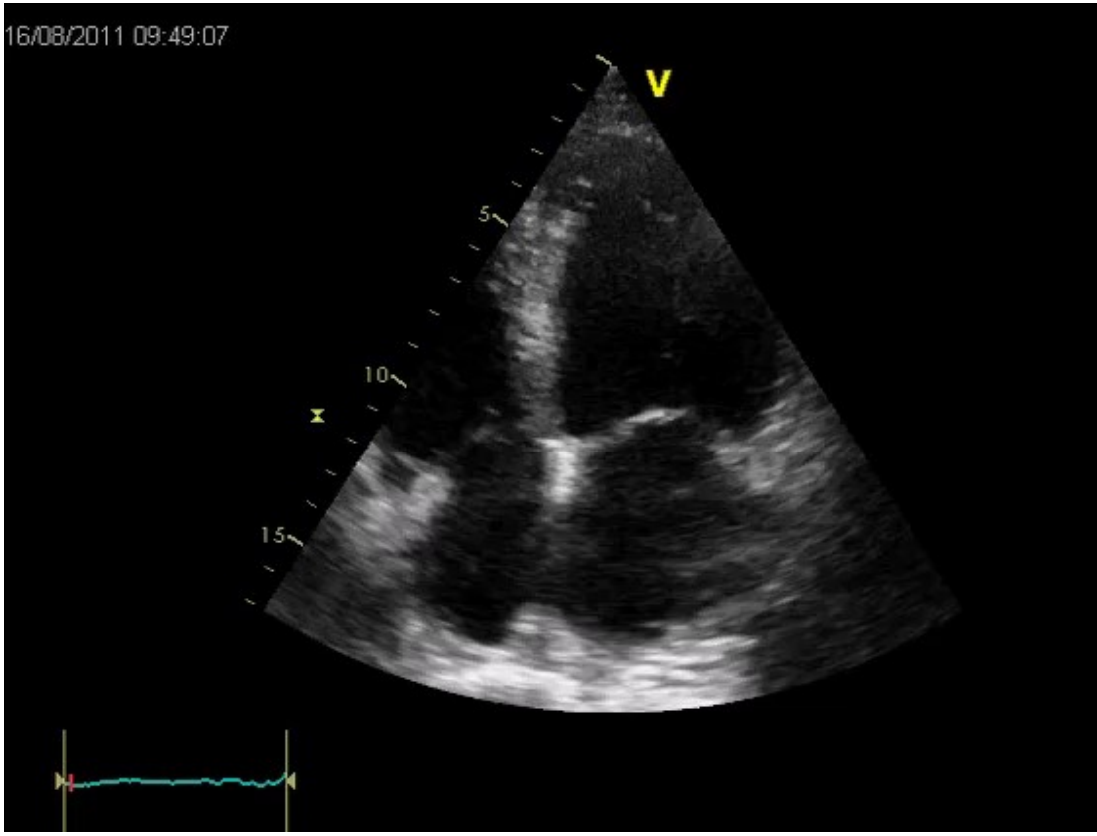




Zdroj: Archiv II. interní klini

ECHO při přijetí a za 30 dní





Zdroj: Archiv II. interní kliniky

Fibrilace síní a ischemická choroba srdeční

Akutní i chronická

Jak se vlastně ICHS a fibrilace síní ovlivňují?

- **Akutní koronární syndrom**
  - Komplikován fibrilací síní u 2 - 23%
  - Trigger primomanifestace fibrilace síní

- **Fibrilace síní**
  - Asociována s rizikem vzniku STEMI i non-STEMI
  - 10-15% nemocných s fibrilací síní podstoupí PCI pro ICHS
  - Fibrilace síní je častým triggerem IM 2. typu

- **Nemocní s fibrilací síní a ICHS**
  - Méně často užívají adekvátní antitrombotickou léčbu
  - Vzájemně ovlivňují prognózu nemocných

CHA_2DS_2VA

CHA_2DS_2-VA component		Definition and comments	Points awarded
C	Chronic heart failure	Symptoms and signs of heart failure (irrespective of LVEF, thus including HFpEF, HFmrEF, and HFrEF), or the presence of asymptomatic LVEF ≤40%.[261–263]	1
H	Hypertension	Resting blood pressure >140/90 mmHg on at least two occasions, or current antihypertensive treatment. The optimal BP target associated with lowest risk of major cardiovascular events is	1
A	Age		2
D	Dia		1
S	Pri thr		2
V	Vas	imaging.[267] OR Peripheral vascular disease, including: intermittent claudication, previous revascularization for PVD, percutaneous or surgical intervention on the abdominal aorta, and complex aortic plaque on imaging (defined as features of mobility, ulceration, pedunculation, or thickness ≥4 mm).[268,269]	1
A	Age 65–74 years	1 point is given for age between 65 and 74 years.	1

However, implementation has varied in terms of gender. Female sex is an age-dependent stroke risk modifier rather than a risk factor per se.[112,256,257] The inclusion of gender complicates clinical practice both for healthcare professionals and patients.[258] It also omits individuals who identify as non-binary, transgender, or are undergoing sex hormone therapy. Previous guidelines from the ESC (and globally) have

ESC guidelines for AFIB 2024. EHJ 2024.

Riziko krvácení

Manage all **modifiable bleeding risk factors** with shared decision-making (Class I)

Hypertension

Optimize blood pressure lowering treatment (Class I)

NSAIDs

Offer alternative analgesia or disease-modifying therapy

Antiplatelet drugs

Do not use antiplatelet therapy beyond 12 months in stable OAC-treated patients with chronic coronary/vascular disease (Class III)

Do not add antiplatelet therapy to OAC to prevent thromboembolic events (Class III) or recurrent stroke (Class III)

DOAC instead of VKA when antiplatelet treatment is needed (Class I)

Alcohol intake

Reduce alcohol to <3 standard drinks per week (Class I)

Other factors

- Consider drug interactions
- Reduce corticosteroid use if possible
- Offer proton pump inhibitors if high GI bleeding risk
- Advise restricting hazardous hobbies/occupations

