

## XXXIII. Výročný sjezd ČKS

# Prevenencia fibrilácie predsiení

Ďakujem za pozvanie



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Stredoslovenský ústav srdcových  
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# Epidemiológia fibrilácie predsiení

Figure 2 (1) Epidemiology of AF: prevalence

 ESC  
European Society  
of Cardiology

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<https://doi.org/10.1093/eurheartj/ehae1195>

**CLINICAL RESEARCH**

### Global burden of atrial fibrillation/atrial flutter and its attributable risk factors from 1990 to 2021

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**Aims**  
To devise effective preventive measures, a profound understanding of the working patterns and trends in atrial fibrillation (AF) and atrial flutter (AFL) burden is pivotal. Our study was designed to quantify the burden and debate the risk factors associated with AF and AFL across 204 countries and territories spanning 1990–2021.

**Methods and results**  
Data pertaining to AF and AFL were sourced from the Global Burden of Disease Study 2021. The burden of AF/AFL was evaluated using metrics such as incidence, disability-adjusted life years (DALYs), deaths, and their corresponding age-standardized rates (ASRs), stratified by age, sex, socio-demographic index (SDI), and human development index (HDI). The estimated annual percentage change was employed to quantify changes in AF/AFL. Population attributable fractions were calculated to determine the proportional contributions of major risk factors to age-standardized AF/AFL deaths. This analysis encompassed the period from 1990 to 2021. Globally, in 2021, there were 4.48 million incident cases (95% uncertainty interval (UI): 3.81–5.20), 8.34 million DALYs (95% UI: 6.97–10.53), and 324 million deaths (95% UI: 62.9–4.37) attributed to AF/AFL. The AF/AFL burden in 2021, as well as its trends from 1990 to 2021, displayed substantial variations based on gender, SDI quartiles, and geographical regions. High systolic blood pressure emerged as the leading contributor to age-standardized AF/AFL incidence, prevalence, deaths, and DALYs, the globally among all preventable risk factors, followed closely by high body mass index.

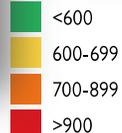
**Conclusion**  
Our study underscores the mounting significance of AF/AFL as a prominent public health concern worldwide, marked by profound regional and national variations. Despite the substantial potential for prevention and management of AF/AFL, there is a pressing imperative to adopt more cost-effective strategies and interventions to target modifiable risk factors, particularly in areas where the burden of AF/AFL is high or escalating.

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**GLOBAL PREVALENCE OF AF**  
(globally 43.6 million individuals had prevalent AF/AFL in 2016)

This study offers a comprehensive epidemiological analysis of AF/AFL's global incidence, prevalence, mortality, and DALYs. Our results show AF/AFL is a major global health issue, with 1.37-fold prevalence and 1.24-fold incidence increases over 31 years. In 2021, there were 4.48 million new cases, 52.55 million prevalent cases, 338 947 deaths, and 8 358 894 DALYs. Despite declining ASRs, absolute cases doubled

Age-standardized prevalence rates of atrial fibrillation per 100000



# Predikcia „vývoja“ fibrilácie predsiení

- **1 z 3 má alebo bude mať FP („šanca“ je 1:2)**

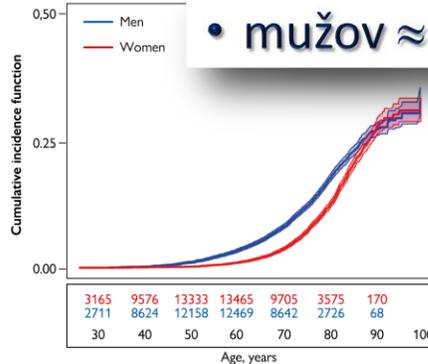
**LIFETIME RISK for AF  
1 in 3 individuals**



of European ancestry  
at index age of 55 years  
37.0% (34.3% to 39.6%)

**AF is more common in males**

Cumulative incidence curves and 95% CIs  
for AF in women and men with death as a competing risk

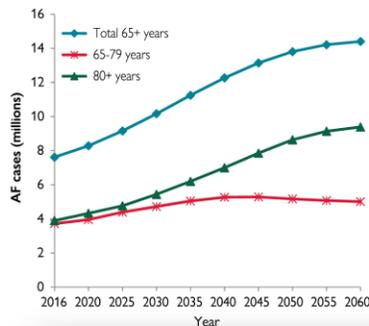


• mužov ≈ žien



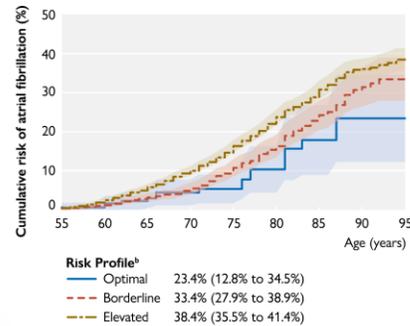
**Figure 2 (2)**  
**Epidemiology of AF:  
lifetime risk and  
projected rise in the  
incidence and**

**Projected increase in AF prevalence  
among elderly in EU 2016-2060**



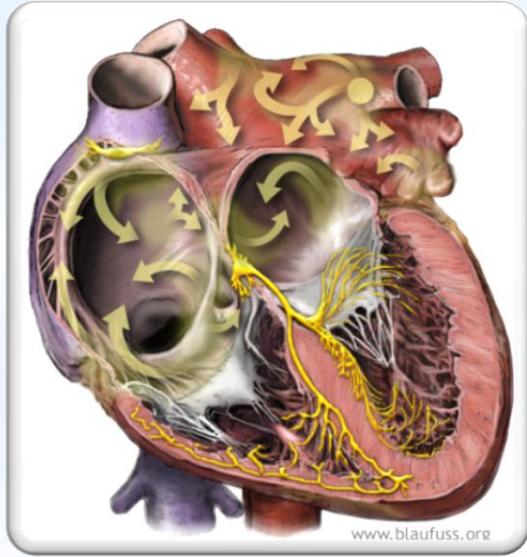
• > 80 rokov

**Lifetime risk of AF increases with  
increasing risk factor burden<sup>a</sup>**



- starnutie populácie
- úspešnejšia liečba IM a SZ
- komorbidity:
  - hypertenzia
  - metabolický sy.
  - obezita

# Klinické riziká fibrilácie predsiení



Clinical Presentation	AF-related OUTCOMES		
	AF-Related Outcome	Frequency in AF	Mechanism(s)
<p> Asymptomatic or Silent (!)</p>	<p> Death</p>	1.5 - 3.5 fold increase	Excess mortality related to: <ul style="list-style-type: none"> <li>• HF, comorbidities</li> <li>• Stroke</li> </ul>
<p> Symptomatic</p> <p>Palpitations, dyspnoea, fatigue, Chest tightness/pain, poor effort tolerance, dizziness, syncope, disordered sleep, etc.</p>	<p> Stroke</p>	20-30% of all ischaemic strokes, 10% of cryptogenic strokes	<ul style="list-style-type: none"> <li>• Cardioembolic, or</li> <li>• Related to comorbid vascular atheroma</li> </ul>
<p><b>Haemodynamically unstable</b></p> <ul style="list-style-type: none"> <li>• Syncope</li> <li>• Symptomatic hypotension</li> <li>• Acute HF, pulmonary oedema</li> <li>• Ongoing myocardial ischaemia</li> <li>• Cardiogenic shock</li> </ul>	<p> LV dysfunction / Heart failure</p>	In 20-30% of AF patients	<ul style="list-style-type: none"> <li>• Excessive ventricular rate</li> <li>• Irregular ventricular contractions</li> <li>• A primary underlying cause of AF</li> </ul>
<p><b>Haemodynamically stable</b></p>	<p> Cognitive decline / Vascular dementia</p>	HR 1.4 / 1.6 (irrespective of stroke history)	<ul style="list-style-type: none"> <li>• Brain white matter lesions, inflammation</li> <li>• Hypoperfusion,</li> <li>• Micro-embolism</li> </ul>
	<p> Depression</p>	Depression in 16-20% (even suicidal ideation)	<ul style="list-style-type: none"> <li>• Severe symptoms and decreased QoL</li> <li>• Drug side effects</li> </ul>
	<p> Impaired quality of life</p>	>60% of patients	<ul style="list-style-type: none"> <li>• Related to AF burden, comorbidities, psychological functioning and medication</li> <li>• Distressed personality type</li> </ul>
	<p> Hospitalizations</p>	10-40% annual hospitalization rate	<ul style="list-style-type: none"> <li>• AF management, related to HF, MI or AF related symptoms</li> <li>• Treatment-associated complications</li> </ul>

- ↑ mortalitu (SZ, NCMP)
- ↑ riziko NCMP
- ↑ riziko srdcového zlyhávania
- ↑ riziko demencie a ↓ kognitívne funkcie
- ↑ riziko depresie
- ↓ kvalitu života
- ↑ hospitalizácie

**Figure 4** Clinical presentation of AF and AF-related outcomes.<sup>10,31,74–140</sup> AF = atrial fibrillation; HF = heart failure; HR = Hazard Ratio; LV = left ventricle; MI = myocardial infarction; QoL = quality of life. Patients with AF may have various symptoms,<sup>92,108,109,128,131</sup> but 50–87% are initially asymptomatic,<sup>7,5,82,88,111,117,120,125,127</sup> with possibly a less favourable prognosis.<sup>79,82,87,88,117,119,127,134,139</sup> First-onset AF symptoms are less well studied,<sup>92,105,108,109,127</sup> may change with treatment,<sup>119</sup> and AF recurrences are commonly asymptomatic.<sup>113</sup> **Stroke/systolic embolism:** annual AF-related stroke risk in AF patients depends on comorbidities.<sup>78,84,85,91,106,112</sup> Cardioembolic strokes associated with AF are usually severe, highly recurrent, often fatal, or with permanent disability.<sup>10,83,115</sup> In a population-based registry, patients with new-onset AF also had increased rates of systemic embolism.<sup>89</sup>

# Prevenca fibrilácie predsiení

**primárna  
prevencia**

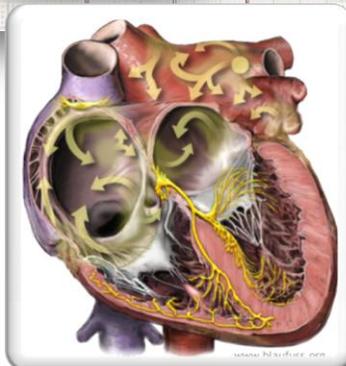
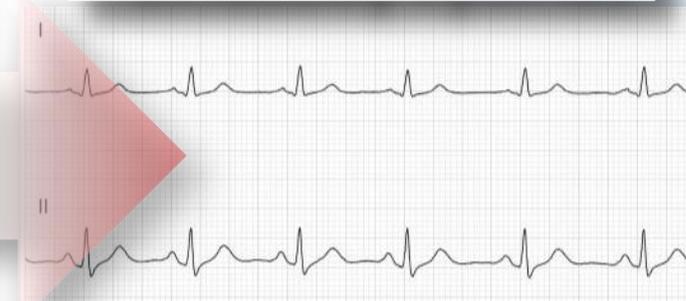
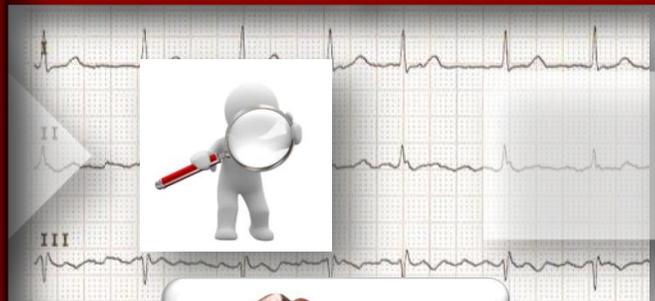
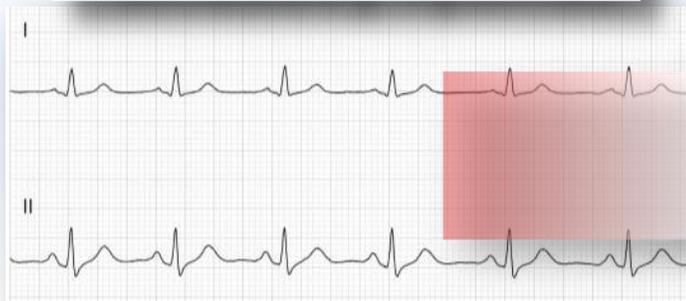


**sekundárna  
prevencia**

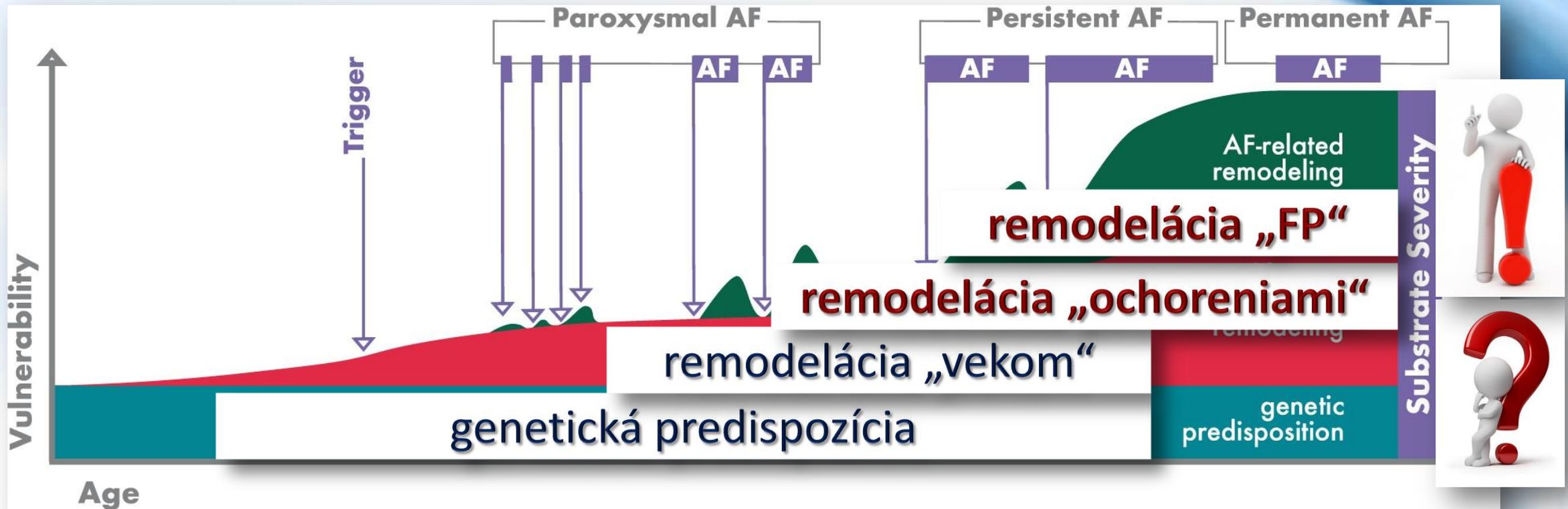
**sínusový rytmus**

**fibrilácia predsiení**

**sínusový rytmus**



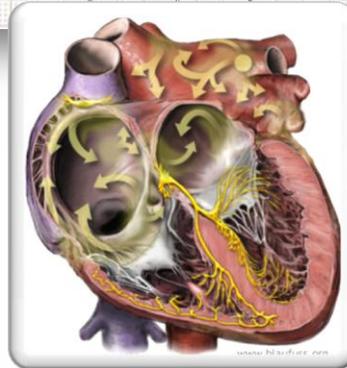
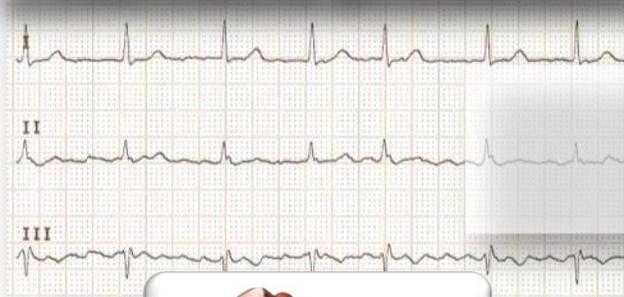
# Patofyziológia arytmogénneho substrátu FP



