VYŠETŘENÍ PACIENTA S FIBRILACI SÍNÍ

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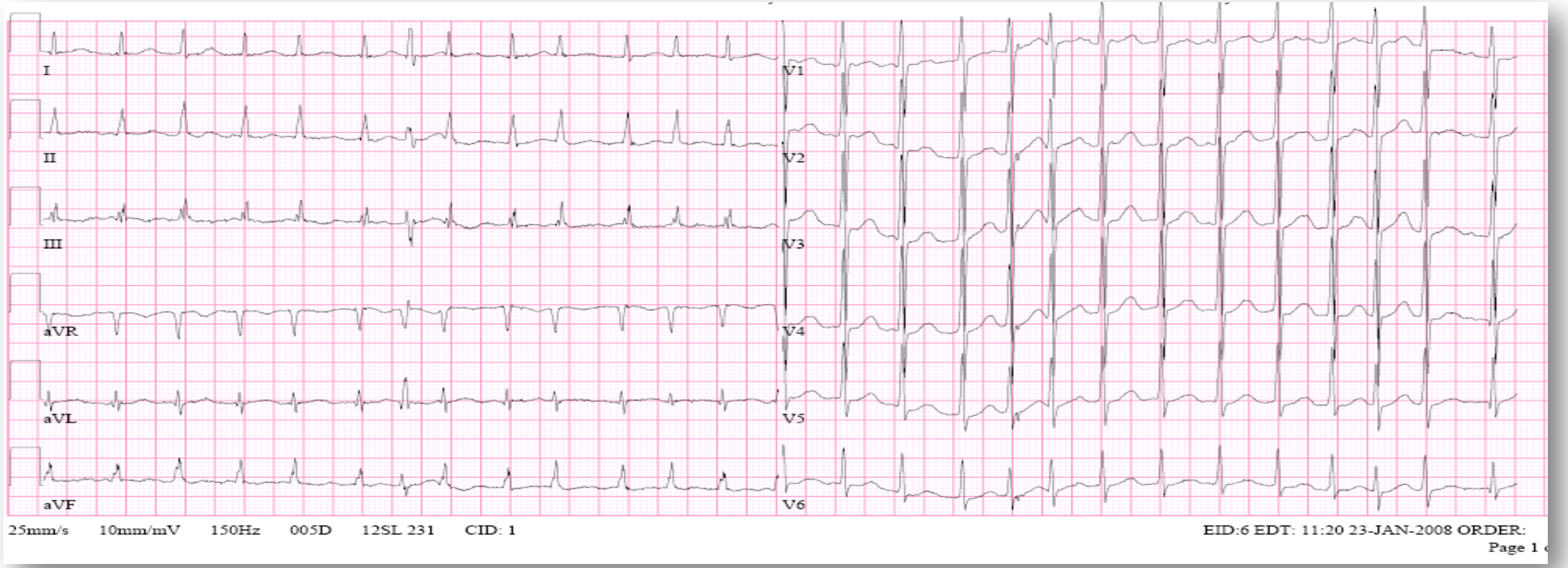
XXXIII. Výroční sjezd České kardiologické společnosti Brno 2025

Fibrilace síní I 48

nejčastější porucha srdečního rytmu

Prevalence FS :

5% osob nad 65 let
10% osob nad 75 let
20% osob nad 80 let
cca 4,5 milionů osob v Evropě
přibližně 100 000 nemocných v České republice



LONE Fibrilace síní

Pojem zavedli 1954 Ewans a Swann

Věk <60
absence KVS nemoci a plicních nemocí
absence trigrů FS (tyreopatie, horečka)