Unstable/variable INR

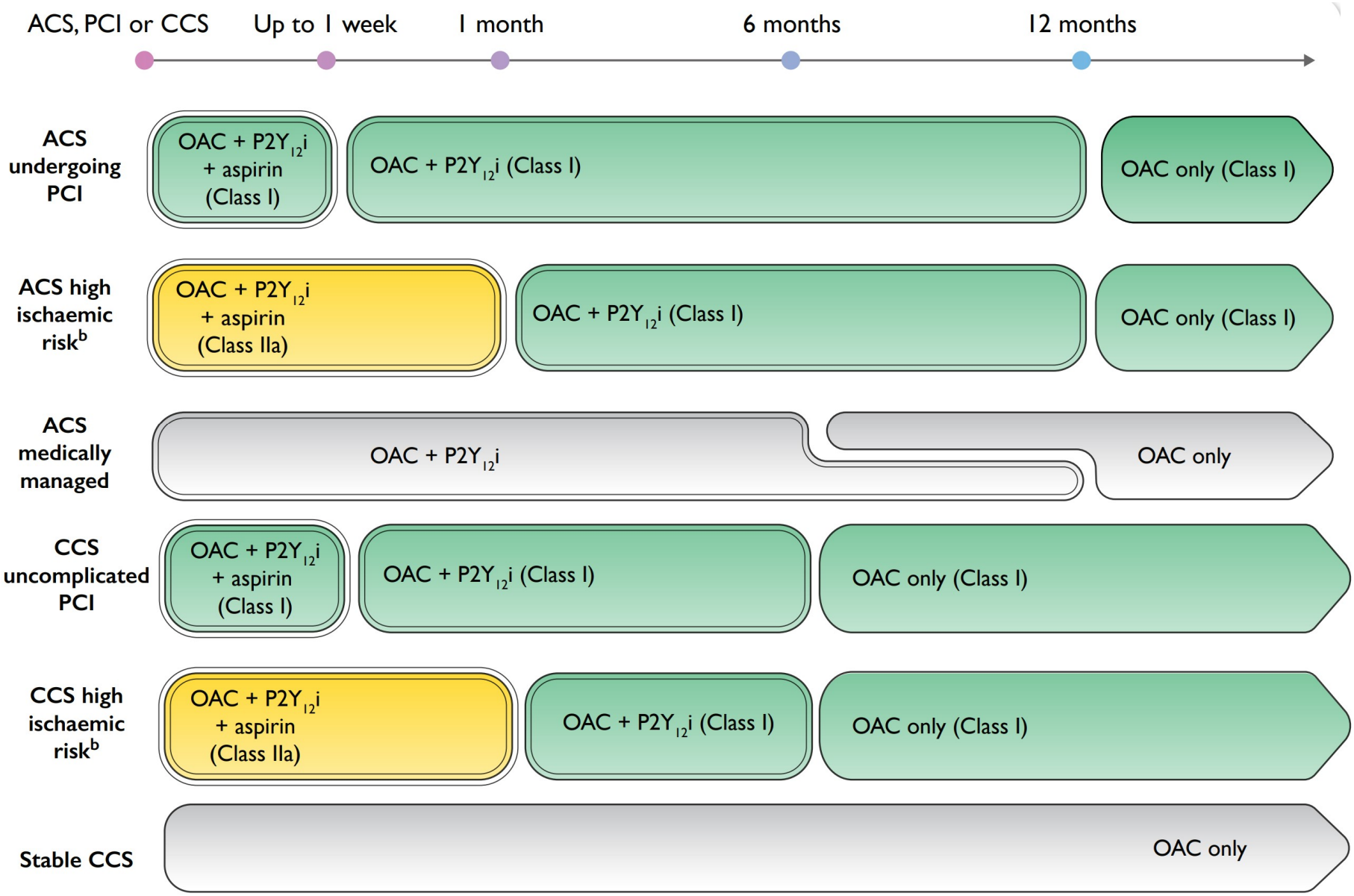
Keep INR 2.0–3.0 (Class I) and TTR >70% (Class IIa)

Switch to DOAC if eligible and failed to maintain TTR on VKA (Class I)

Minimize duration of heparin-bridging therapy

ESC guidelines for AFIB 2024. EHJ 2024. 00

Riziko krvácení



DM

STEMI

Trobóza

Komplexní výkony

Prolongova nestabilní s

dogrel preferovaný.