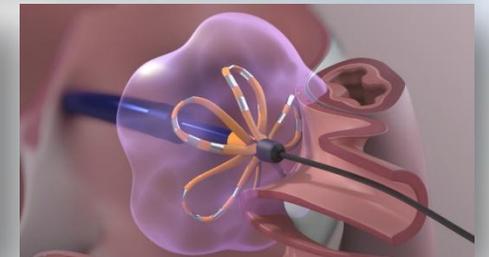
# Prevenca fibrilácie predsiení

sekundárna  
prevencia

fibrilácia predsiení

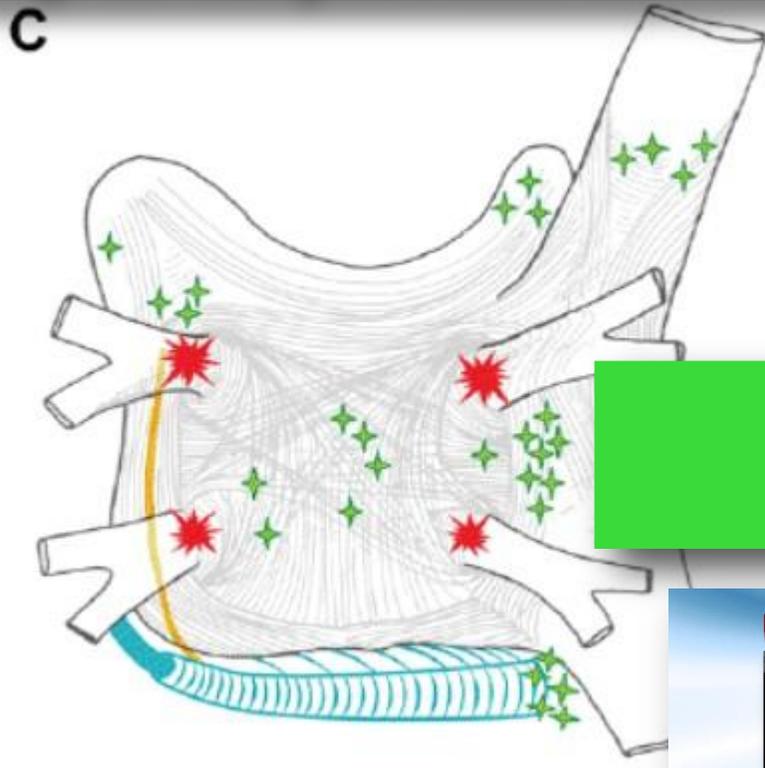


sínusový rytmus

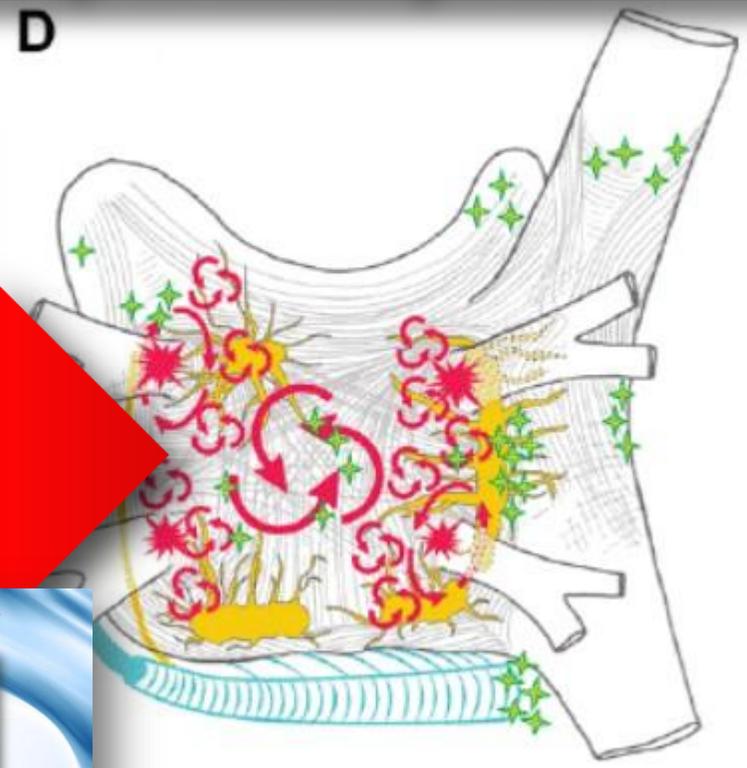


# Patofyziológia fibrilácia predsiení

**paroxysmálna FP**



**perzistujúca FP**



**liečba**

**AH**

**SZ**

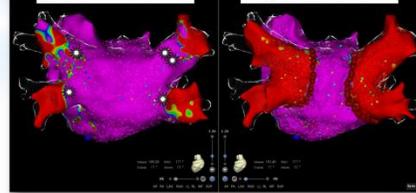
**obezity**

**ABL**

**Katétrová ablácia fibrilácie predsiení**

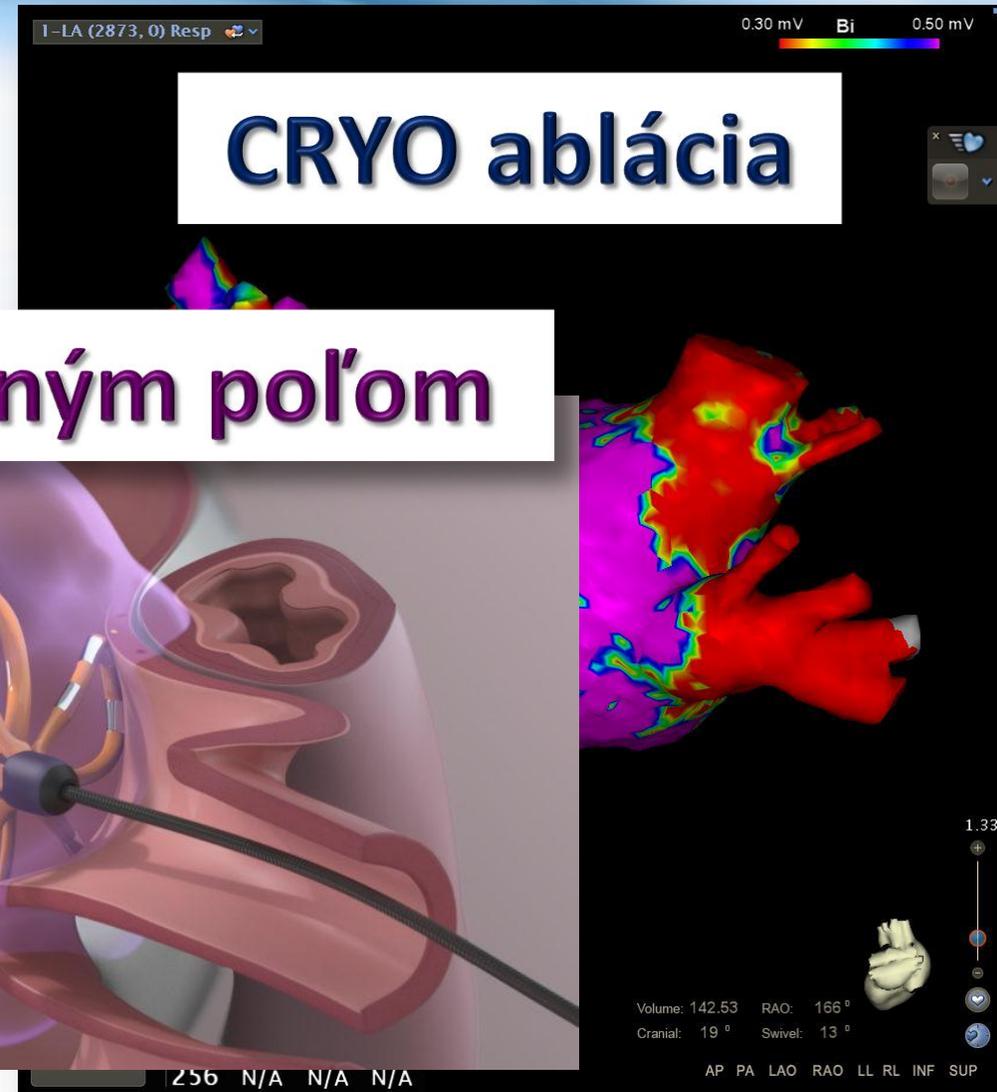
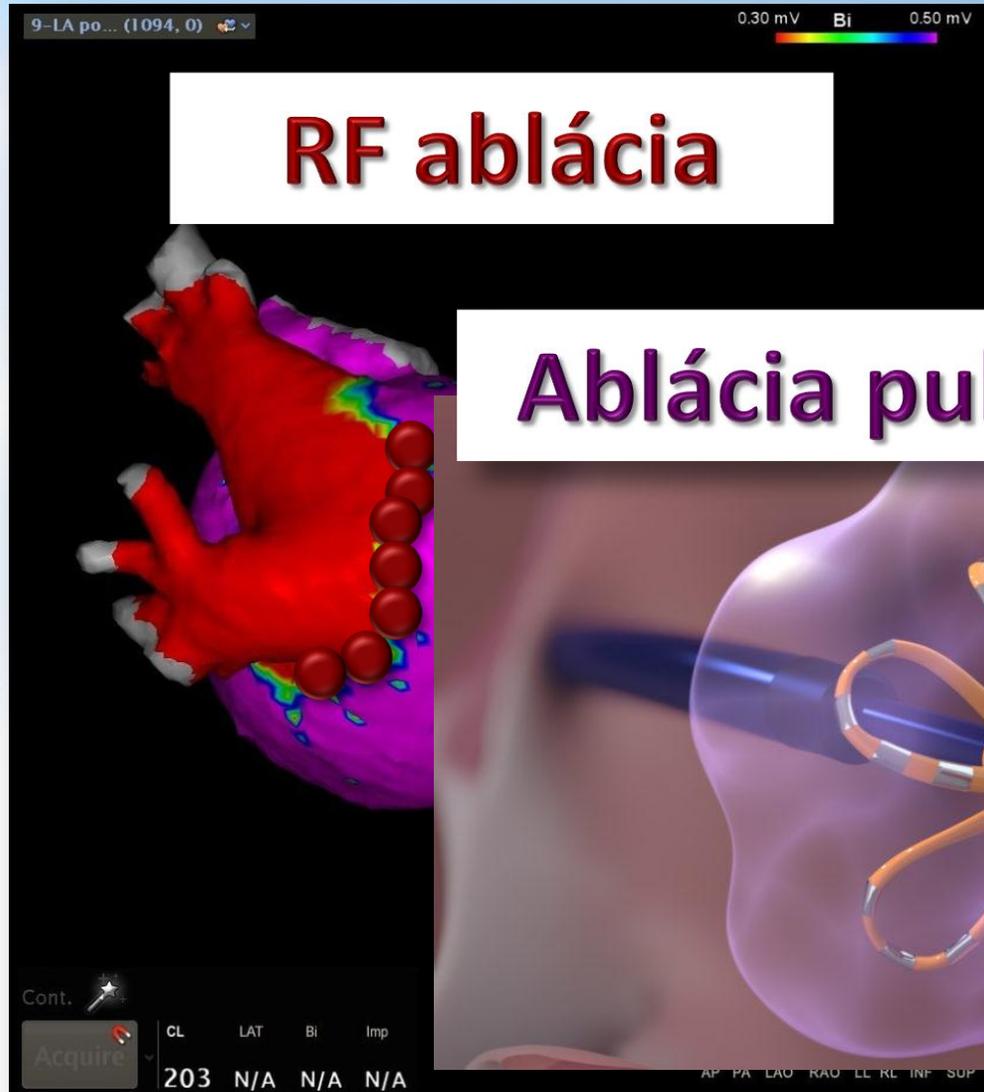
**pred abláciou**