RE-LY registr prakticky popírá existenci LONE FiS

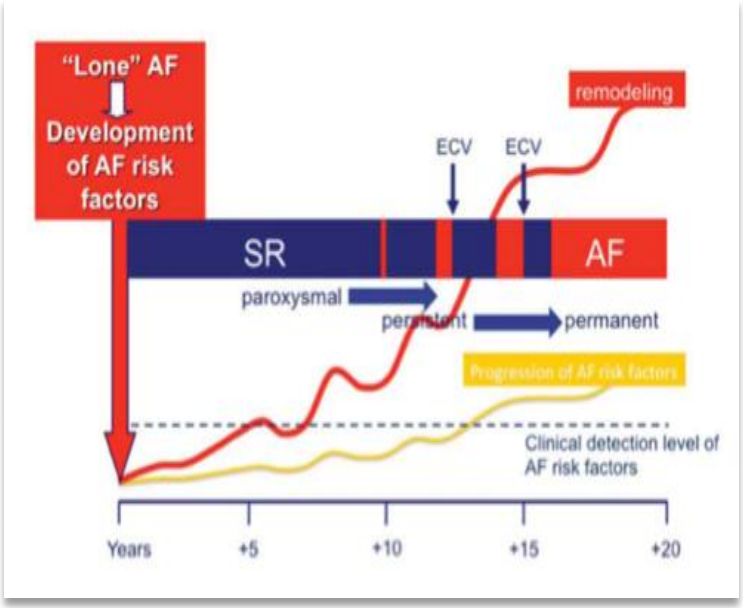
15 400pts

47 zemí → **,,LONE FIS,, 796 pts – 5%** → **86 % subklinické RF**

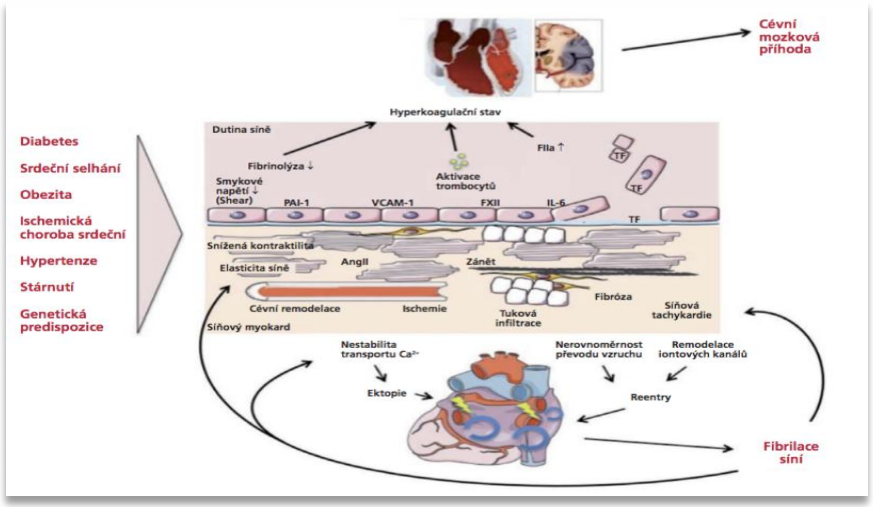
FU 1 Rok

Kloosterman, Healey for the RELY registry investigators, 2020

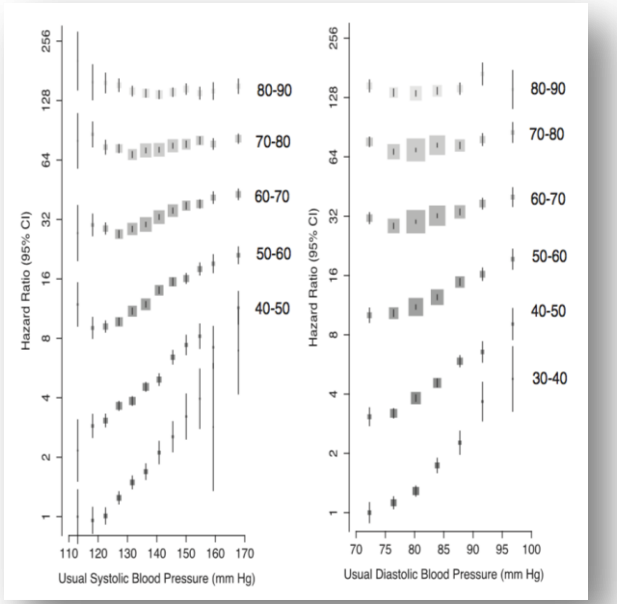
LONE FIS
17 pts
0,1%

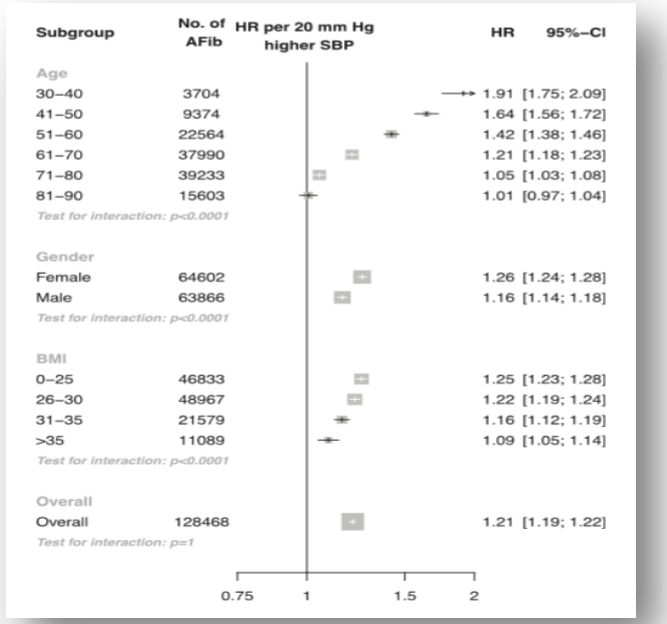


Wyse DGm et al. JACC 2014: 63(17): 1715-1723



Kirchhof P, Benussi S, Kotecha D, et al. 2016 ESC Guidelines





Emdin CS, et al .Int J Epidemiol, 2017, 162–172

„Jdi k lékaři, nemoc se už najde.“ vietnamské přísloví

„Polovina z toho, co sníme, udržuje naživu nás, druhá polovina lékaře.“ egyptské přísloví