ESC guidelines for AFIB 2024. EHJ 2024. 00

ntrola srdeční frekvence

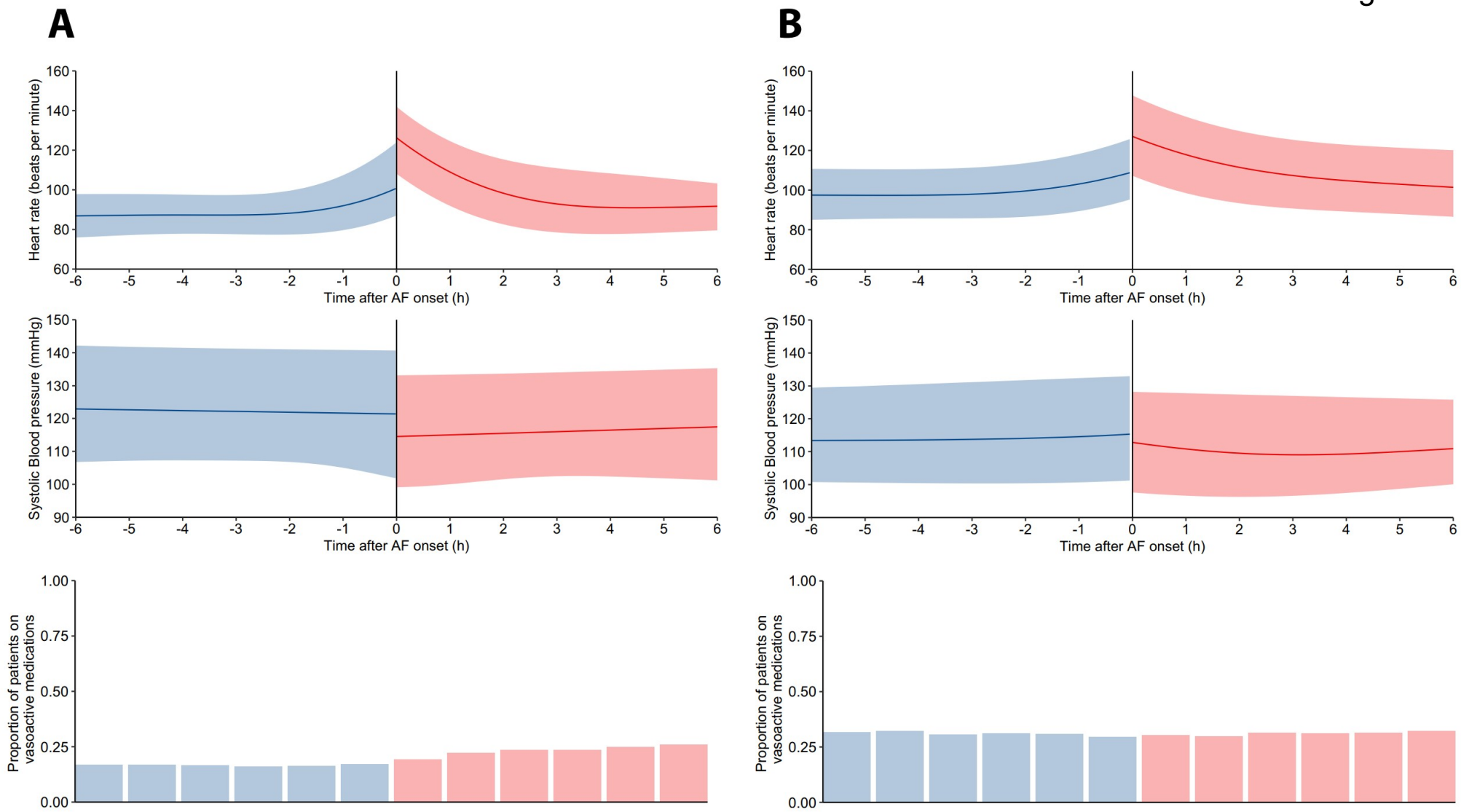
control therapy is recommended in patients AF, as initial therapy in the acute setting, an ct to rhythm control therapies, or as a sole ment strategy to control heart rate and reduce toms.[458–460]	I	B
-blockers, diltiazem, verapamil, or digoxin are mmended as first-choice drugs in patients with nd LVEF >40% to control heart rate and reduce toms.[48,461,462]	I	B
-blockers and/or digoxin are recommended in nts with AF and LVEF ≤40% to control heart and reduce symptoms.[40,185,463–465]	I	B
venous amiodarone, digoxin, esmolol, or olol may be considered in patients with AF who haemodynamic instability or severely depressed to achieve acute control of heart rate.[472,473]	IIb	B
Combination rate control therapy should be considered if a single drug does not control symptoms or heart rate in patients with AF, providing that bradycardia can be avoided, to control heart rate and reduce symptoms.	IIa	
Lenient rate control with a resting heart rate of < 110 b.p.m. should be considered as the initial target for patients with AF, with stricter control reserved for those with continuing AF-related symptoms.[459,460,466]	IIa	
Atrioventricular node ablation in combination with pacemaker implantation should be considered in patients unresponsive to, or ineligible for, intensive rate and rhythm control therapy to control heart rate and reduce symptoms.[467–469]	IIa	
Atrioventricular node ablation combined with cardiac resynchronization therapy should be considered in severely symptomatic patients with permanent AF and at least one hospitalization for HF to reduce symptoms, physical limitations, recurrent HF hospitalization, and mortality.[470,471]	IIa	

ESC guidelines for AFIB 2024. EHJ 2024.

Nestabilní pacient s rychlou FS

Rate control strategie nové FS u pacientů na JIP

Data ze dvou registrů – US a



vá hypotenze u 20-30% pacientů s novou FS.

Bedford JP, et al. Journal of Critical Car

Akutní stav, nestabilní pacient – řešení dle ESC guideline

1. Elektrická kardioverze

– Výhoda – rychlá a účinná

– Nevýhoda – vysoké procento časných relapsů

2. Amiodarone

– Nevýhoda – mírně oddálený účinek

3. Landiolol

– Nevýhoda – pouze rate control

Landiolol

- i.v. betablokátor
- Snižuje komorovou odpověď, nízké rizil prohloubení hypotenze
- Ultra-krátký BB (poločas 4 minuty)
- Vysoká ß1 selektivita (ß1/ ß2 ≈ 250)

Problémem jsou časté a časné recidivy

Spontánní terminace FS u nestabilních pacientů ~ 83% v průběhu 48h

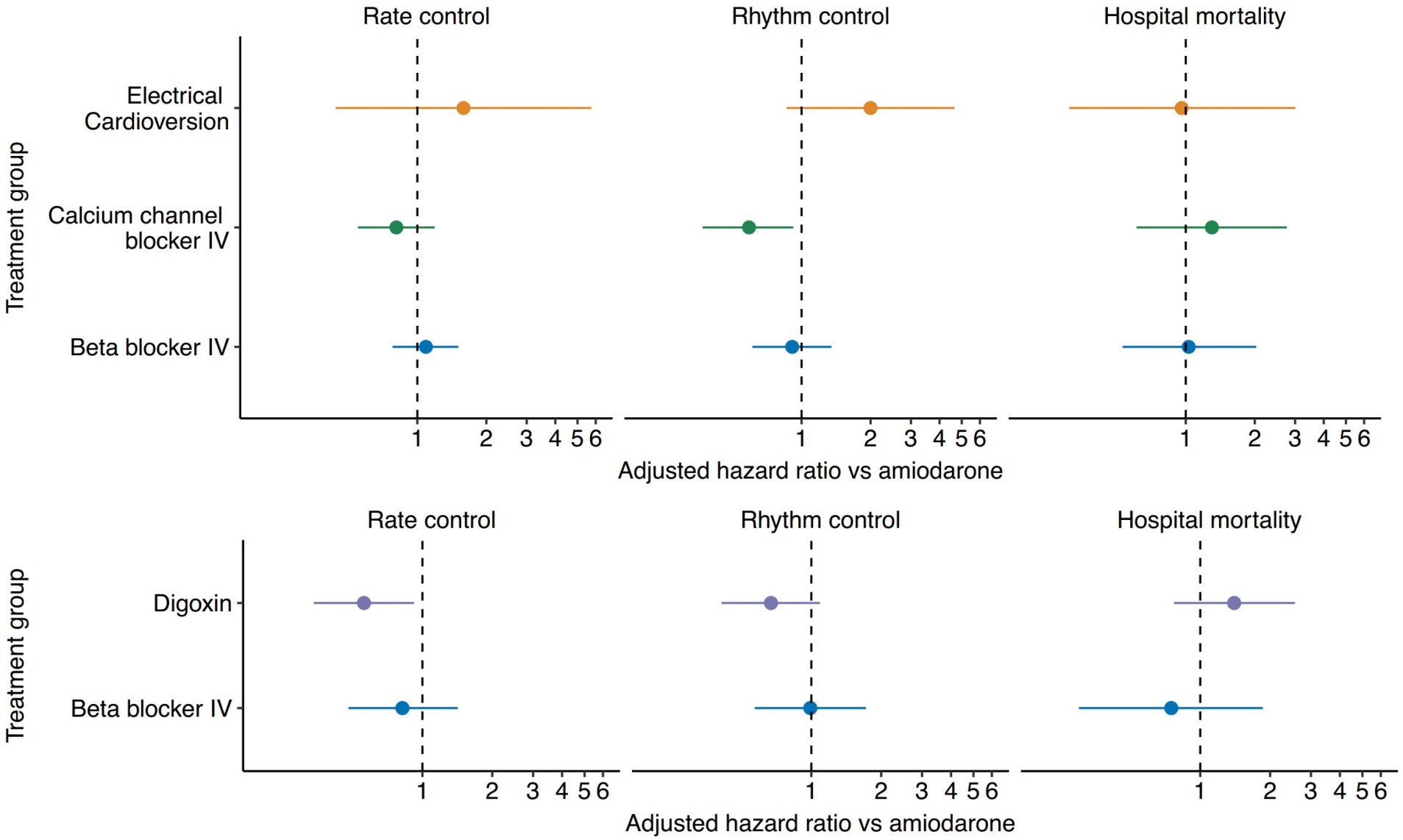
ESC guidelines for AFIB 2024. EHJ 2024. 00:1-101. Shiga T. Eeur Heart J Su