**po ablácii**

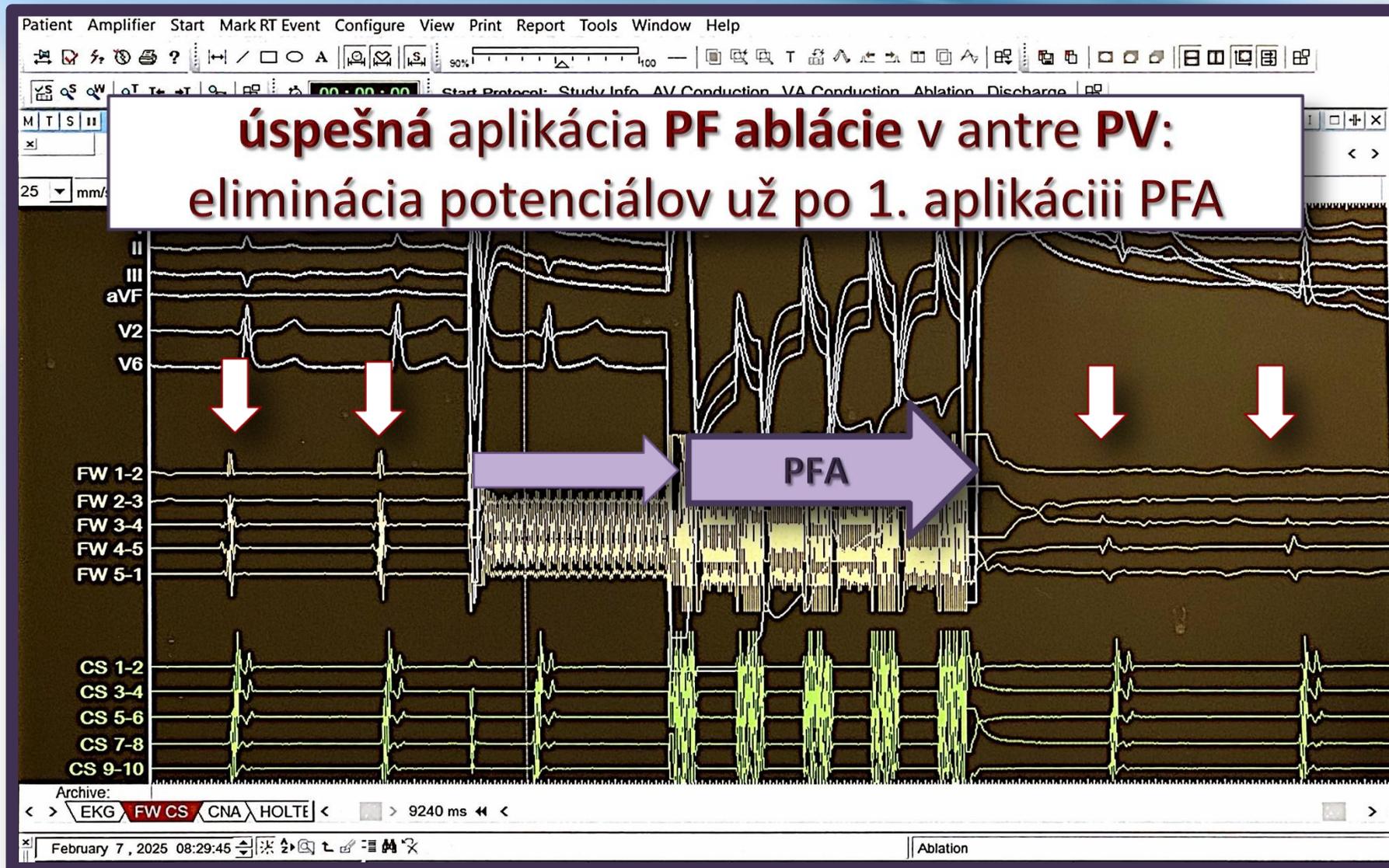


obrazná dokumentácia OŠK, arytmií SZOCH, a.s. Banská Bystrica

# Katétrová ablácia fibrilácie predsiení

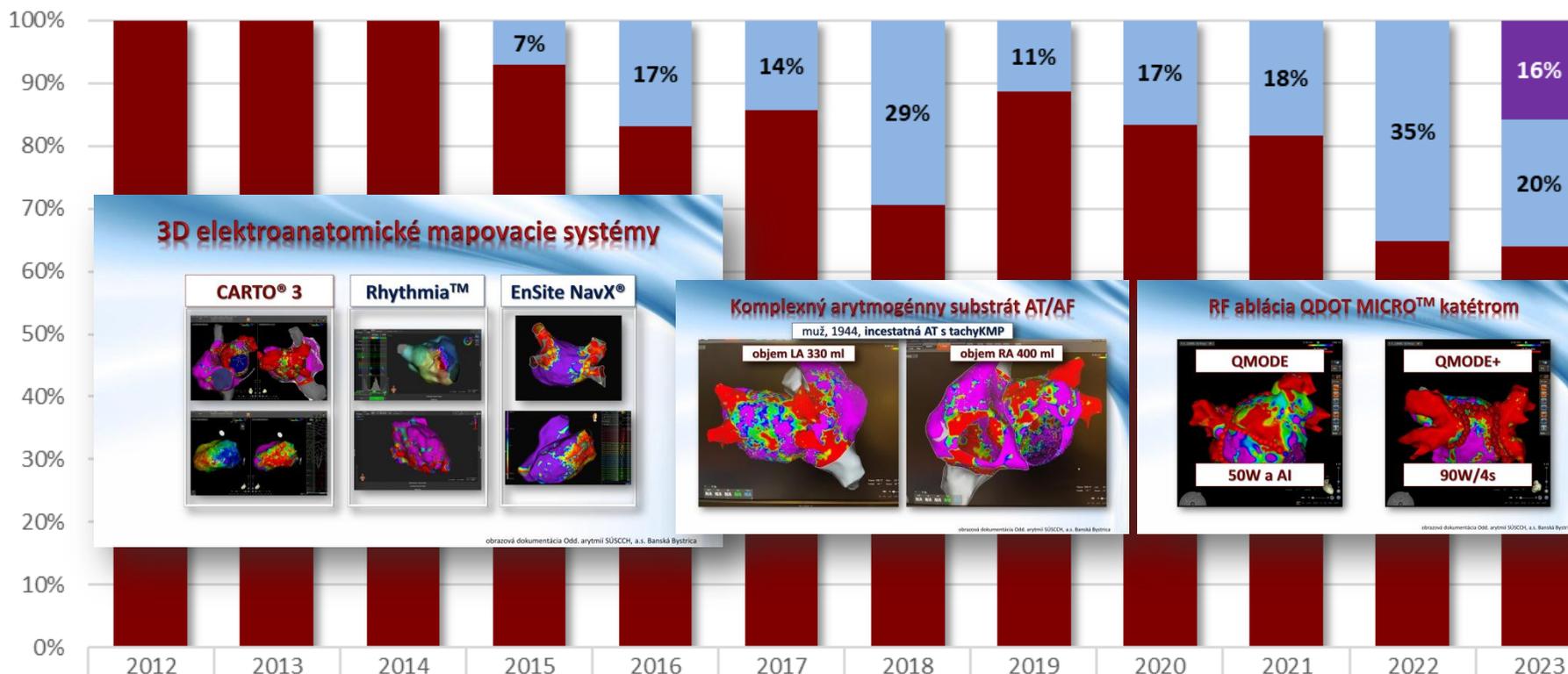


# FARAPULSE™ prvý PF ablačný systém: EPS



# Podiel typov ablácií FP v SÚSCCH BB ➡ 2024

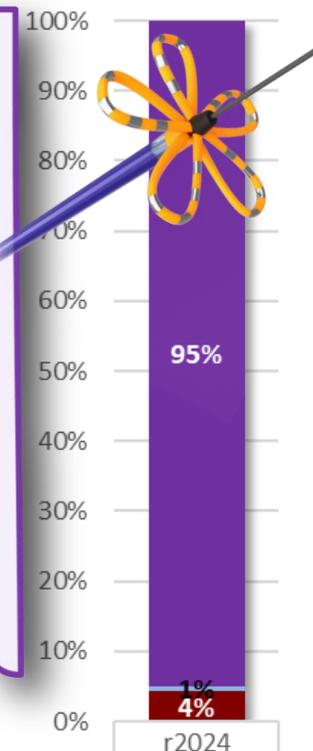
## Katétrové ablácie FP v SÚSCCH BB podľa typu ABL v rokoch



PF ablácia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%
CRYO	0%	0%	0%	7%	17%	14%	29%	11%	17%	18%	35%	20%
RF ablácia	100%	100%	100%	93%	83%	86%	71%	89%	83%	82%	65%	64%

2024

PFA

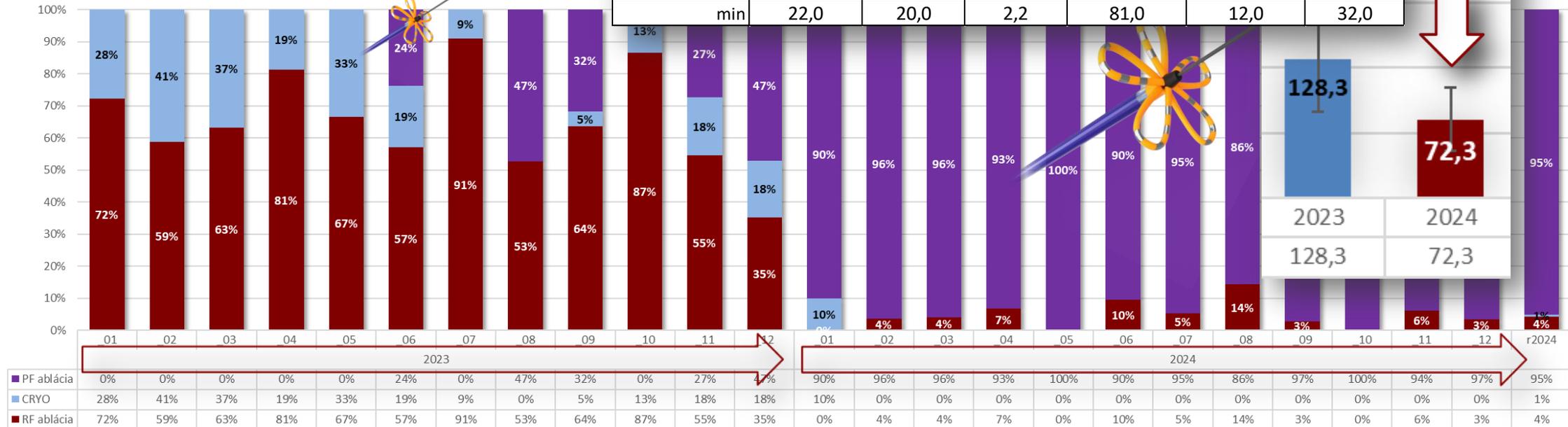


PF ablácia	95%
CRYO	1%
RF ablácia	4%

# Podiel typov ablácií FP v SÚSCCH BB 2024

PF ablácie fibrilácie predsiení v SÚSCCH BB						n = 322
n = 322	Výkon čas	IPV čas	RTG čas	RTG dávka	čas v LA	APL
priem.	70,7	48,4	10,8	937,5	38,1	74,2
SD	27,7	15,9	4,6	872,6	15,0	25,0
medián	65,5	46,0	10,0	668,7	36,0	70,0
max	220,0	111,0	26,9	5881,8	94,0	156,0
min	22,0	20,0	2,2	81,0	12,0	32,0

Katétrové ablácie FP



# Vývoj katéetrových ablácií FP v SÚSCCH BB

## Počet ablácií FP v SÚSCCH BB podľa rokov

1 638

**Prvých 100 PF ablácií fibrilácie predsiení**  
Pulsed Field Ablation (FARAPULSE™)  
v SÚSCCH Banská Bystrica

15.6.2023 ... 20.12.2023 ... 27.3.2024

**Ďalšie míľniky katéetrovej ablácie fibrilácie predsiení**  
Odd. arytmií SÚSCCH Banská Bystrica (09/2024):

Počet katéetrových ablácií FP v SÚSCCH BB

1 500 - september 2024  
1 000 - máj 2023

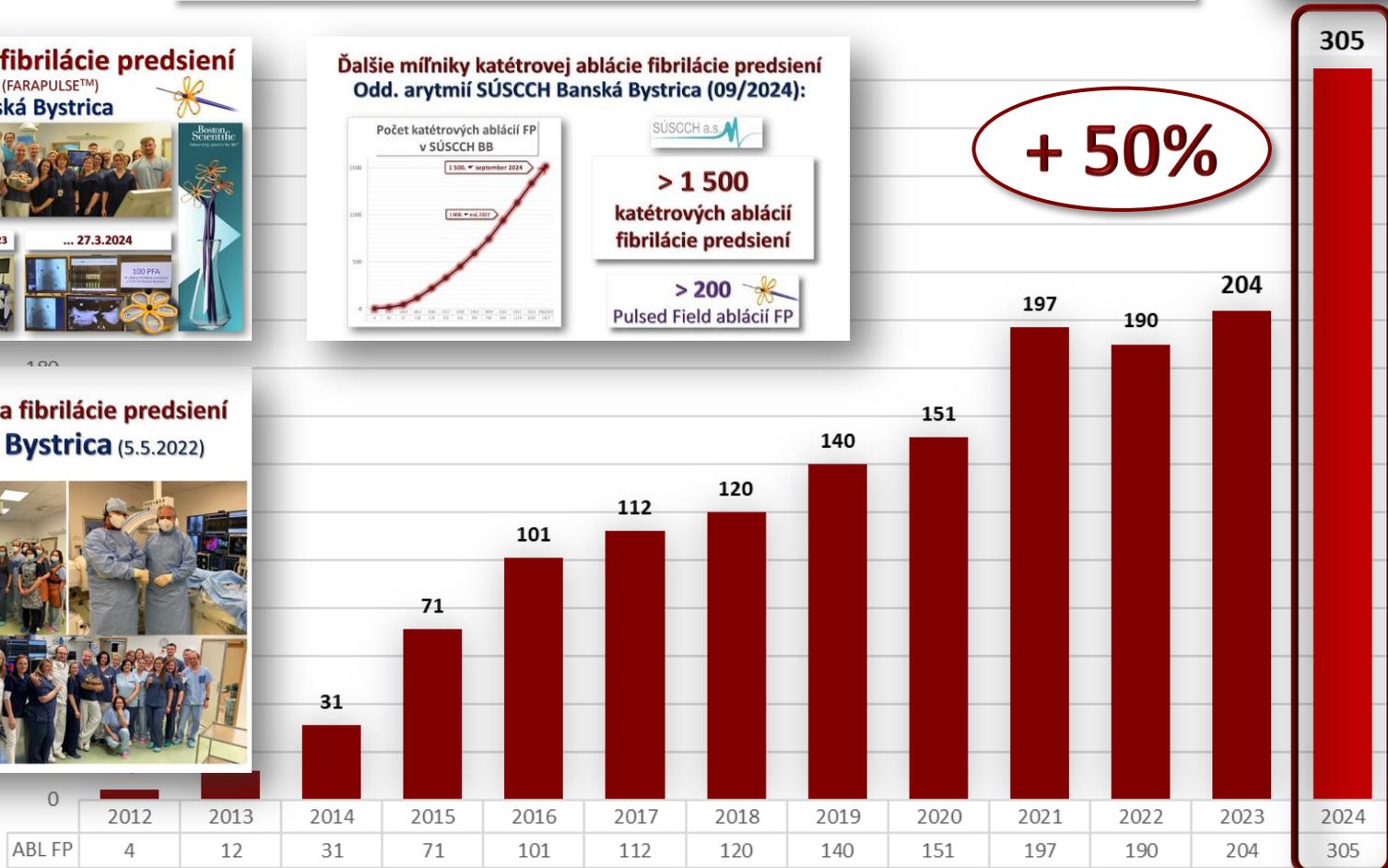
SÚSCCH a.s.

**> 1 500**  
katéetrových ablácií fibrilácie predsiení

**> 200**  
Pulsed Field ablácií FP

+ 50%

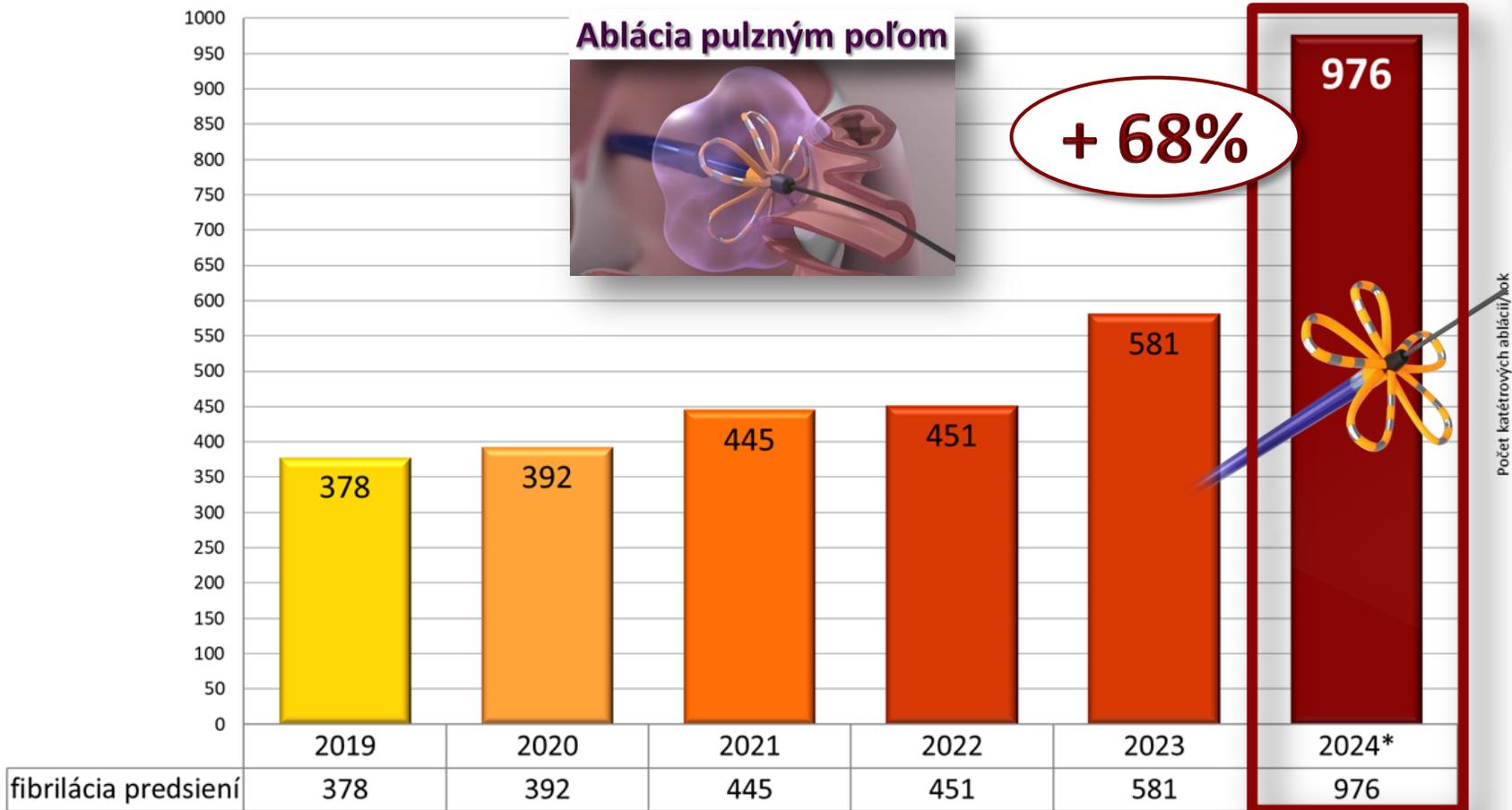
**1000. katéetrová ablácia fibrilácie predsiení**  
v SÚSCCH Banská Bystrica (5.5.2022)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ABL FP	4	12	31	71	101	112	120	140	151	197	190	204	305

# Vývoj katétrových ablácií FP na Slovensku

## Katétrové ablácie fibrilácie predsiení v SR

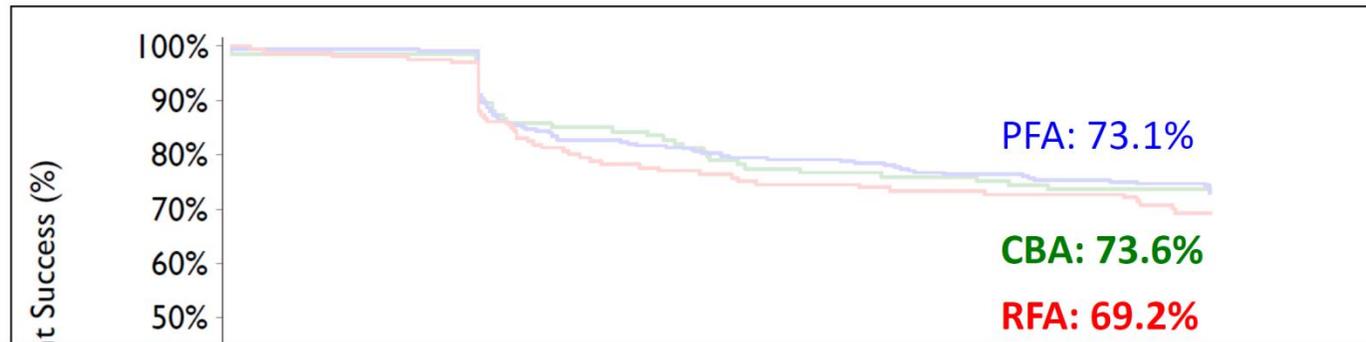


**ablačné  
centrá SR**

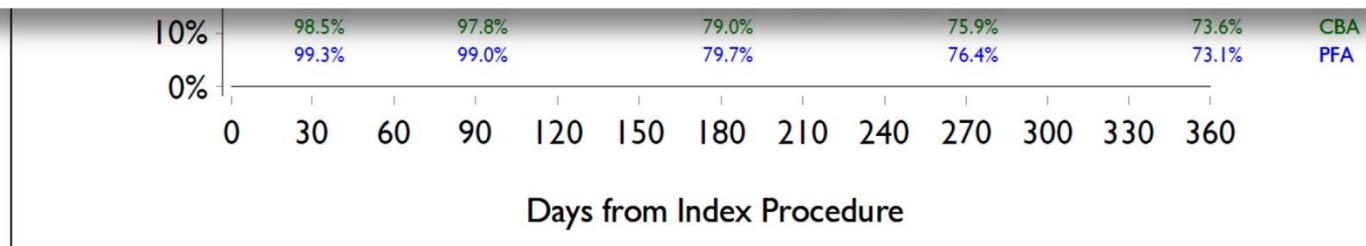
\*predbežné výsledky registra SlovAblo 2024, SASA