PRIMÁRNÍ PREVENCE

Bráni vzniku 1 epizódy Fibrilace síní

SEKUNDÁRNÍ PREVENCE

Snižuje riziko recidívy Fibrilace síní

„Střídmý v jídle, sám sobě lékařem.“ latinské přísloví

„Budoucí lékař nebude léčit lidské tělo pomocí léků, ale spíše bude léčit a předcházet nemocem pomocí stravy.“ T.A.Edison

„Nejlepšími lékaři na světě jsou **dr. Střídmý, dr. Klidný a dr. Veselý**.“ Johnatan Swift

Zdroj: https://citaty.net/temata/lekar/

ESC European Society of Cardiology

European Heart Journal (2024) **45**, 3314–3414
https://doi.org/10.1093/eurheartj/ehae176

ESC GUIDELINES

2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS)

Developed by the task force for the management of atrial fibrillation of the European Society of Cardiology (ESC), with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC.

Endorsed by the European Stroke Organisation (ESO)

Faktory asociované s Fibrilaci síní **Jsou ovlivnitelné/~~neovlivnitelné~~**

Demographic factors	Age[1149–1151]
	Male sex[1149–1152]
	European ancestry[1149,1150]
	Lower socioeconomic status[1150]
Lifestyle behaviours	Smoking/tobacco use[1149–1151]
	Alcohol intake[1149,1150]
	Physical inactivity[1149,1150]
	Vigorous exercise[1153–1156]
	Competitive or athlete-level endurance sports[1151,1157]
	Caffeine[1158–1160]
Genetic factors	Family history of AF[1149,1151,1187–1190]
	AF-susceptible loci identified by GWAS[1149,1151,1191,1192]
	Short QT syndrome[1149]
	Genetic cardiomyopathies[990,1193]
Biomarkers	C-reactive protein[1150,1151]
	Fibrinogen[1150]
	Growth differentiation factor-15[1194]
	Natriuretic peptides (atrial and B-type)[1195–1200]
	Cardiac troponins[1199]
	Inflammatory biomarkers [1149,1151]
Others	Thyroid dysfunction[912,1149–1151]
	Autoimmune diseases[1150]
	Air pollution[1149,1201]
	Sepsis[1149,1202]
	Psychological factors [1203,1204]

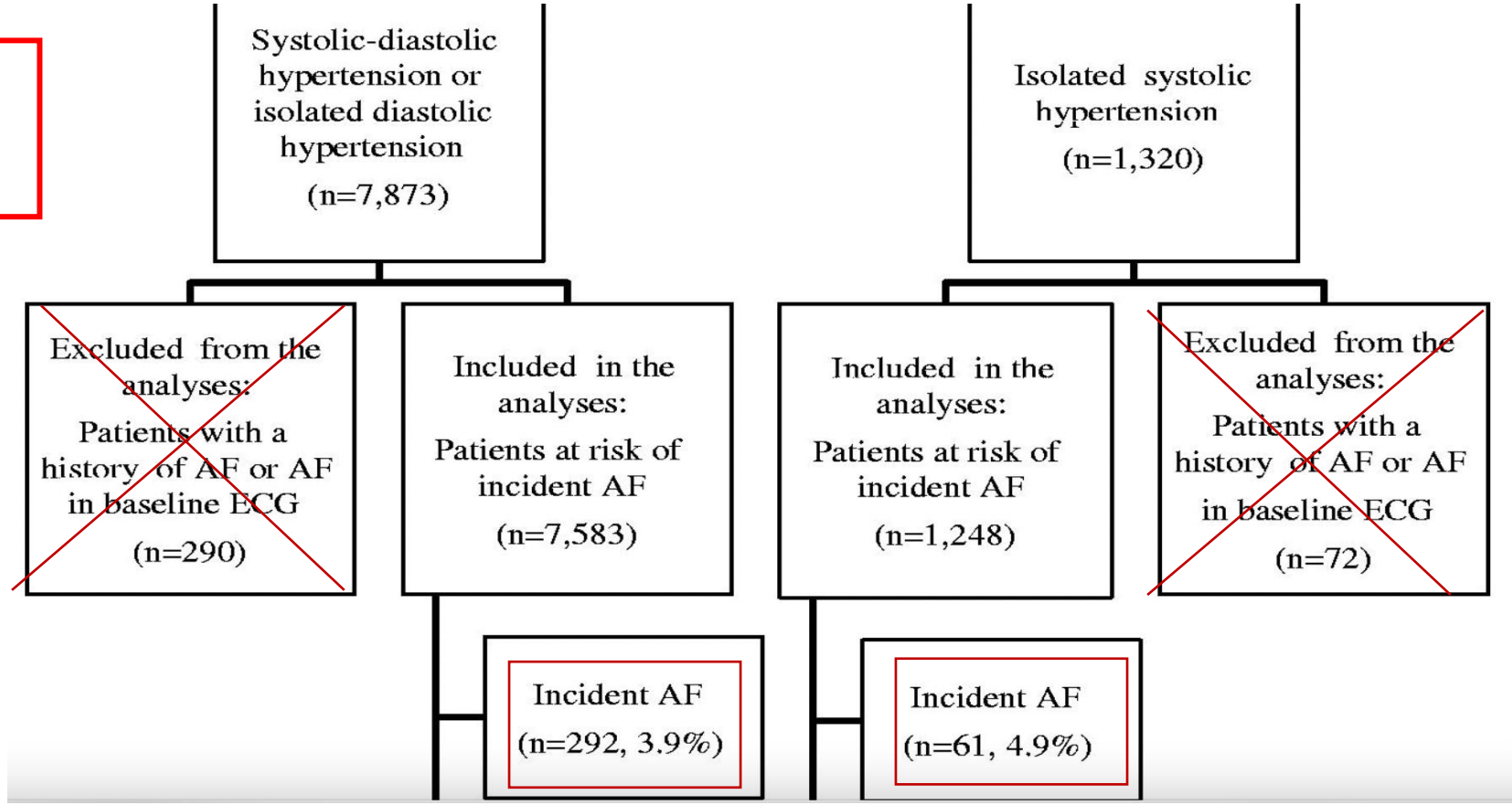
Comorbidities and risk factors	Hypertension[1149–1151]
	Heart failure[178,1149–1151,1161]
	Valvular disease[1149,1151,1162–1164]
	Coronary artery disease[1149,1151,1161,1165]
	Peripheral arterial disease[785]
	Congenital heart disease[1149,1166]
	Heart rate, heart rate variability[1167,1168]
	Total cholesterol[1149,1150]
	Low-density lipoprotein cholesterol[1150]
	High-density lipoprotein cholesterol[1150]
	Triglycerides[1150]
	Impaired glucose tolerance,[1169–1172]diabetes mellitus[1149–1151,1169]
	Renal dysfunction/CKD[1149–1151,1173,1174]
	Obesity[1149–1151,1175,1176]
	Body mass index, weight[1149–1151]
	Height[1150]
	Sleep apnoea[1149,1151,1177,1178]
	Chronic obstructive pulmonary disease[1179]
Subclinical atherosclerosis	Coronary artery calcification[1149,1151,1180]
	Carotid IMT and carotid plaque[1149,1151,1181,1182]
ECG abnormalities	PR interval prolongation[1149,1151,1183]
	Sick sinus syndrome[1149,1184,1185]
	Wolff–Parkinson–White[1149,1186]