Léky pro rate control strategii I

	Intravenous administration	Usual range for oral maintenance dose	Contraindicated
lockers[b]			
olol	2.5–5 mg bolus over 2 mins; up to 15 mg maximal cumulative dose	25–100 mg twice daily	In case of asthma, non-selective beta-blockers should be avoided. Contraindicated in acute HF and hi severe bronchospasm.
olol XL te)	N/A	50–200 mg once daily	
lol	N/A	1.25–20 mg once daily	
l[c]	N/A	25–100 mg once daily	
	500 µg/kg i.v. bolus over 1 min; followed by 50–300 µg/kg/min	N/A	
l	100 µg/kg i.v. bolus over 1 min; followed by 10–40 µg/kg/min	N/A	
ol	N/A	2.5–10 mg once daily	
lol	N/A	3.125–50 mg twice daily	

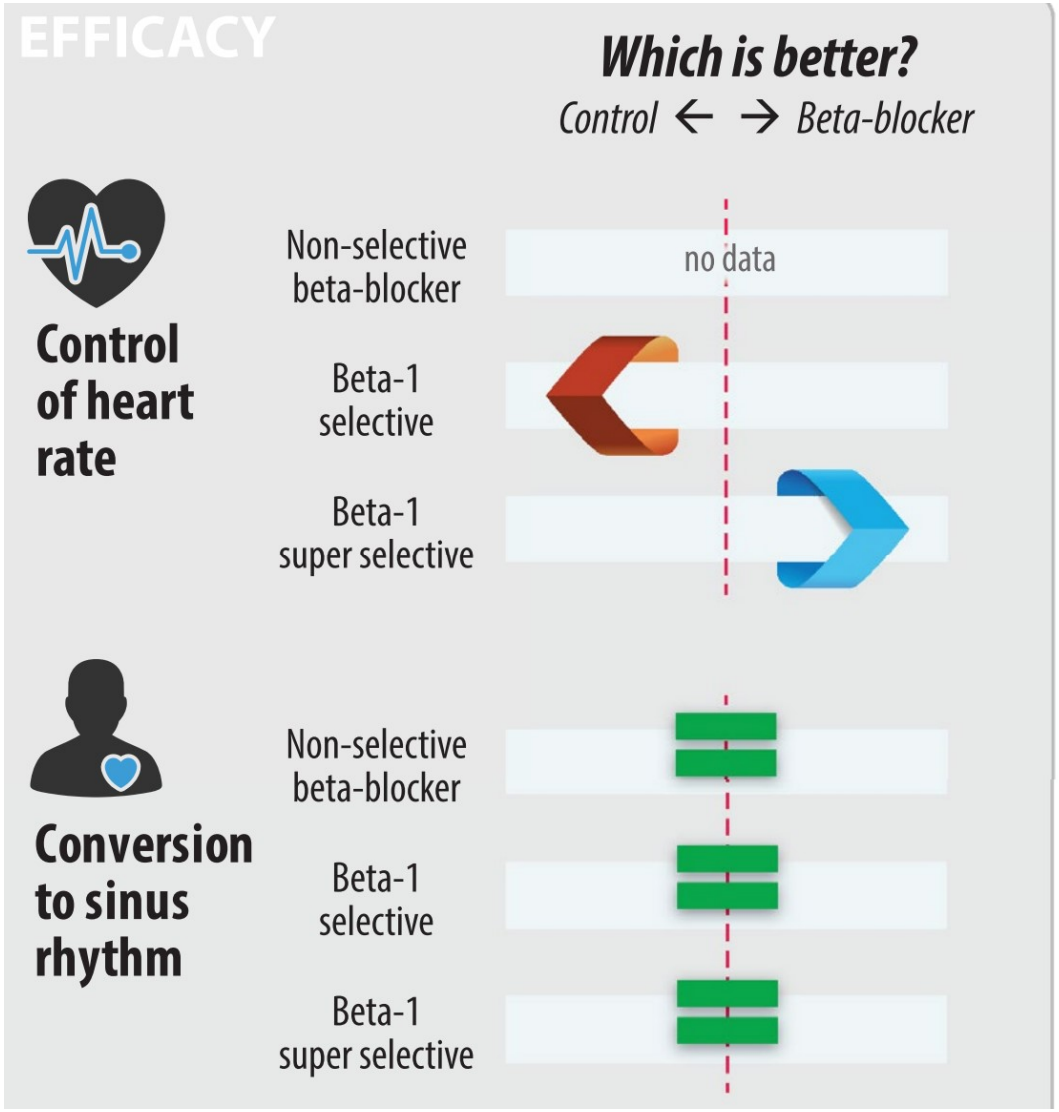
ESC guidelines for AFIB 2024. EHJ 2024.