# ADVENT: PFA vs. RF/CRYO ?

## 1-Year Effectiveness by Ablation Modality

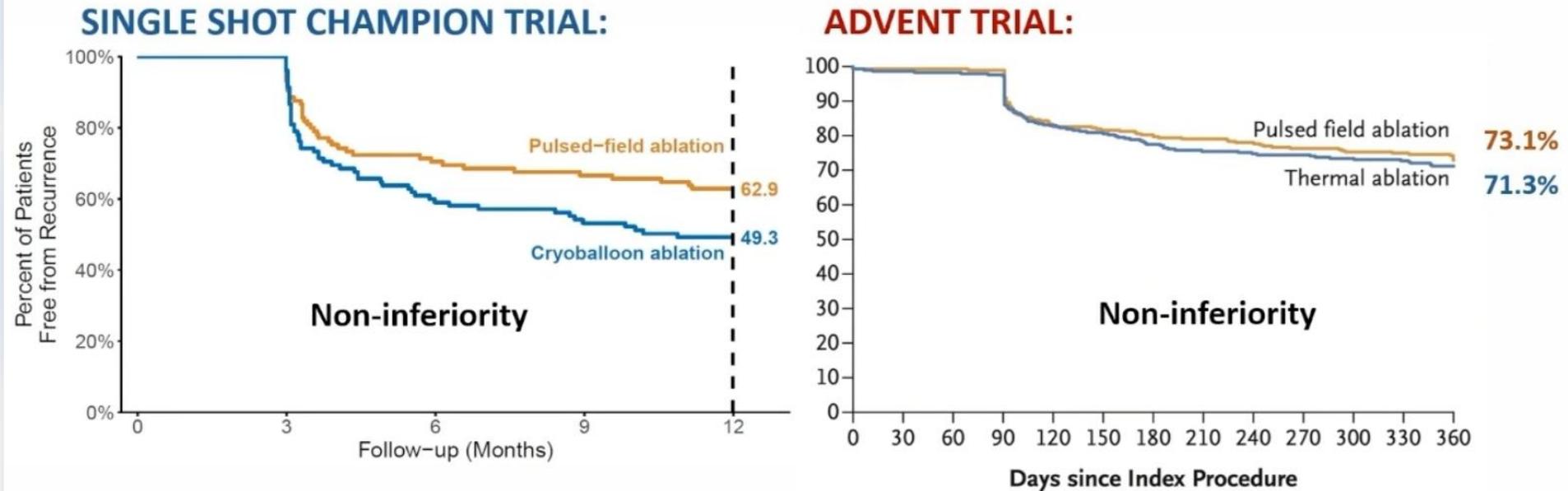


**klinické efektivity IPV je porovnatelná**



# SINGLE SHOT CHAMPION: PFA vs. CRYO

## Primary Outcome



### SINGLE SHOT vs. ADVENT TRIALS:

Continuous monitoring vs. intermittent monitoring for 1° outcome

# Perspektívy PF ablácie

terapeutický cieľ: **AF burden**

- 10% záťaž FP ➡ ↑ o 9% srdcové zlyhávanie
- 10% záťaž FP ➡ ↑ o 5% celkovú mortalitu

○ PFA only  
○ PFA/RF togglin

# „Dostupné“ perspektívy PF ablácie

## VariPulse™

Own the field with CARTO



Johnson&Johnson  
MedTech

## PulseSelect™

Medtronic

PulseSelect™  
Pulsed Field Ablation  
(PFA) System



## VOLT™



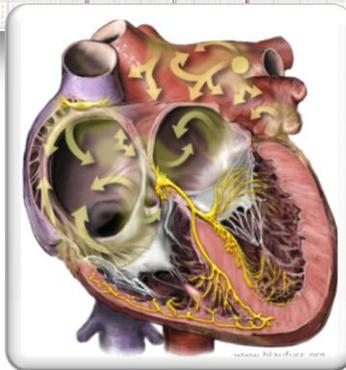
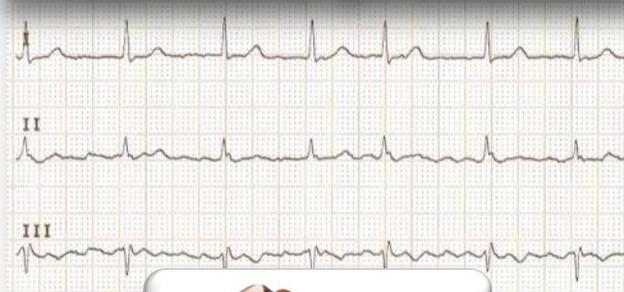
**Každý z PFA systémov je jedinečný**

**Detekcia (včasná)**

**fibrilácie predsiení**



**fibrilácia predsiení**



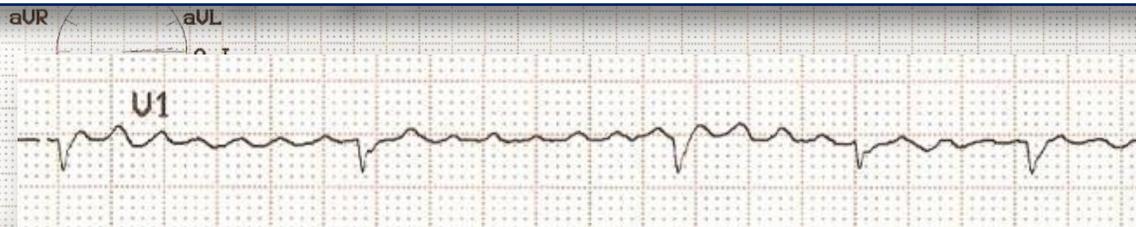
# EKG

## Definícia fibrilácie predsiení

# EKG

- fibrilácia predsiení s primeraným prevodom na komory

PQ	:	(316)	ms
P	:	(98)	ms
RR/PP	:	932 / 930	ms
P/QRS/T	:	/ 0/ -5	Stup
QTD/QTcBD	:	58 / 60	ms
Sokolow	:		mV
NK	:	5	



fibro-flutter

- fibrilačné vlny = absencia P vln

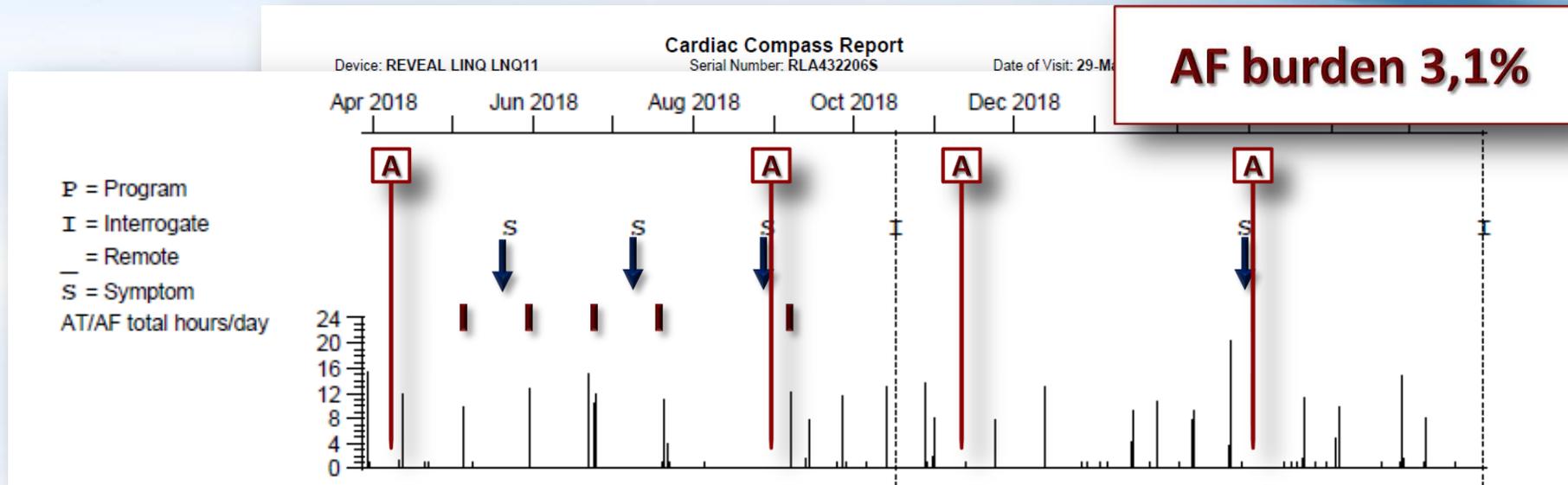
- nepravidelné RR intervaly

trvanie minimálne **10** sekúnd



# EKG

# Paroxyzmálna fibrilácia predsiení



**symptómy  $\neq$  parox. FP**

**amb. EKG = SR (bez FP)**

# Metódy detekcie fibrilácie predsiení

## PPG zariadenia

### PPG-Based Devices

- Apple iPhone
- Apple Watch
- Biostrap PurePulse
- Garmin VivoSmart 3
- Huawei smarthphone
- Samsung Galaxy
- Oura ring

## EKG zariadenia

### ECG-Based Devices

#### Blended Technologies

- Apple Watch
- Samsung Simband2
- FitBit Sense

#### Handheld devices

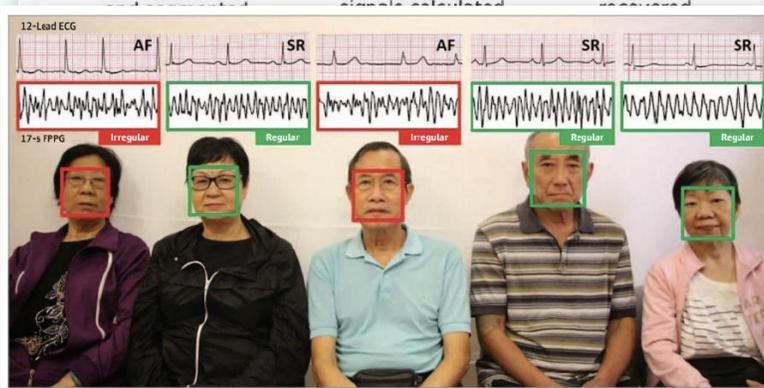
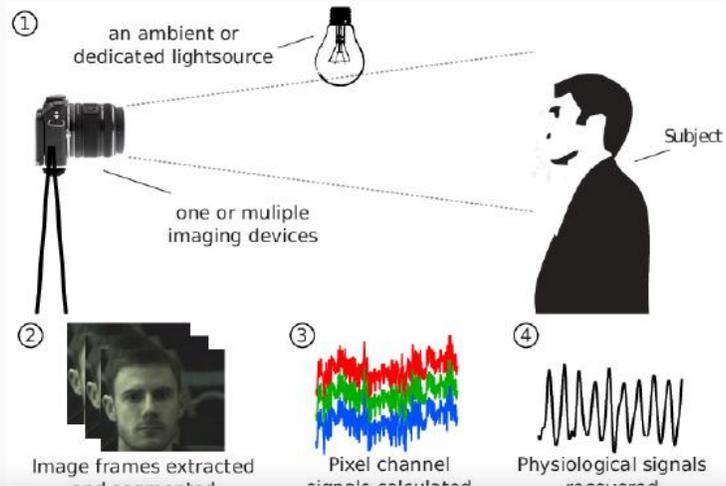
- MyDiagnostick
- Zenicor
- Omron HCG-801
- Merlin ECG recorder

#### Smartphone-based devices

- AliveCor Kardia Monitor  
AliveCor KardiaMobile

# Inovatívne metódy detekcie FP

## PPG kamery



## SMART vozíky



## SMART toalety

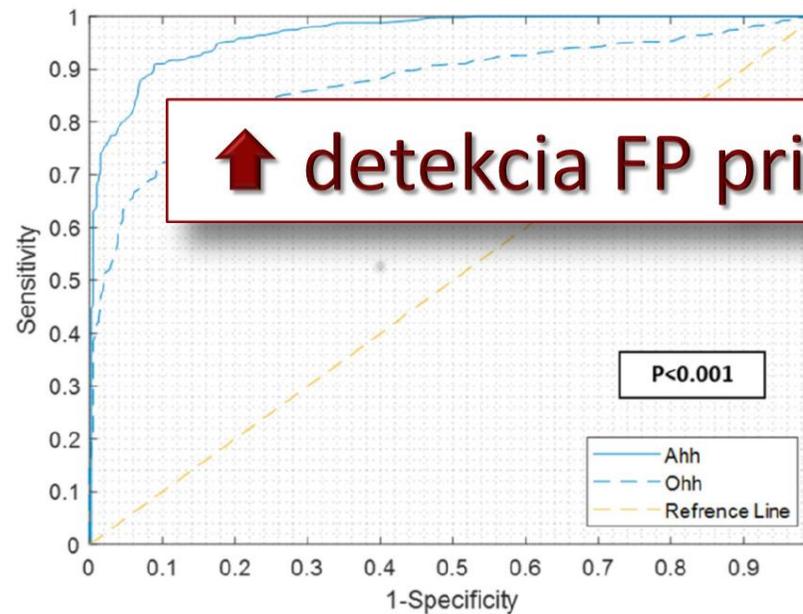
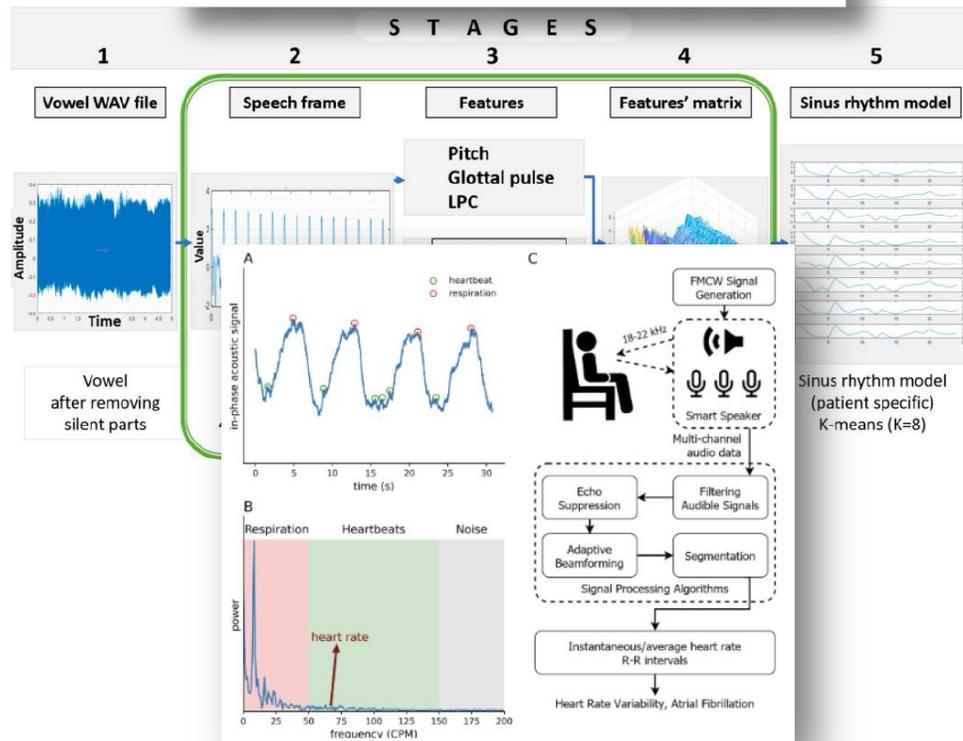