Komorbidity asociované s Fibrilaci síní

Arteriální hypertenze

Prevalence 30% populace
60% populace po 60 roku věku

LIFE study



1 248 pts

Sníženi SBP o 10mmHg vedlo k 17% redukci onset FIS

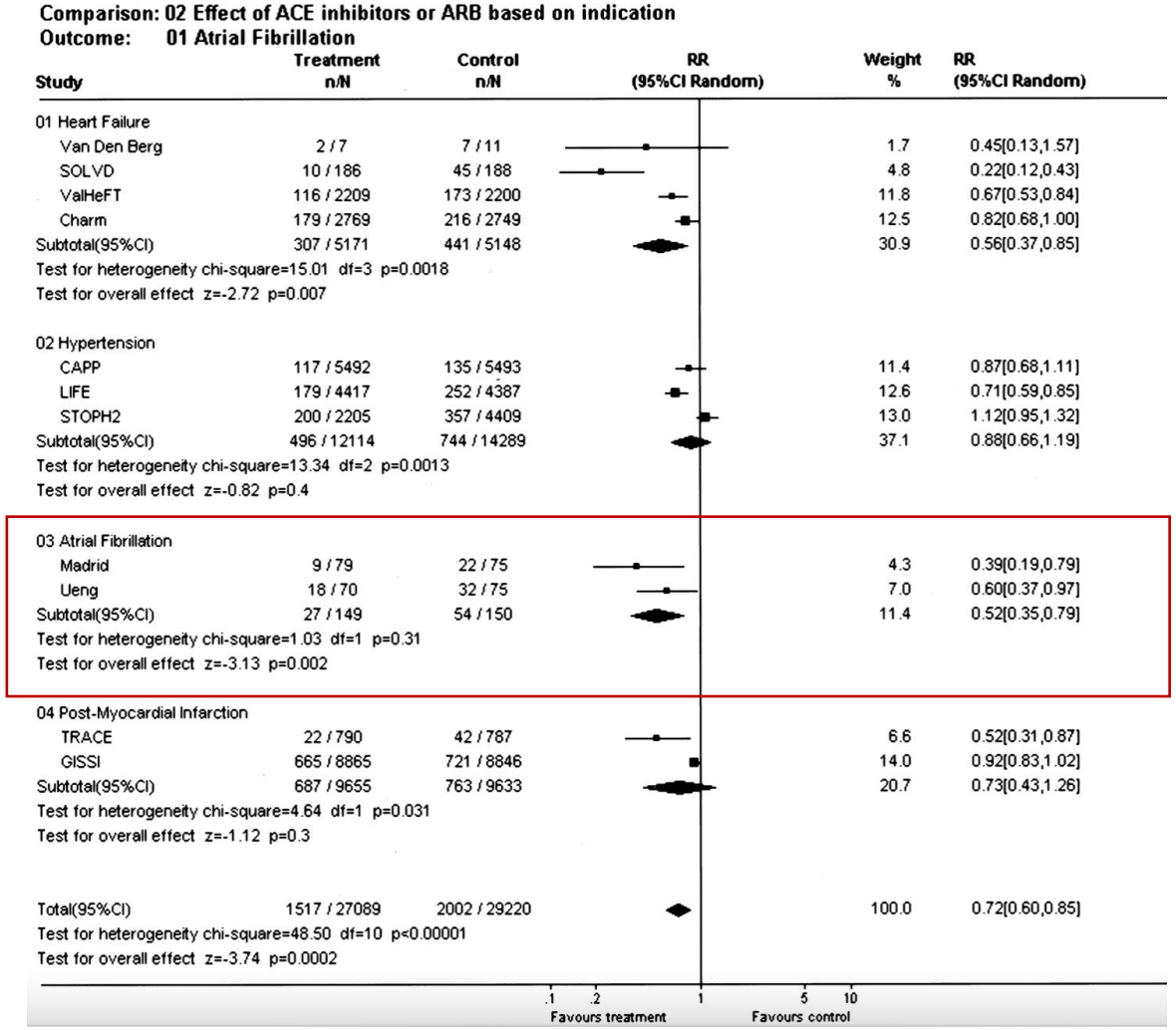
Sníženi SBP snížilo známky ECG LVH, CMP, IM, HF