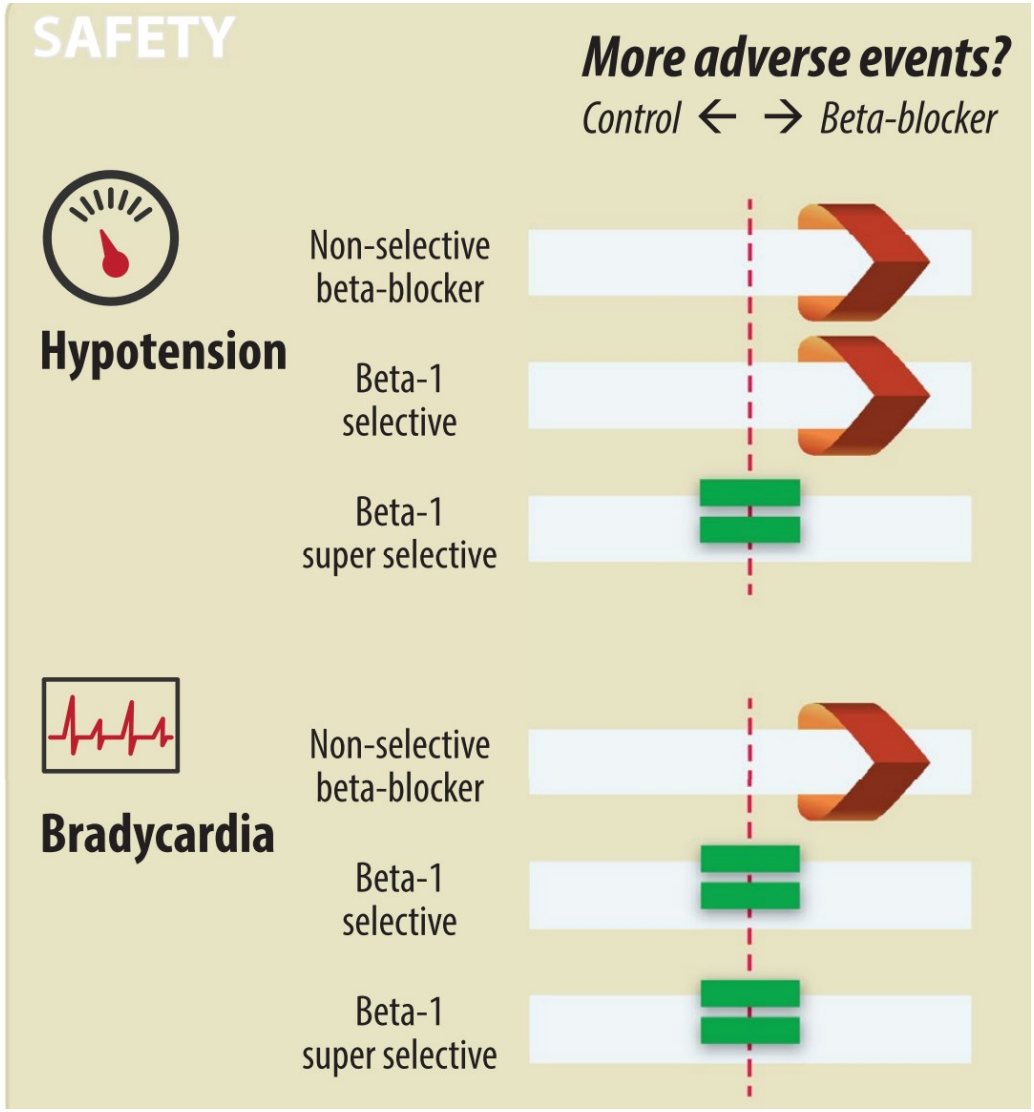
Rate control strategie nové FS u pacientů na JIP