# Je možné fibriláciu predsieni „počut“



## Vocal Feature Analysis to Detect Atrial Fibrillation

### SMART mikrofón

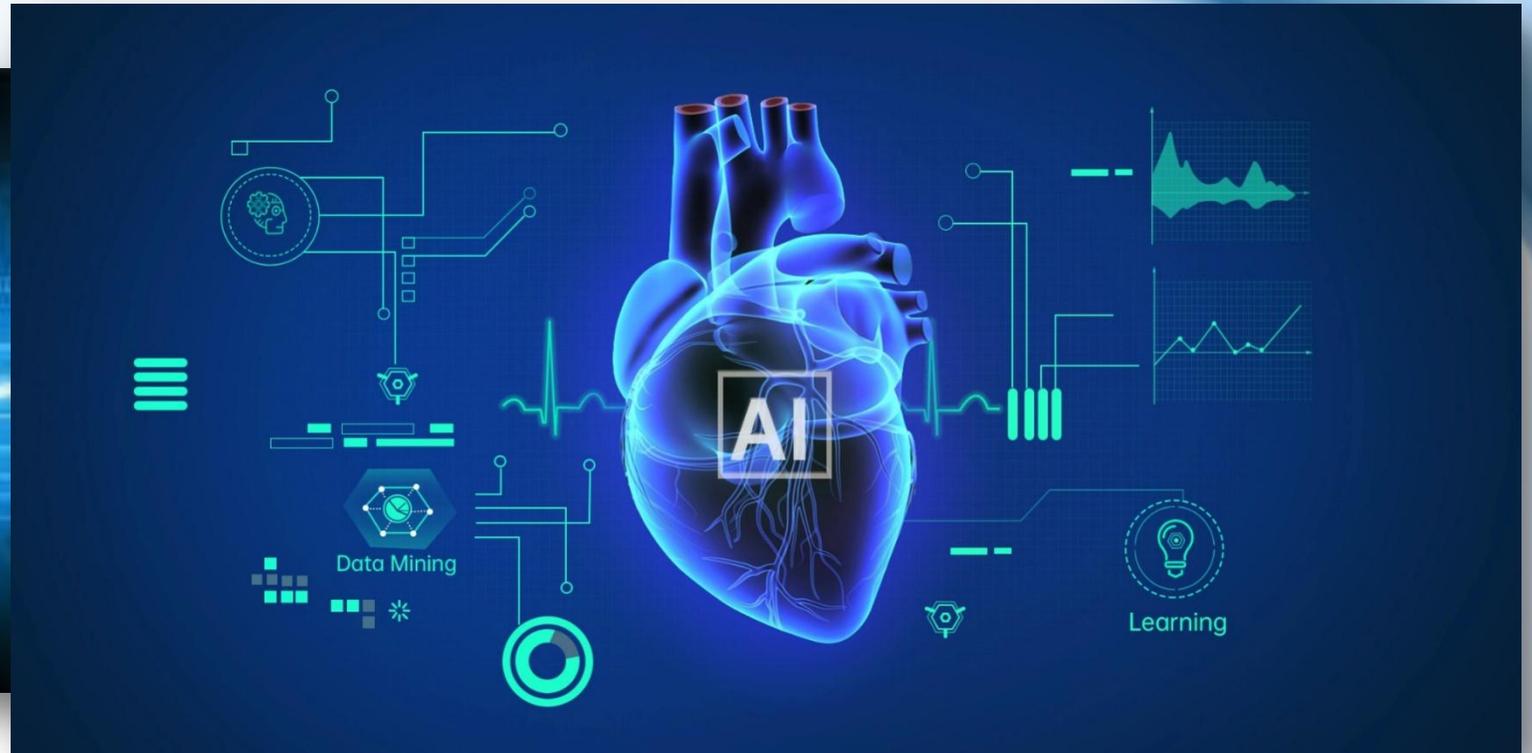


AF detection from voice is feasible with sensitivity 95% and 82% specificity

# SMART AUTO (-monitorovanie)



# EKG a AI (umelá inteligencia)

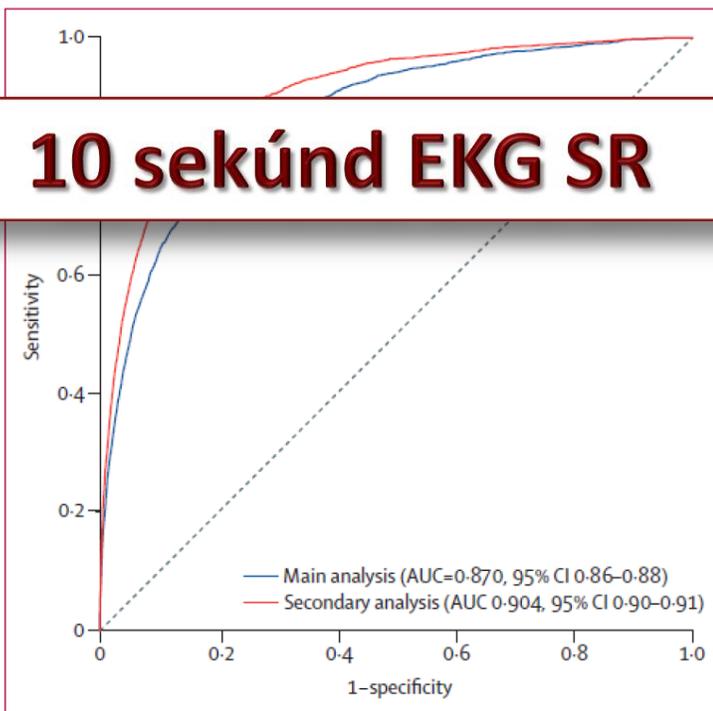


# Je možné predpovedať vznik FP z EKG SR



## ATRIAL FIBRILLATION RISK: from an ECG recorded during Normal Sinus Rhythm

**10 sekúnd EKG SR**



• **90%**

AREA UNDER CURVE FOR SIL AF

AI ECG = 0.9  
 PERFECT = 1

### Key Question

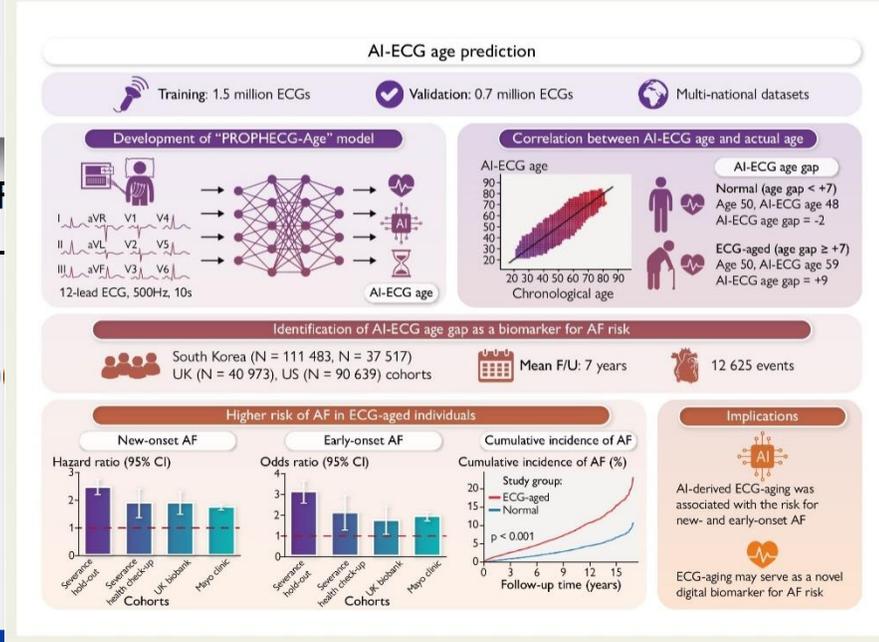
Can a risk score...

Key In this demo early-onset AF.

**EKG „vek“**

### Take Home Message

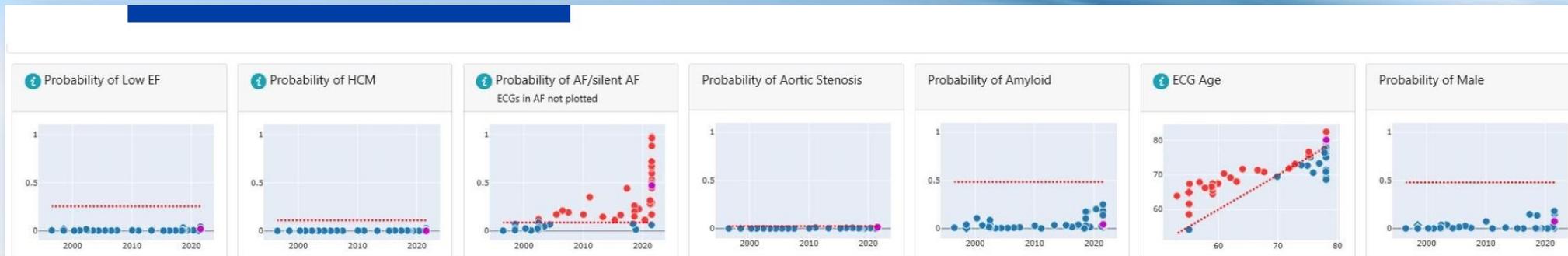
The utilization of AI-ECG age prediction could facilitate identification of individuals at risk of AF, thereby enabling the implementation of proactive preventive measures and serving as a benchmark for cardiac health monitoring.



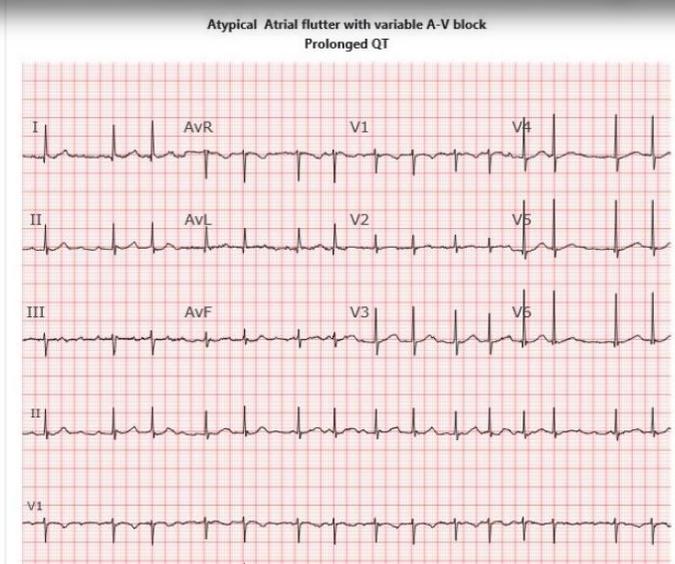
Attia...Friedman: Lancet Aug 2019

©2019 MFMER | 3822879-12

# EKG (AI): okrem FP je možné predpovedať ...



FP, ... ↓ EF, srdcové zlyhávanie, H-KMP, AoS, amyloidózu, ...



ECG Date	Main Rhythm	Heart Rate	QT/QTc	PR/QRS	Real Age	ECG Age	P of Low EF (%)	P of AF (%)	P of HCM (%)
2021-Jul-23 01:39:19	Atypical	220	426/521	null/70	78.11	80.12	1.87	<b>47.17</b>	0.03
2021-Jul-23 01:35:27	Marked sinus bradycardia	40	528/430	142/72	78.11	69.21	0.24	<b>48.33</b>	2.12
2021-Jul-22 23:08:26	Normal sinus rhythm	68	456/485	148/74	78.11	69.27	1.72	<b>48.16</b>	1.59
2021-Jul-22 17:48:08	Normal sinus rhythm	63	466/476	146/82	78.11	77.04	0.24	<b>88.18</b>	0.44
2021-Jul-22 10:48:01	Sinus rhythm	61	520/523	152/80	78.11	75.38	0.48	<b>97.68</b>	2.69
2021-Jul-22	Normal sinus	60	476/476	160/74	78.11	77.73	0.40	<b>96.35</b>	0.07

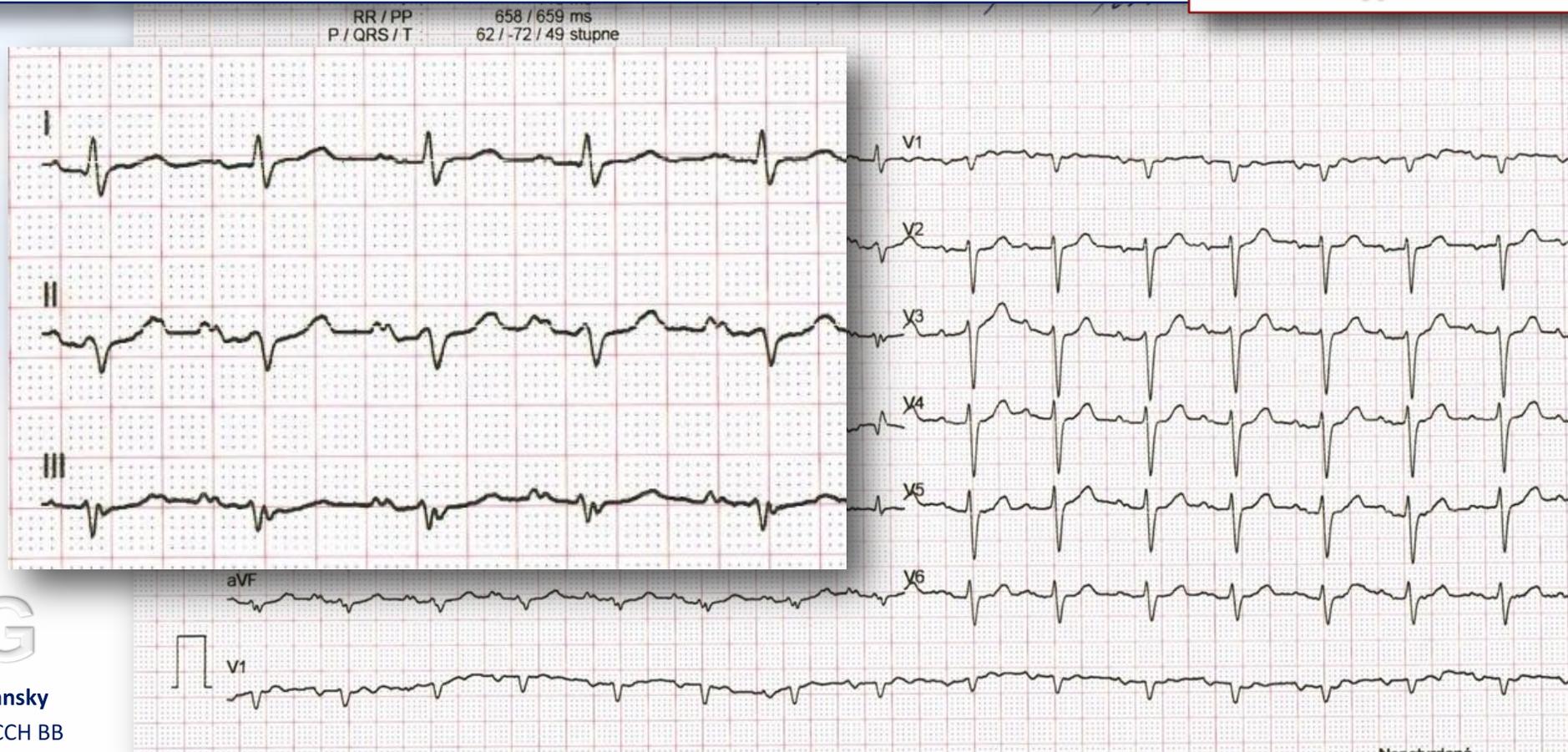
# Je možné predpovedať vznik FP z EKG SR ?