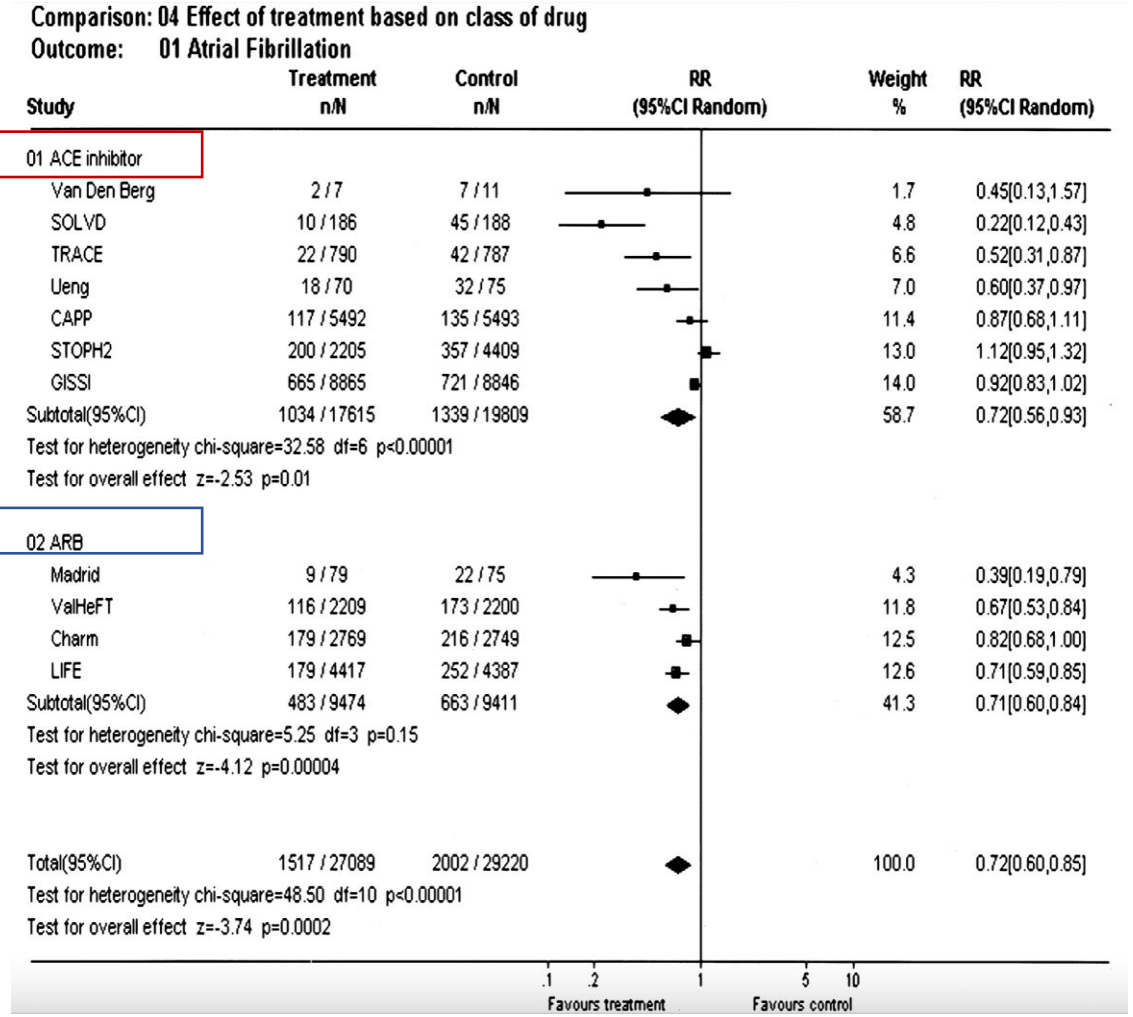
Larstorp ACK the LIFE study. *Blood Press* 2019;**28**:317–26.