Bedford JP, et al. Journal of Critical Car

Rate control a β1 selektivita u FS





Perrett M, et al. Clin Res Cardio

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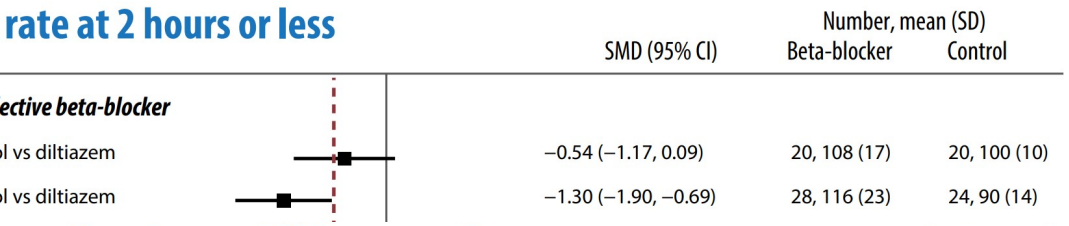
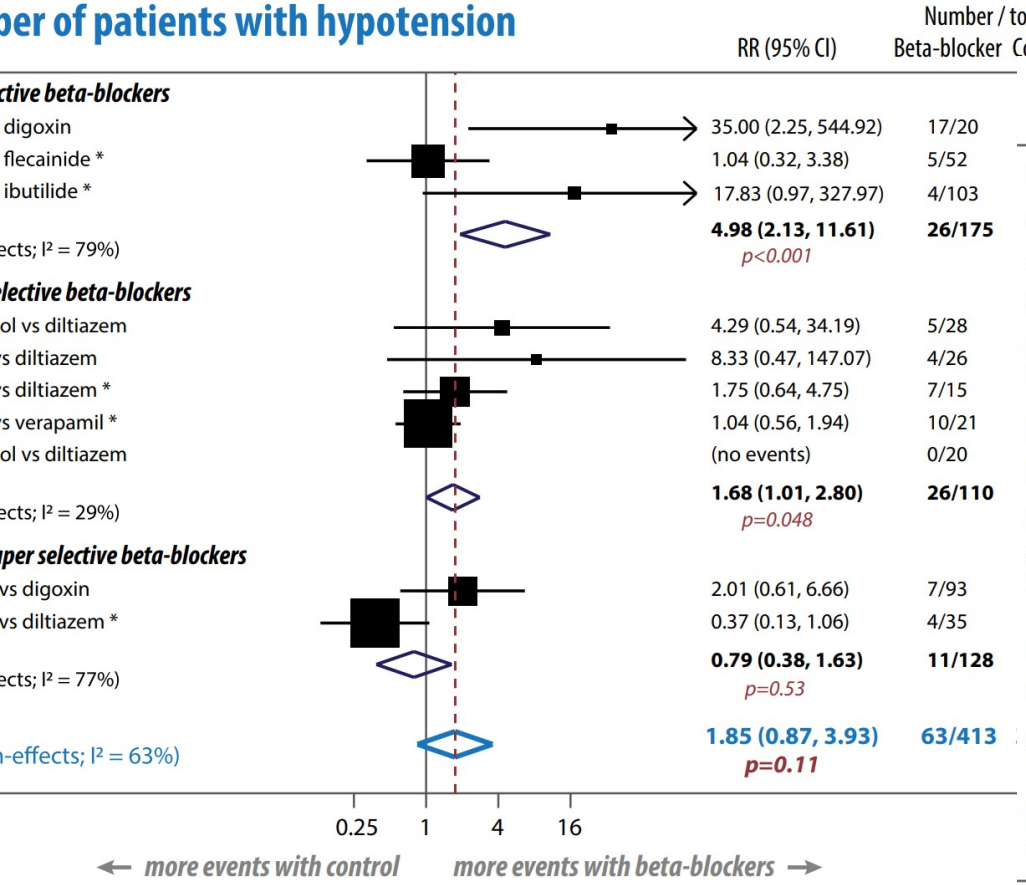
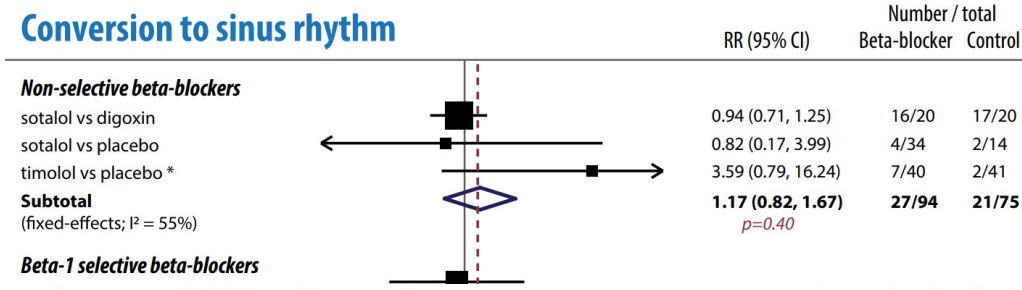
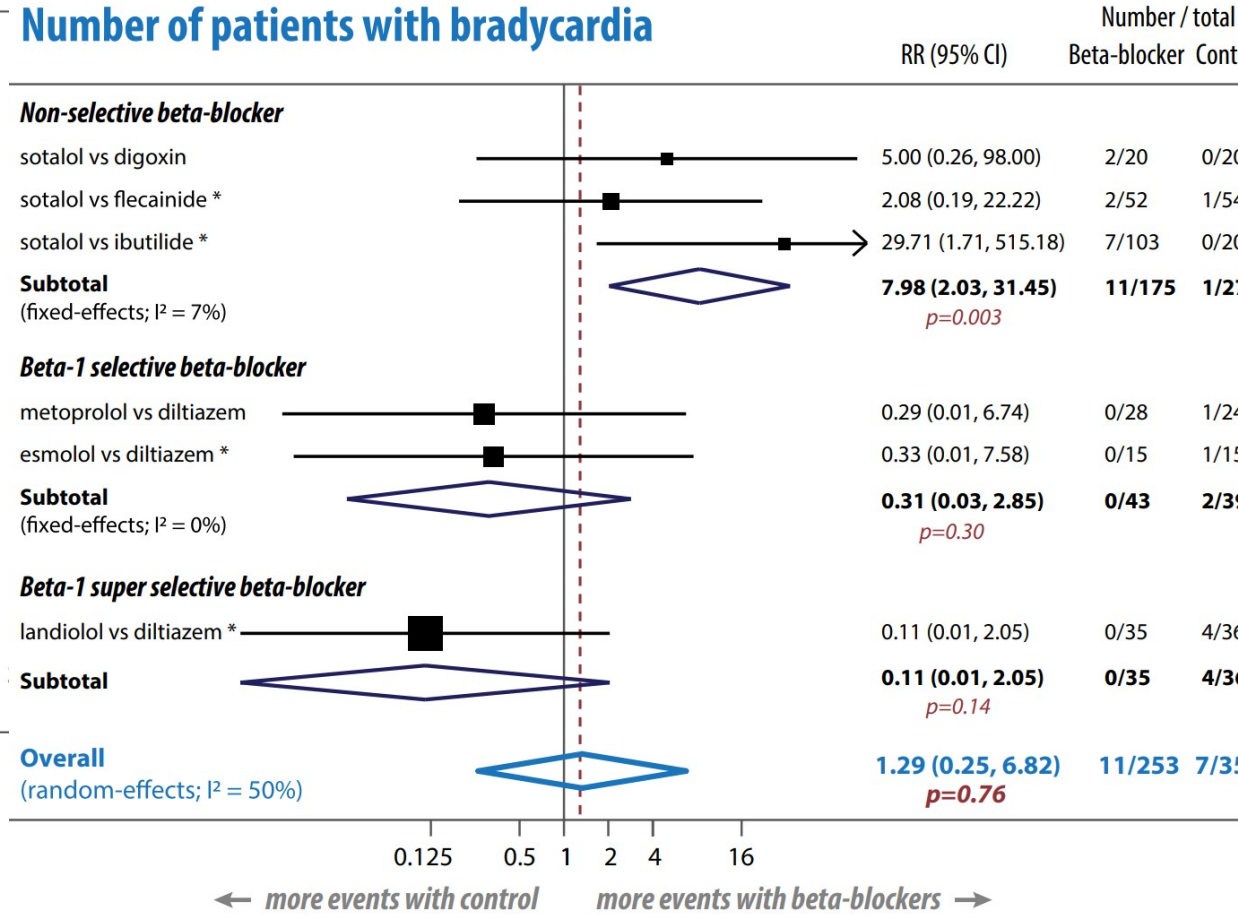