# Je možné predpovedať vznik FP ?

- muž, 64 r.: a. hypertenzia, interm. palpitácie

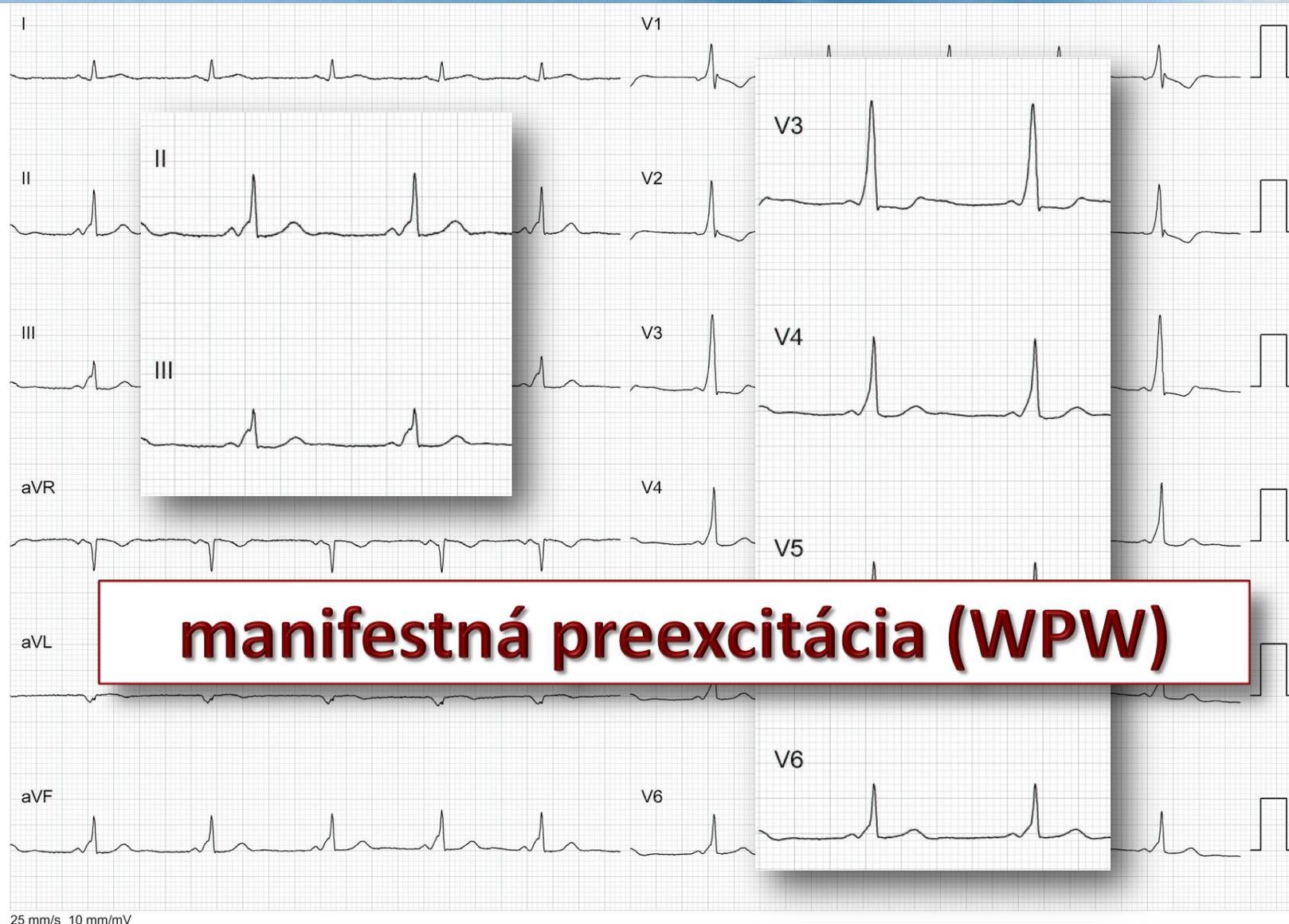
P „mitrále“



EKG

archív A. Bystriansky  
Odd. arytmii SÚSCCH BB

# Rizikový pacient pre fibriláciu predsiení

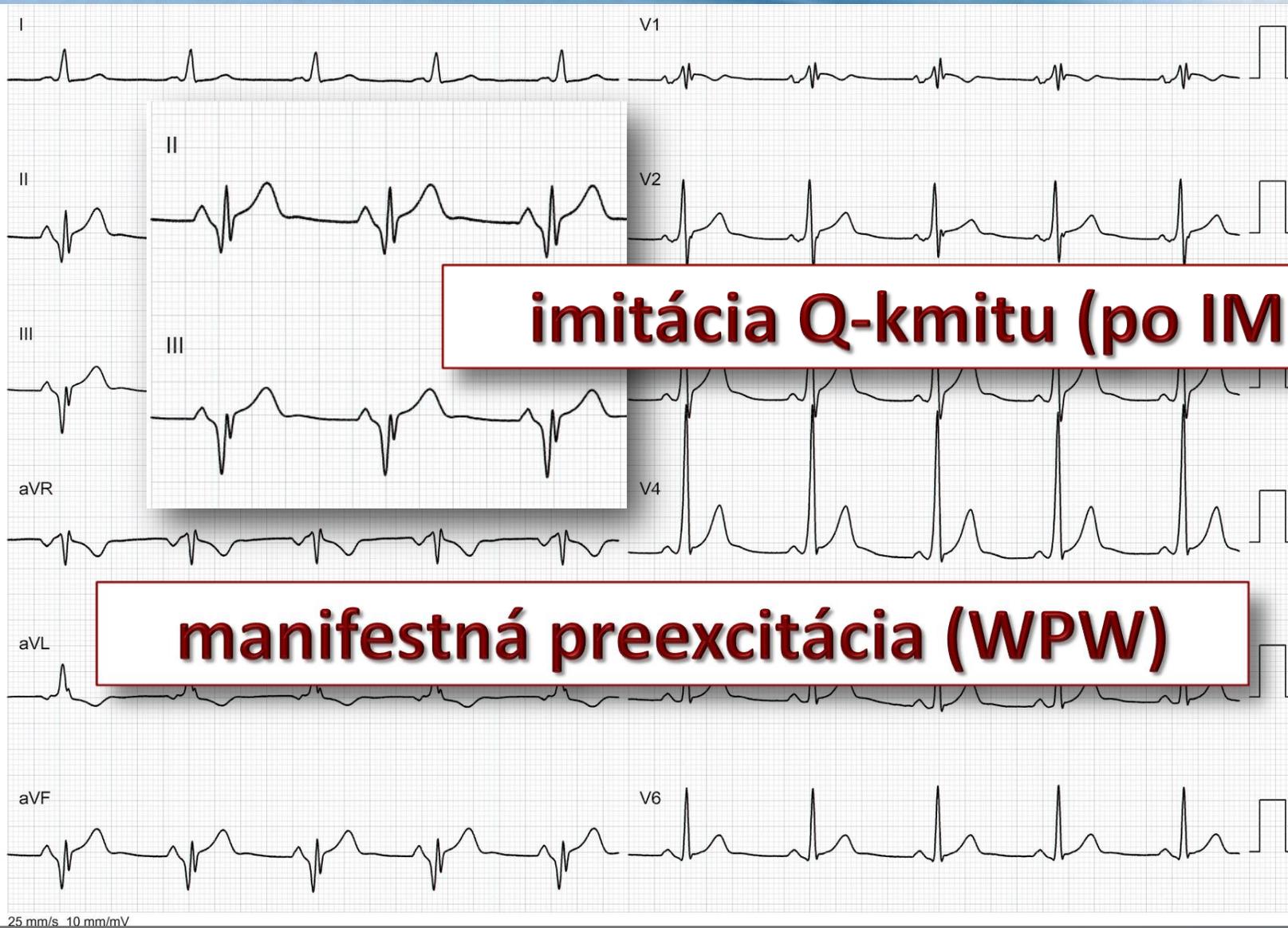


EKG

archív A. Bystriansky  
Odd. arytmii SÚSCCH BB

BARD

# Rizikový pacient pre fibriláciu predsiení

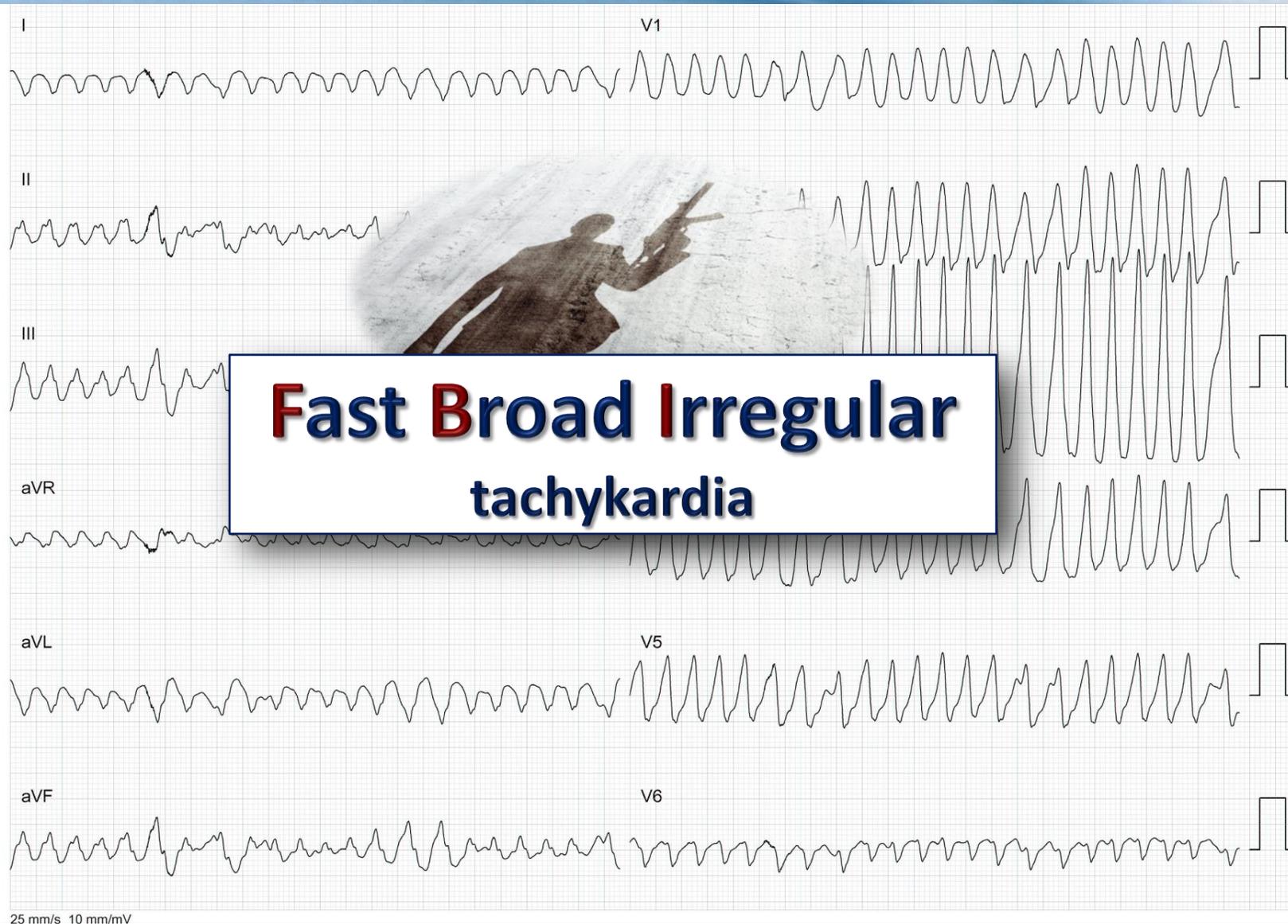


EKG

archív A. Bystriansky  
Odd. arythmií SÚSCCH BB

BARD

# Rizikový pacient s fibriláciou predsiení

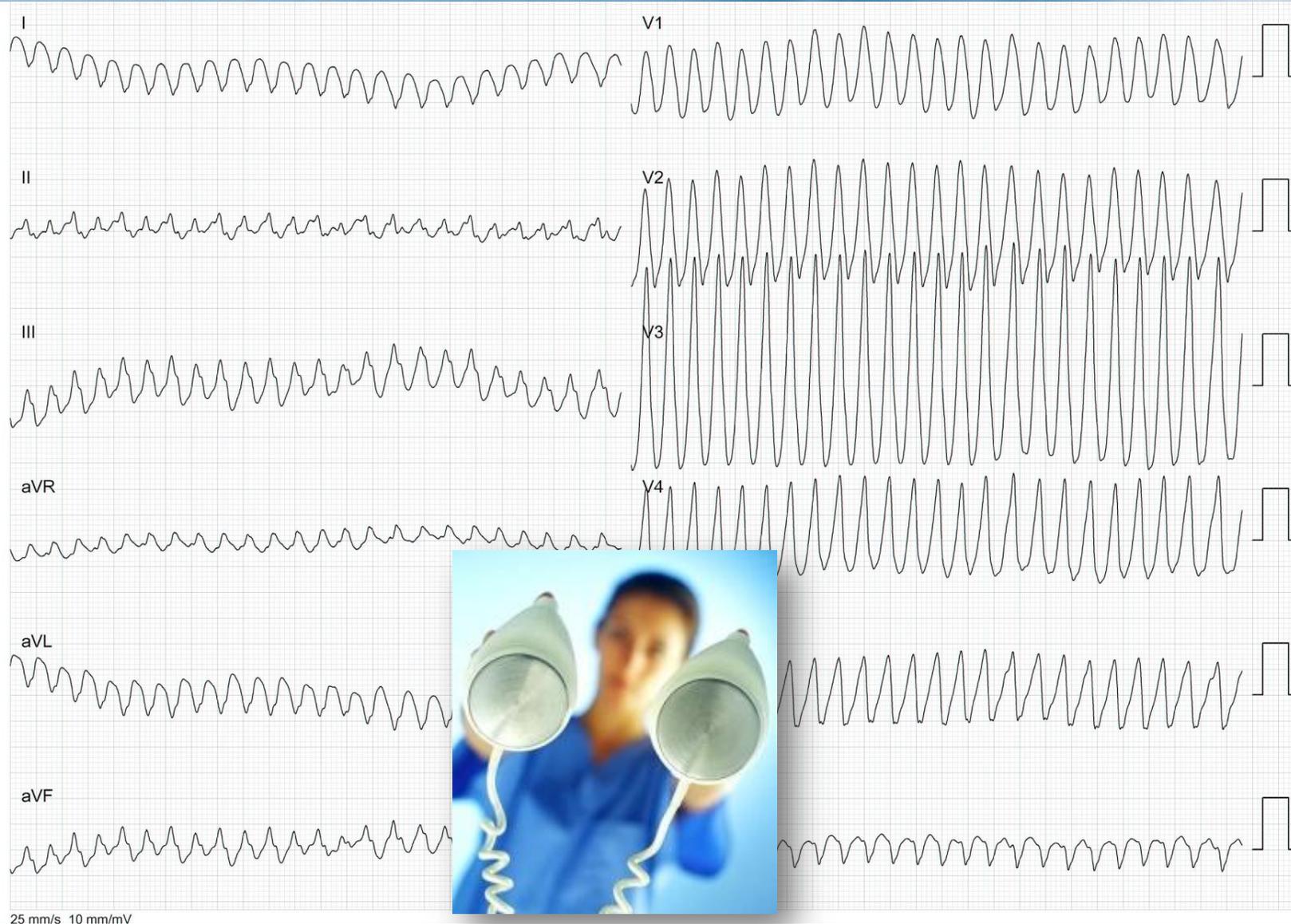


EKG

archív A. Bystriansky  
Odd. arytmii SÚSCCH BB

BARD

# Rizikový pacient s fibriláciou predsiení



EKG

archív A. Bystriansky  
Odd. arytmii SÚSCCH BB

BARD

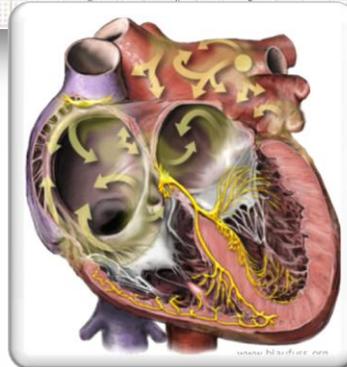
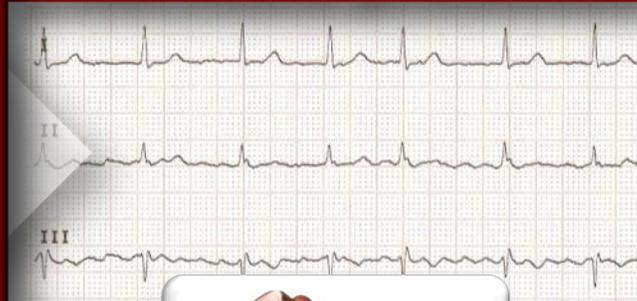
# Prevenca fibrilácie predsiení