Arteriální hypertenze

Vlyv ACEi /Sartany na snížení FIS , HF a AH

11 studií /56 808 pts





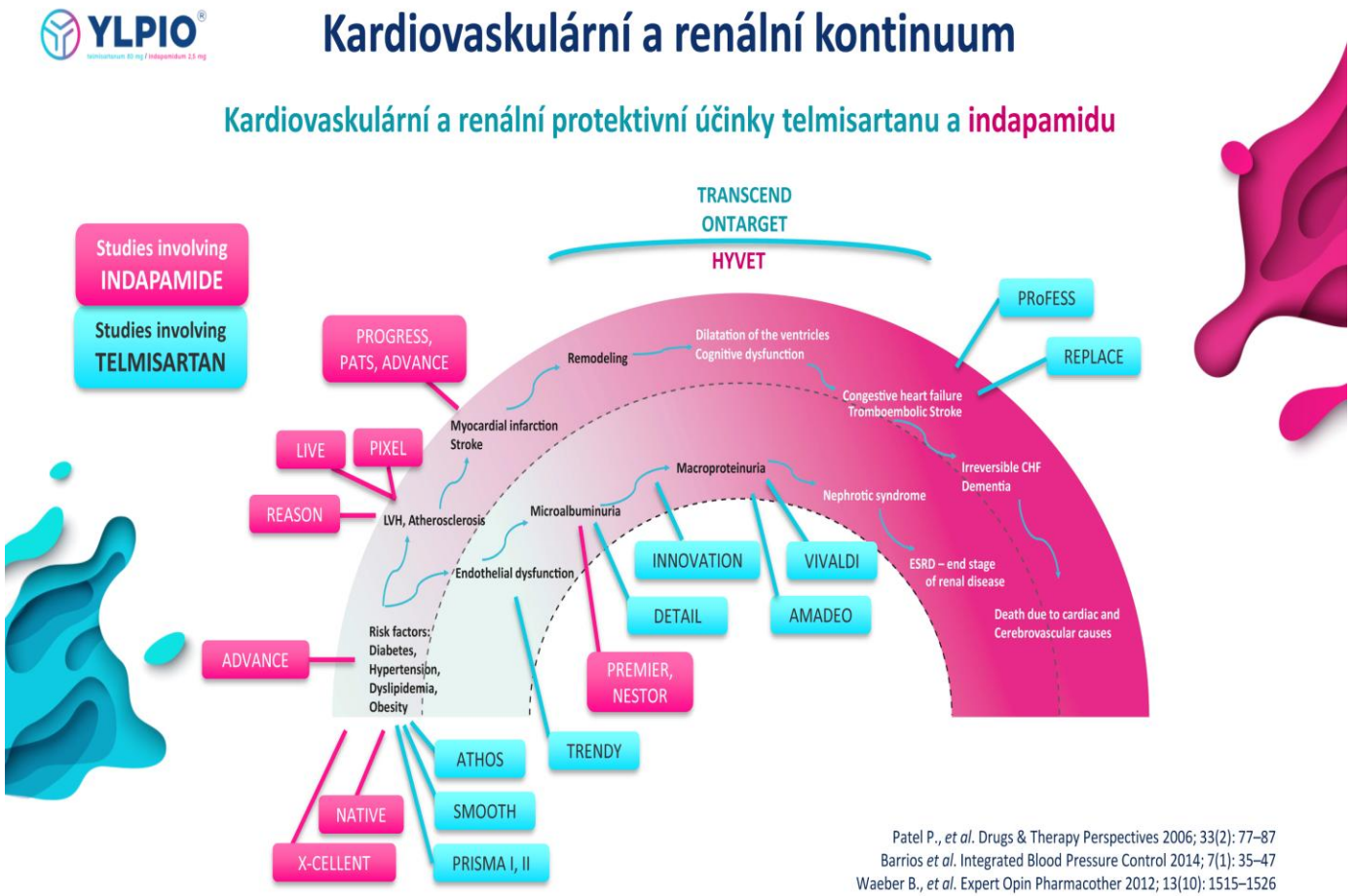
Healey J.S., J Am Coll Cardiol 2005;**45**:1832–9.