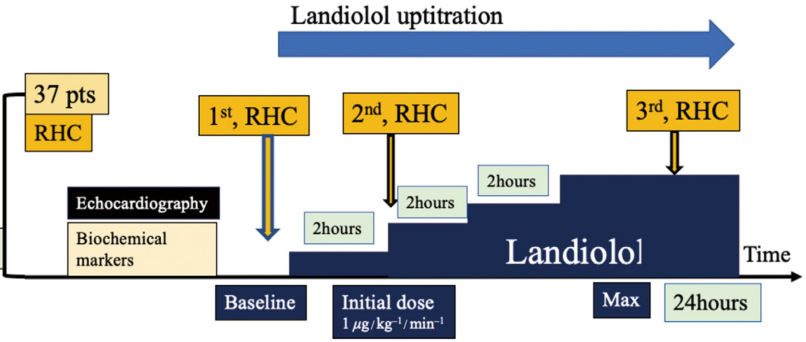






Perrett M, et al. Clin Res Cardio

Landiolol a hemodynamika



rget HR was less than 110bpm
th a 20% decrease in basal HR

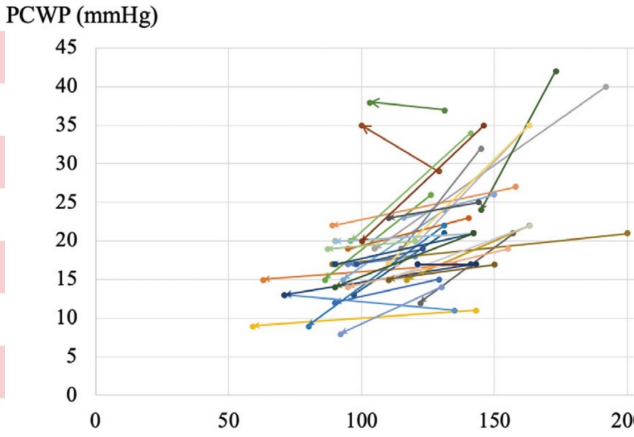
MAE during hospitalization:
- Cardiac death
- HF prolongation
- WRF

Komplikace

	Univariate			Multivariate	
	OR	95% confidence interval	P-value	OR	95% confidence interval
Age	1.023	0.988–1.059	0.194	1.024	0.98–1.072
Gender	1.35	0.589–3.175	0.478		
Mean BP	0.954	0.927–0.976	<0.0001	0.957	0.929–0.981
LVEDVI	1.016	1.001–1.034	0.039	1.022	1.001.043
Log BNP	1.284	0.343–4.954	0.71		

Efekt na hemodynamiku

	Baseline	Initial dose (1 μg/kg⁻¹/min⁻¹)	Maximum dose	P-value†
c BP (mmH	127±21	120±17	116±17	0.06
c BP (mmHg)	83±23	73±15	71±15	0.04
P (mmHg)	96±22	88±15	86±15	0.05
ats/min)	143±17	113±22	97±19	<0.0001
mHg)	13.2±6.7	11.9±6.0	10.1±4.5	0.21
c PA (mmHg)	41.5±10.1	38.3±9.8	35.1±8.7	0.03
c PA (mmHg)	24.5±7.4	22.2±6.8	19.2±5.2	0.004
A (mmHg)	31.1±8.2	28.2±7.6	25.0±5.3	0.004
(mmHg)	23.6±7.8	21.1±7.5	17.3±6.3	0.0008
in)	3.1±1.2	3.2±1.2	3.2±1.0	0.89
in/m²)	1.8±0.6	1.9±0.6	1.9±0.6	0.84