**primárna  
prevencia**

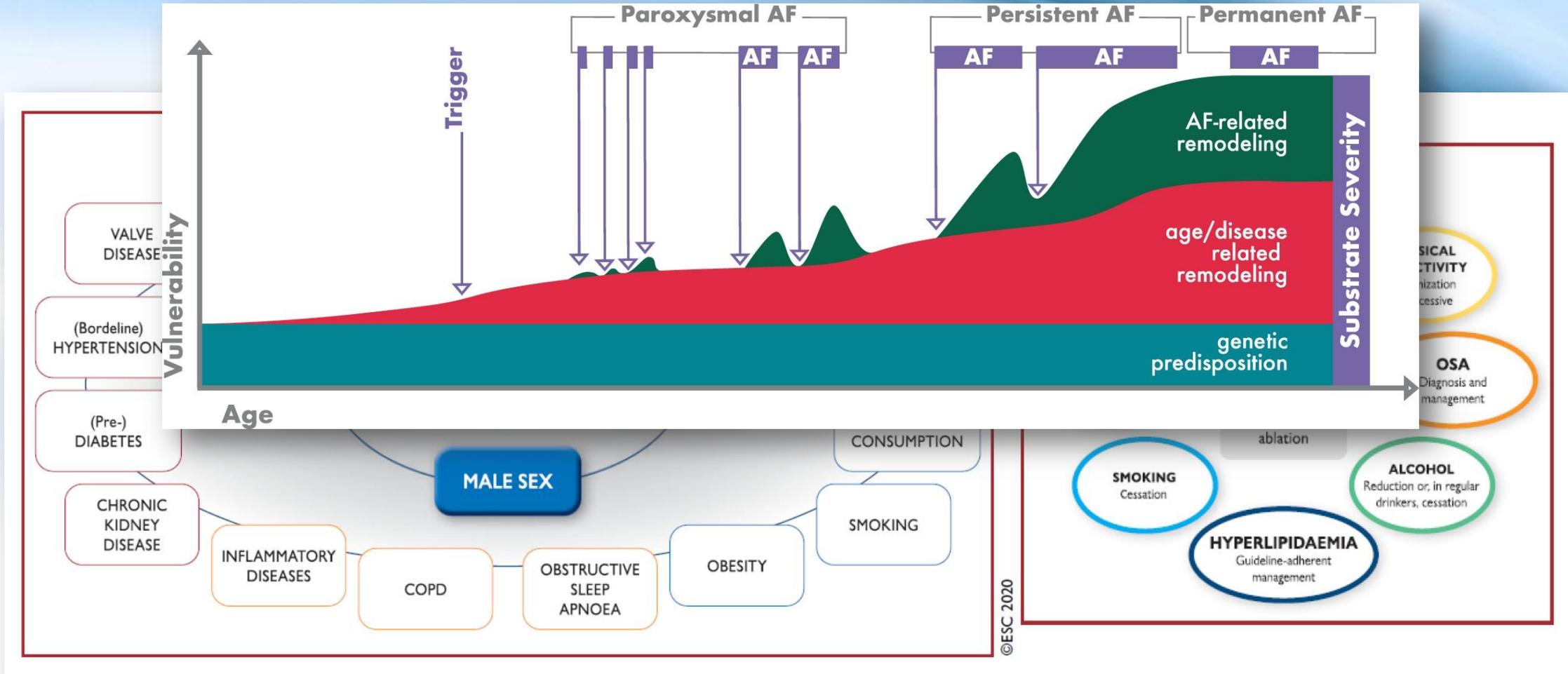
**sínusový rytmus**



**fibrilácia predsiení**



# Rizikové faktory pre vznik fibrilácie predsiení





# 2024 ESC odporúčania pre fibriláciu predsiení

**AF CARE**

- Equality in healthcare provision (gender, ethnicity, socioeconomic) (Class I)
- Education for patients, families and healthcare professionals (Class I)
- Patient-centred AF management with a multidisciplinary approach (Class IIa)

### C Comorbidity and risk factor management

<b>Hypertension</b> Blood pressure lowering treatment (Class I)	<b>Heart failure</b> Diuretics for congestion (Class I) Appropriate HFrEF medical therapy (Class I)	<b>Overweight or obese</b> Weight loss (target 10%) <sup>a</sup> (Class I) Bariatric surgery if rhythm control <sup>b</sup> (Class IIb)	<b>Obstructive sleep apnoea</b> Management of OSA <sup>a</sup> (Class IIb)	<b>Alcohol</b> Reduce to ≤3 drinks per week (Class I)
<b>Diabetes mellitus</b> Effective glycaemic control <sup>a</sup> (Class I)	<b>SGLT2 inhibitors</b> (Class I)	<b>Exercise capacity</b> Tailored exercise programme (Class I)	<b>Other risk factors/comorbidities</b> Identify and manage aggressively <sup>a</sup> (Class I)	

### A Avoid stroke and thromboembolism

Risk of thromboembolism → Use locally-validated risk score or CHA<sub>2</sub>DS<sub>2</sub>-VA → Choice of anticoagulant → Assess bleeding risk → Prevent bleeding

Start oral anticoagulation (Class I)	OAC if CHA <sub>2</sub> DS <sub>2</sub> -VA score = 2 or more (Class I)	Use DOAC, except mechanical valve or mitral stenosis (Class I)	Assess and manage all modifiable risk factors for bleeding (Class I)	Do not combine antiplatelets and OAC for stroke prevention (Class III)
Temporal pattern of AF not relevant (Class III)	OAC if CHA <sub>2</sub> DS <sub>2</sub> -VA score = 1 (Class IIa)	If VKA: Target INR 2.0–3.0; >70% INR range; or switch to DOAC (Class I)	Do not use risk scores to withhold anticoagulation (Class III)	Avoid antiplatelets beyond 12 months in OAC treated CCS/PPV (Class III)
Antiplatelet therapy not an alternative (Class III)				

### R Reduce symptoms by rate and rhythm control

See patient pathways for: First-diagnosed AF, Paroxysmal AF, Persistent AF, Permanent AF

Consider: Rate control drugs, Cardioversion, Antiarrhythmic drugs, Catheter ablation, Endoscopic/hybrid ablation, Surgical ablation, Ablate and pace

### E Evaluation and dynamic reassessment

Re-evaluate when AF episodes or non-AF admissions

Regular re-evaluation: 6 months after presentation, and then at least annually or based on clinical need

ECG, blood tests, cardiac imaging, ambulatory ECG, other imaging as needed	Assess new and existing risk factors and comorbidities (Class I)	Stratify risk for stroke and thromboembolism (Class I)	Check impact of AF symptoms before and after treatment (Class I)	Assess and manage modifiable bleeding risk factors (Class I)	Continue OAC despite rhythm control if risk of thromboembolism (Class I)
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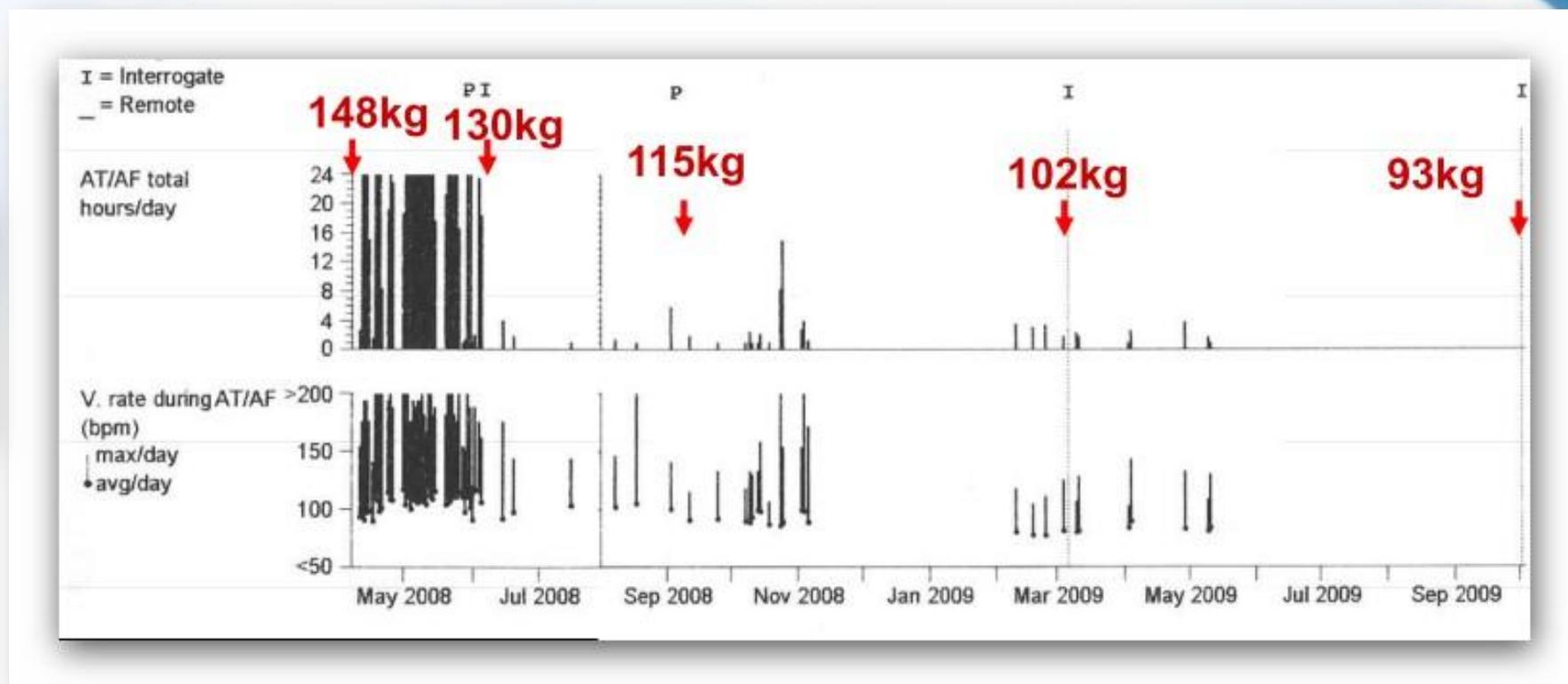
ESC

## Comorbidity

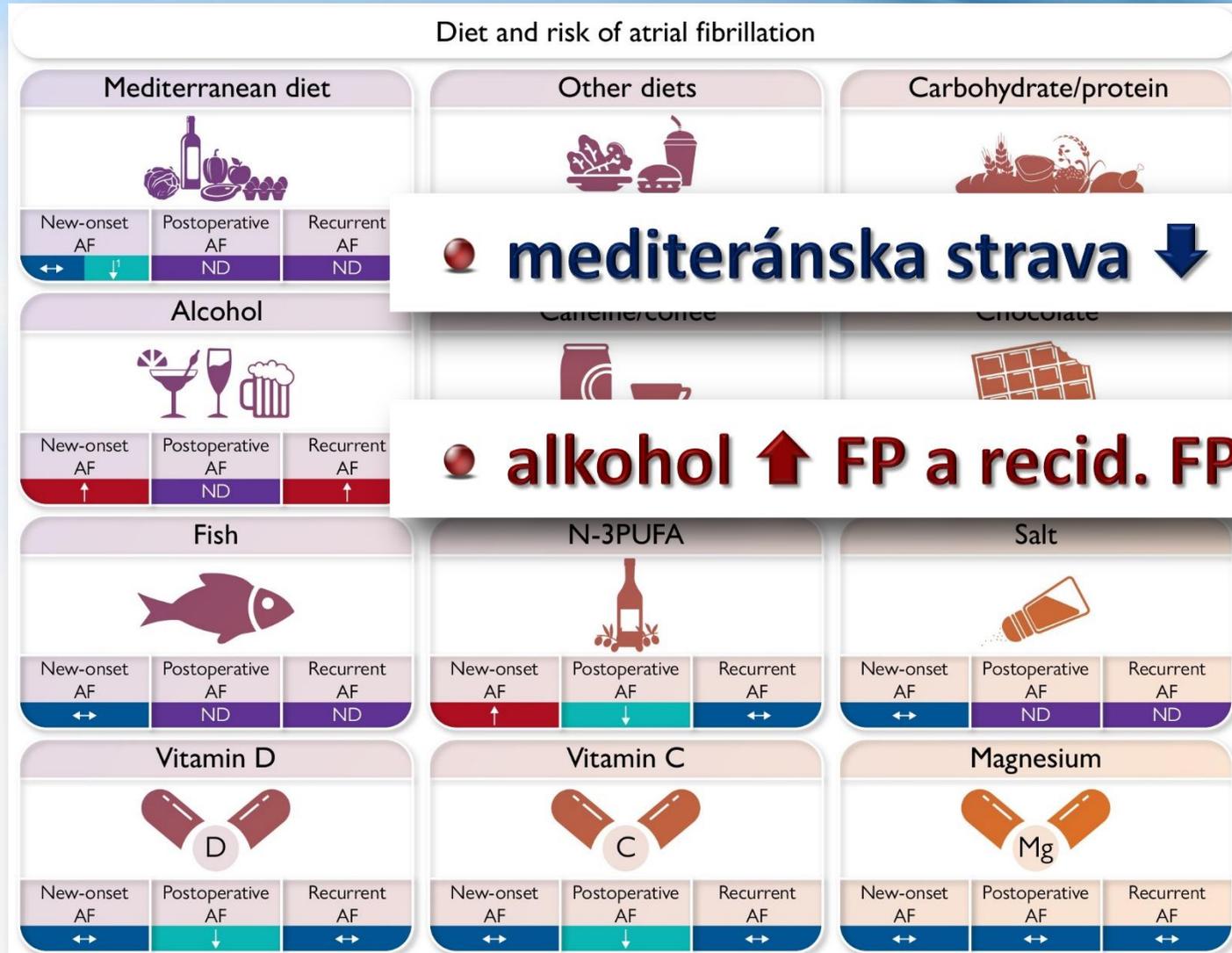
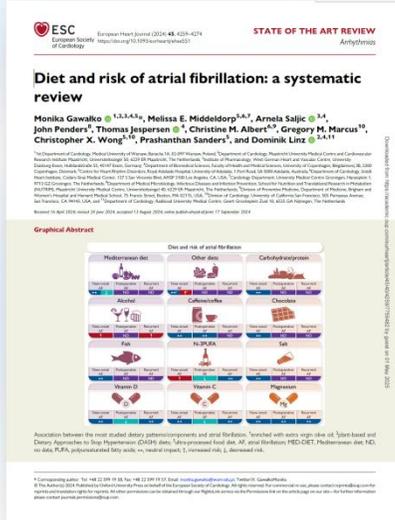
Integrated management	Identify	<b>identifikácia a manažment rizik</b>
Hypertension	Blood pressure target 70–79 mmHg in most	<b>TK &lt; 130/80 mmHg</b>
Heart failure	Optimize with diuretic medical therapy for reduced congestion	<b>SGLT<sub>2</sub> inhibítory</b>
Diabetes	Effective glycaemic control with diet/medication(s)	(Class I)
Obesity	Weight loss with diet and exercise	<b>↓ hmotnosti o 10%</b>
Sleep apnoea	Management of obstructive sleep apnoea to minimize apnoeic episodes	(Class IIb)
Physical activity	Tailored exercise programme	<b>fyz. aktivita (300 m/T)</b>
Alcohol intake	Reduce alcohol intake	<b>↓ alkohol (≤ 3 drinky/T)</b>

# Redukcia hmotnosti a fibrilácia predsiení

- redukcia telesnej hmotnosti ➔ miznutie FP



# Diéta a riziko fibrilácie predsiení



# Alkohol a riziko fibrilácie predsieni

## Key Question

Acute excessive alcohol intake may cause the Holiday Heart Syndrome, characterized by cardiac arrhythmias including atrial fibrillation. This study prospectively investigated the temporal course of the occurrence of cardiac arrhythmias following binge drinking.

## Key Finding

In 202 volunteers planning acute alcohol consumption, alcohol intake increased heart rate and atrial tachycardias. Heart rate variability analysis indicated a modulation of autonomic tone, with sympathetic activation during consumption and recovery. Arrhythmic episodes, including atrial fibrillation and non-sustained ventricular tachycardias, occurred primarily during the recovery period in 5.2% of participants.

## Take Home Message

Binge drinking interferes with autonomic nervous system and the relevance of the Holiday Heart Syndrome

## „Holiday Heart Syndrome“

ESC  
European Society of Cardiology  
European Heart Journal 2024, 45, 4938–4949  
CLINICAL RESEARCH  
Arrhythmias

### Acute alcohol consumption and arrhythmias in young adults: the MunichBREW II study

Stefan Brunner<sup>1,2,3,4</sup>, Christina Krewitz<sup>1</sup>, Raphaela Winter<sup>1</sup>, Anne S. von Falkenhausen<sup>1,2</sup>, Anna Kern<sup>1</sup>, Dorothee Brunner<sup>1</sup>, and Moritz F. Sinner<sup>1,2,4</sup>

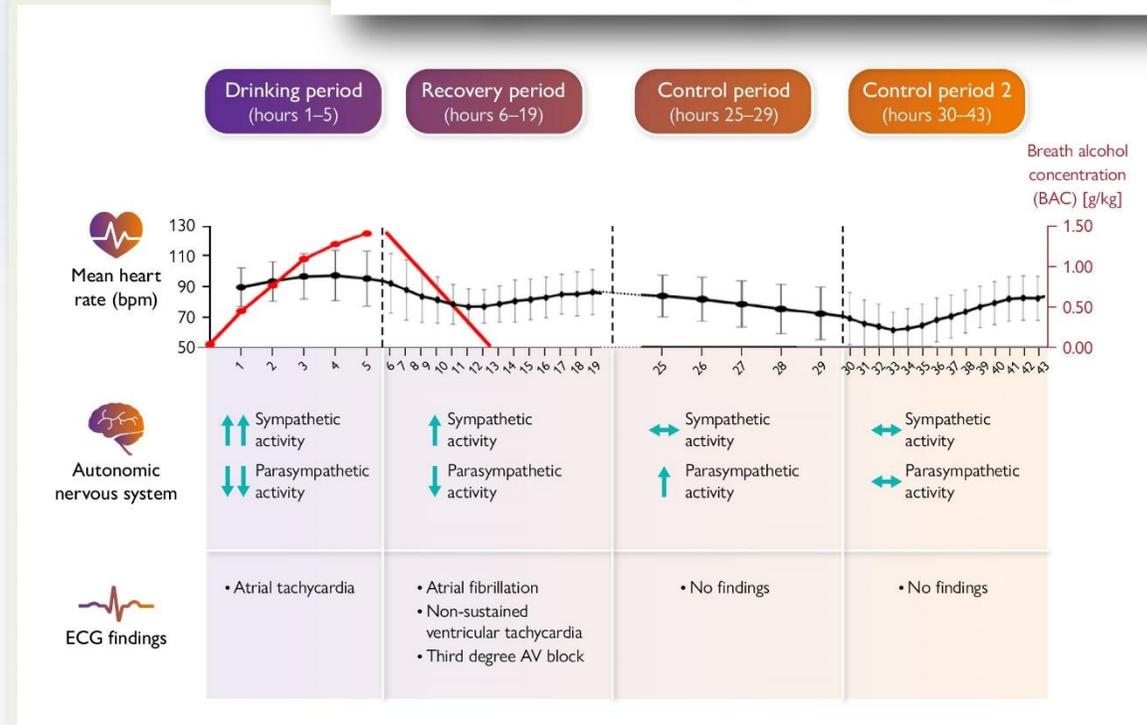
**Abstract**  
Acute excessive alcohol intake may cause the holiday heart syndrome, characterized by cardiac arrhythmias including atrial fibrillation. Since underlying data are scarce, the study aimed to prospectively investigate the temporal course of occurring cardiac arrhythmias following binge drinking in young adults.