Arteriální hypertenze

ACEi /Sartany su superiorní na snížení FIS u AH ve srovnání s Calciovými-blokátory, Beta-blokátory a solo diuretikama

VALUE trial

7 649 pts Valsartan	**FIS de novo 3,67%**	**P value: 0.045**
7 596 pts Amlodipin	**FIS de novo 4,34%**	



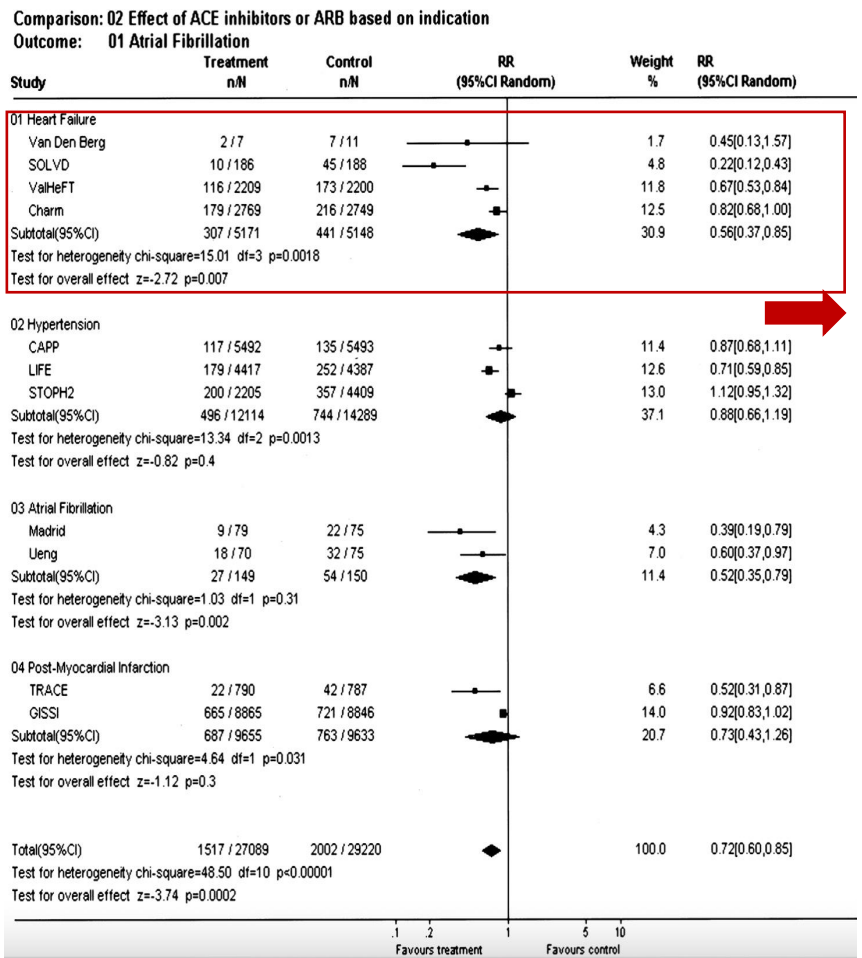
Schmieder R.E, *Journal ofHypertension* 26(3):p 403-411, March 2008

Komorbidity asociované s Fibrilaci síní

Srdeční selhání

HFrEF
EFLK ≤ 35%

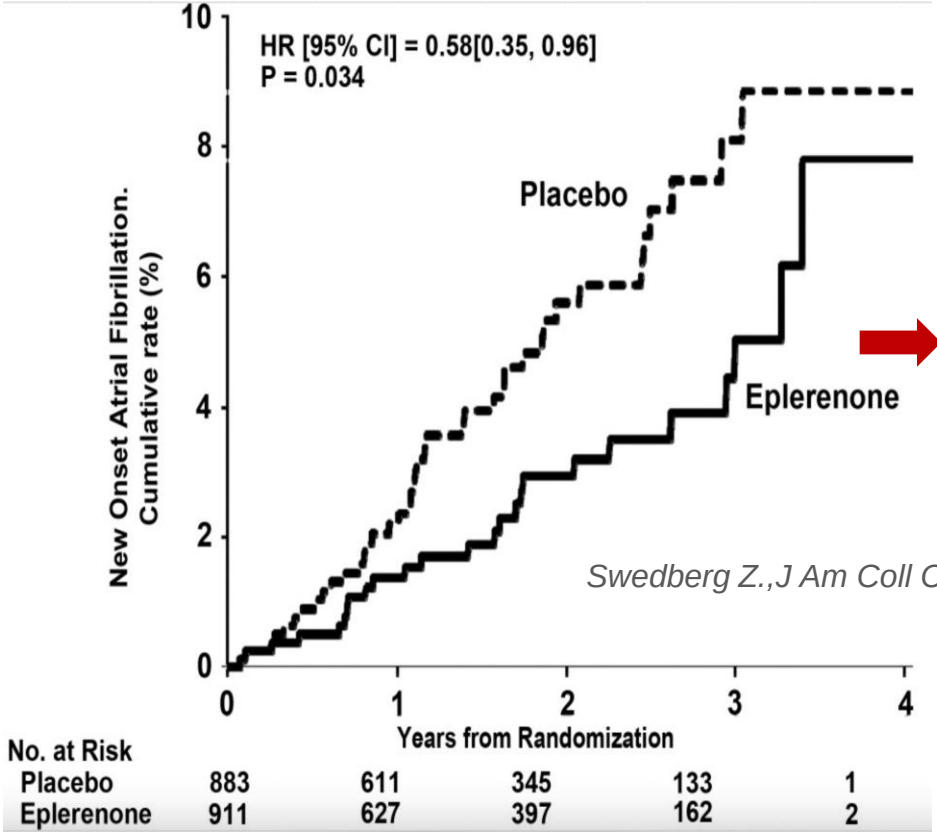
11 studií /56 808 pts



redukce FIS
ACEi/ARB 44%
BB 33%

Healey J.S., J Am Coll Cardiol 2005;**45**:1832–9.