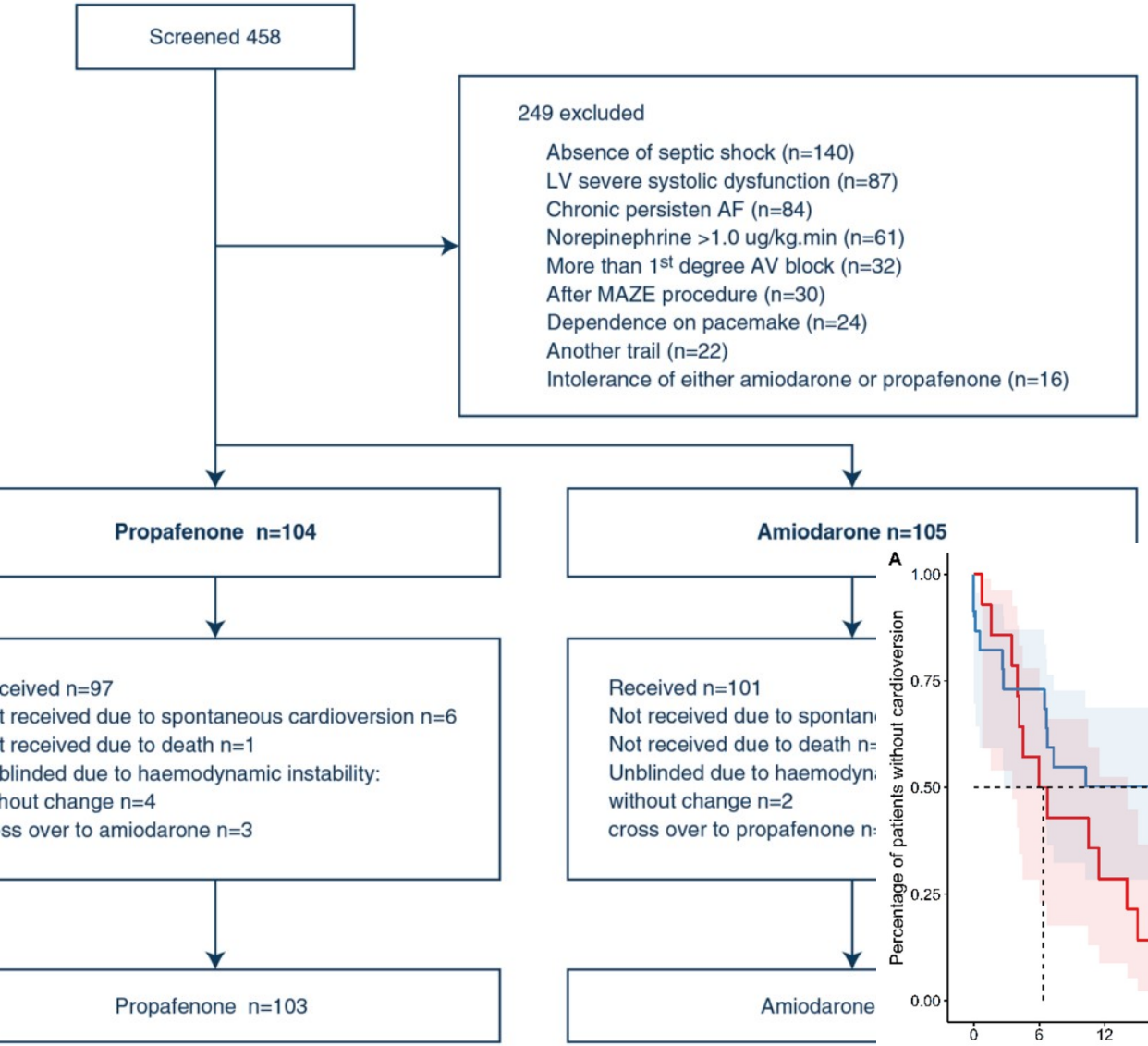
Iwahashi N, et al. Circ Re

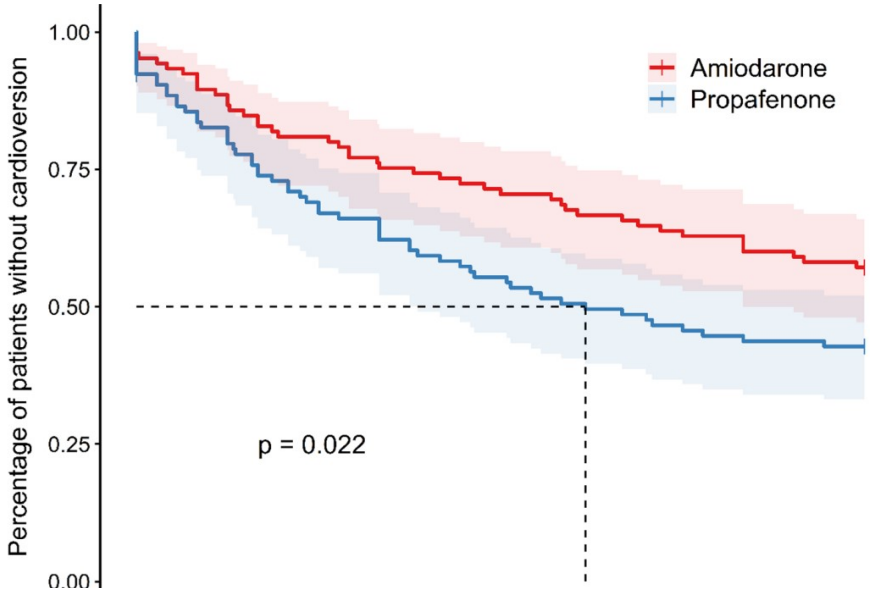
Landiolol a esmolol

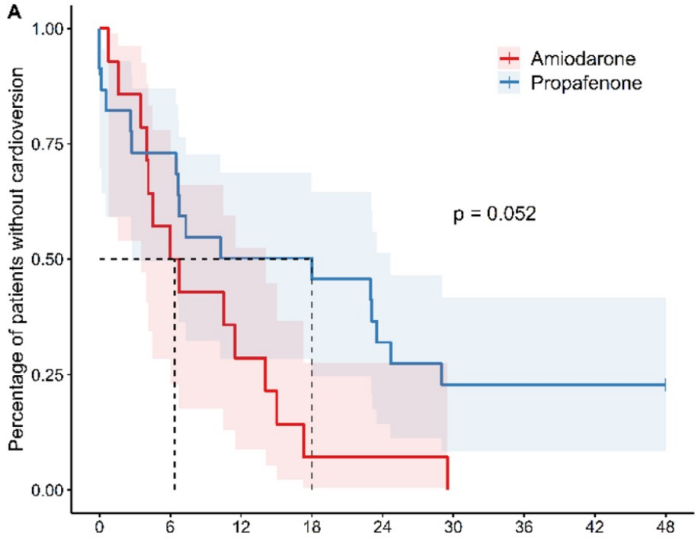
Vlastnost	Landiolol	Esmolol
Selektivita	Vyšší selektivita pro beta-1 receptory	Nižší selektivita pro beta-1 receptory
Nástup účinku	Přibližně 1 minuta	Přibližně 2 minuty
Poločas rozpadu	Přibližně 4 minuty	Přibližně 9 minut
Vedlejší účinky	Nižší riziko hypotenze a bradykardie	Vyšší riziko hypotenze a bradykardie

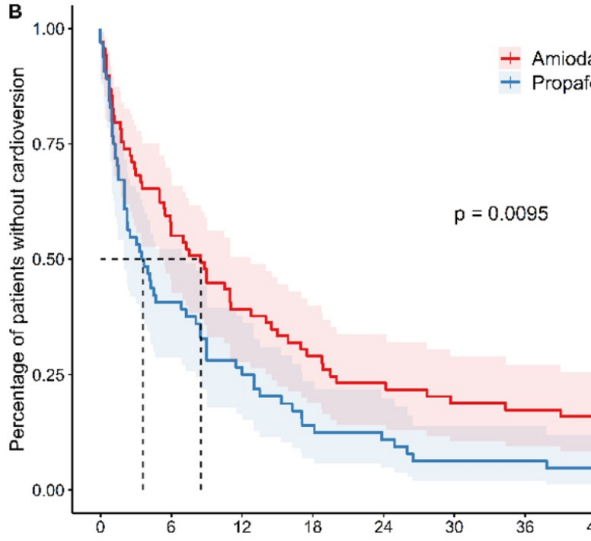
Shiga T. Eur Heart J Suppl 2022. Nasrollahi-Shirazi N, et al. J of Pharmacolog

Propafenone vs amiodarone









Balik M, et al. Intensive Care Med

Co říci závěrem?

- **Fibrilace síní a ICHS**
  - Patofyziologické vazby a společný výskyt
  - Jedna komplikuje druhou a druhá první
  - Problém antitrombotické léčby
  - Volba dlouhodobé rate control léčby dle EF LK

- **Nestabilní pacient s rychlou FS**
  - Elektrická kardioverze vs. farmakologické postupy
  - Antiarytmika s limitacemi
  - Výhoda ultrakrátkých a vysoce selektivních BB

  - **Katetrizační ablace AV junkce (pace and ablate) a selektivní ablace fibrilace síní lze v akutním stavu a na mechanické srdeční podpoře**

Děkuji za pozornost!