**Background and Aim**  
A total of 202 volunteers planning acute alcohol consumption with expected peak breath alcohol concentration (BAC) of 2.0 g/kg were enrolled. The study comprised 48 h observation periods including consumption (drinking period; hours 1–5), recovery period (hours 6–19), and two control periods corresponding to 24 h after the drinking and recovery periods, respectively. Acute alcohol intake was monitored by BAC measurements during the drinking period. Electrocardiograms were analysed for mean heart rate, atrial tachycardia, premature atrial complexes, premature ventricular complexes (PVCs), and heart rate variability measures.

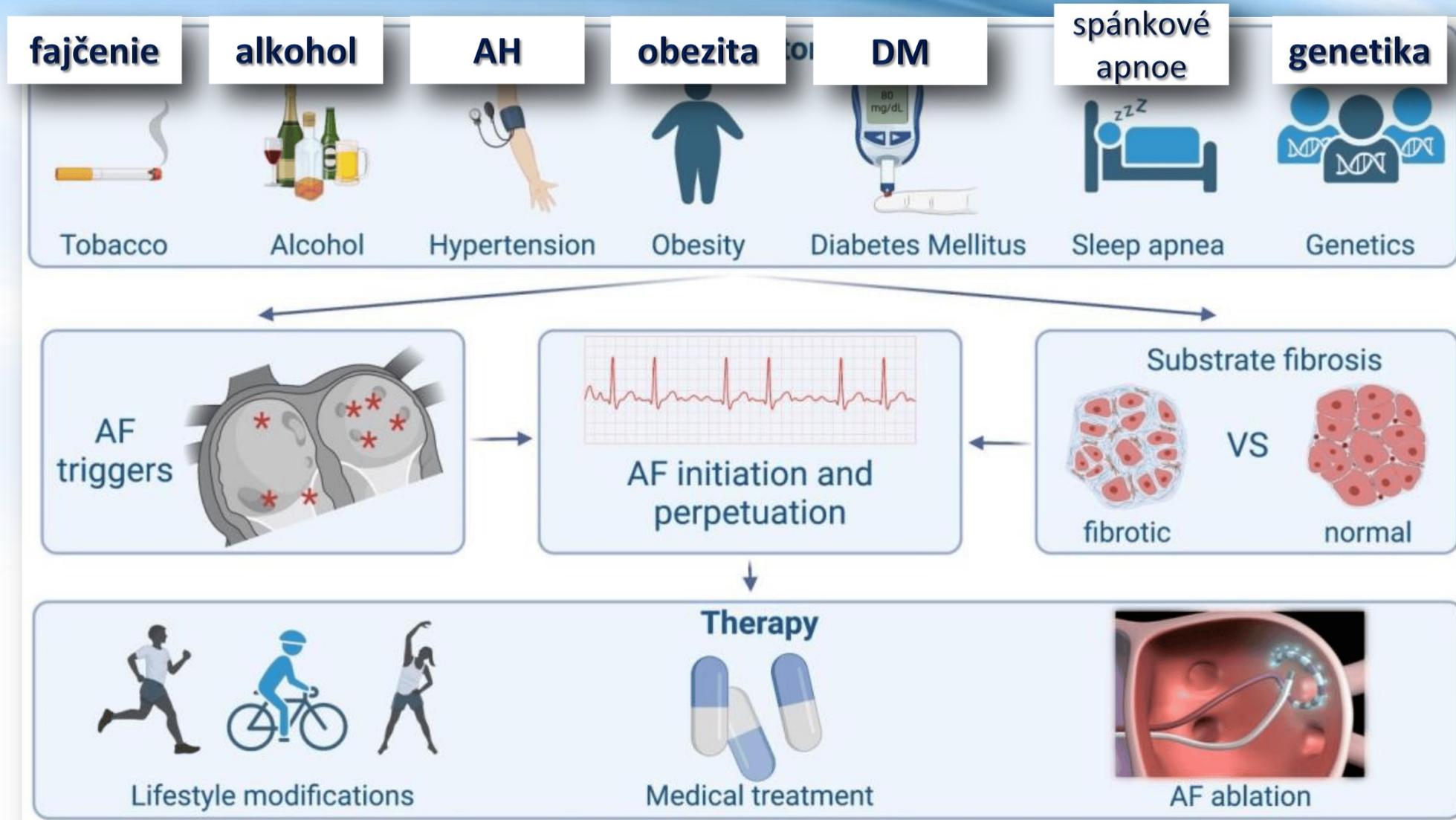
**Results**  
Data revealed an increase in heart rate and an increase of atrial tachycardias with increasing alcohol intake. Heart rate variability indices indicated an autonomic modulation with sympathetic activation during alcohol consumption and the subsequent recovery period, followed by parasympathetic predominance thereafter. Premature atrial complexes occurred significantly more frequently in the drinking period; relevant PVCs were more frequent in the drinking period. Ten participants experienced notable arrhythmic episodes, including atrial fibrillation and ventricular tachycardia, primarily during the recovery period.

**Conclusions**  
The study demonstrated the impact of binge drinking on heart rate alterations and increased atrial tachycardias during drinking period, and the occurrence of clinically relevant arrhythmias during the recovery period, emphasizing the holiday heart syndrome as a health concern.

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# „Tradičné“ riziká fibrilácie predsiení



# Lieky zvyšujúce riziko fibrilácie predsiení

**Table 11 Medications associated with risk of incident AF**

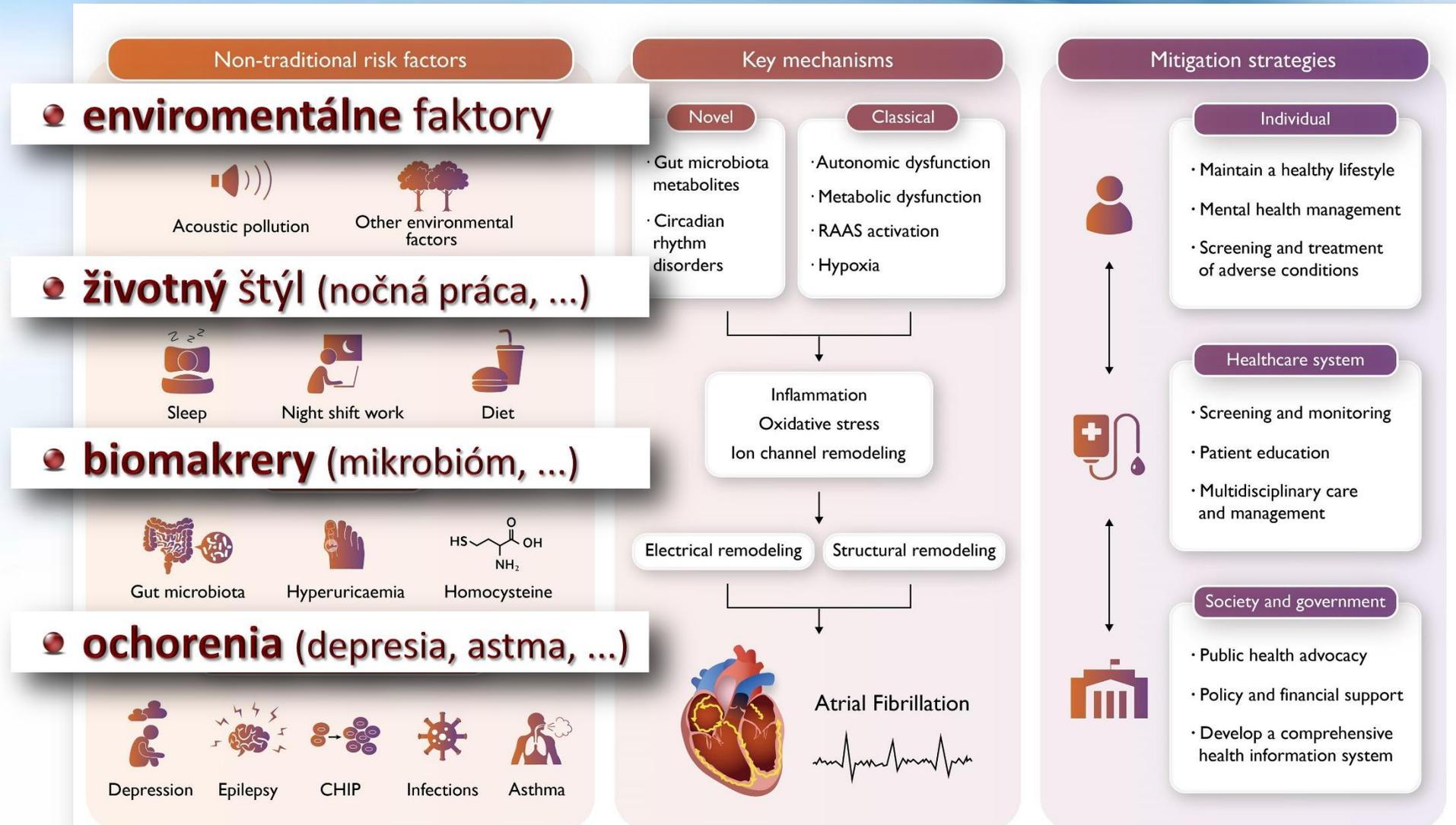
	Medications
Common (>20%)	Dobutamine, <sup>187</sup> Cisplatin <sup>187,188</sup>
Infrequent (5–20%)	Anthracyclines, <sup>187,188</sup> Melphalan, <sup>187,188</sup> Interleukin-2, <sup>187,188</sup> NSAIDs, <sup>189</sup> Bisphosphonates <sup>190,191</sup>
Rare (<5%)	Adenosine, <sup>187</sup> Corticosteroids, <sup>187</sup> Aminophylline, <sup>187</sup> Antipsychotics, <sup>192</sup> Ivabradine <sup>193</sup> Ondansetron <sup>187</sup>

• dobutamín, cisplatina

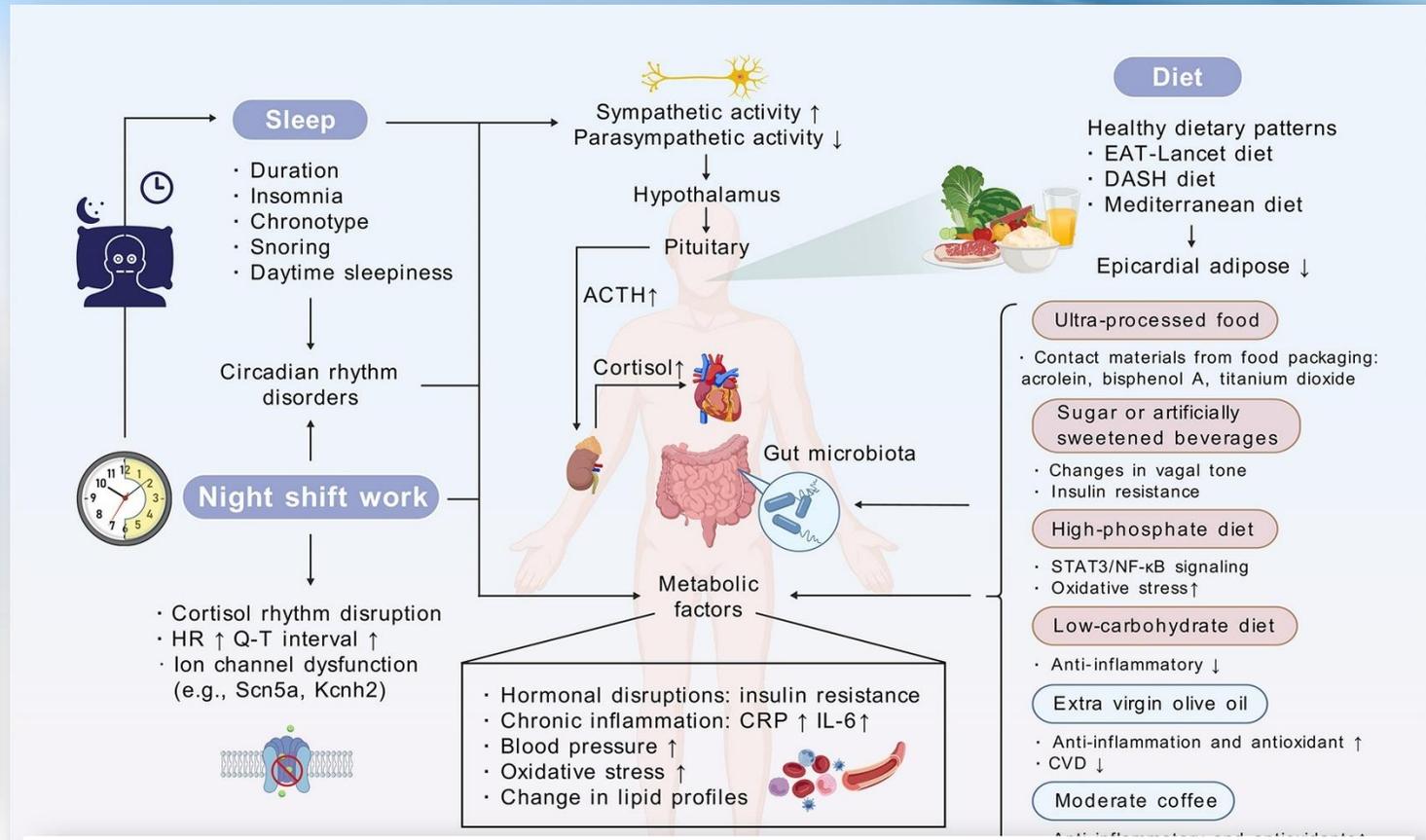
• NSAIDS, bisfosfonáty, ...

• adenzín, kortikoidy, psychofarmaká, ivabradin, ondasetron, ..

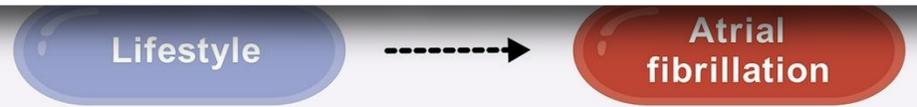
# „NE-tradičné“ riziká fibrilácie predsiení



# „NE-tradičné“ riziká fibrilácie predsiení



## ● narušenie neuro-endokrinnnej rovnováhy



# Prevenca fibrilácie predsiení ➡ odkaz do praxe

## Role of the Optimal Cardiovascular Health as Defined by LS7 in AF Prevention

-  1. **a. hypertenzia ➡ ↑ riziko FP o 20%**
-  2. **DM ➡ ↑ riziko FP o 2,5%**  
2.5% of the A  
More data is
-  3. **↑ HDL ➡ ↓ riziko FP**  
High HDL-C w  
more researc is inconsistent and
-  4. **opt. hmotnosť ➡ ↓ riziko FP o 18%**
-  5. **cvičenie ➡ ↓ riziko FP o 9%**
-  6. **mediteránska strava**
-  7. **NEfajčiť ➡ ↓ riziko FP o 10%**

Figure 1:

Figure shows individual components of Life's Simple 7 (LS7) and their role in atrial fibrillation (AF) prevention.

**Ďakujem za pozornosť**