EMPHASIS HF
2737 1:1 randomizace FU 21 měsiců



redukce FIS
Eplerenon 42%

Swedberg Z.,J Am Coll Cardiol 2012;**59**:1598–603.

V metaanalýzach
SGLT2 inh
18-37% redukce FIS

Pandey A.K., J Am Heart Assoc 2021;**10**:e022222

Komorbidity asociované s Fibrilaci síní

Srdeční selhání

HFpEF

EFLK > 50%

	Clinical variable	Values	Points
H2	Heavy	Body mass index > 30 kg/m²	2
	Hypertensive	2 or more antihypertensive medicines	1
F	Atrial fibrillation	Paroxysmal or persistent	3
P	Pulmonary hypertension	Doppler echocardiographic estimated pulmonary artery systolic pressure > 35 mmHg	1
E	Elder	Age > 60 years	1
F	Filling pressure	Doppler echocardiographic E/e' > 9	1
H2FPEF score			Sum (0 - 9)

Total Points 0 1 2 3 4 5 6 7 8 9

Probability of HFpEF 20% 30% 40% 50% 60% 70% 80% 90% 95%

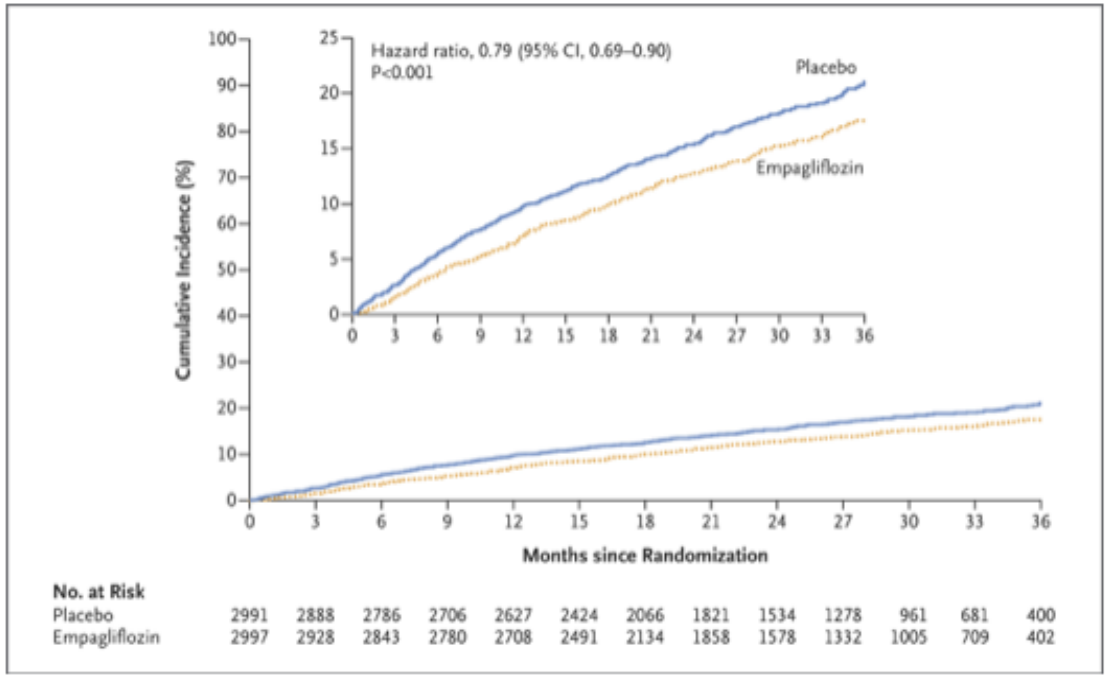
SGLT2 inh.

HFpEF SR:NTproBNP>300ng/l

HFpEF FIS: NTproBNP >900ng/l

EMPEROR PRESERVED

5988 pts, randomizace 1:1, FU median 26,2 měsiců



Primary Outcome, a Composite of Cardiovascular Death or Hospitalization for Heart Failure.

Stefan D, NEJM 2021

Komorbidity asociované s Fibrilaci síní

Diabetes mellitus 2 typu

Více jak intensivní snižování glyk. HbA1c <42mmol/mol se v ovlivnění rizika vzniku FIS u DM ukázal podstatnější výběr léků

Insulín potencuje fibrotickou přestavbu LS, deriváty sulfonylurey zvyšuju výskyt FIS

Fatemi O, Am J Cardiol 2014;**114**:1217–22

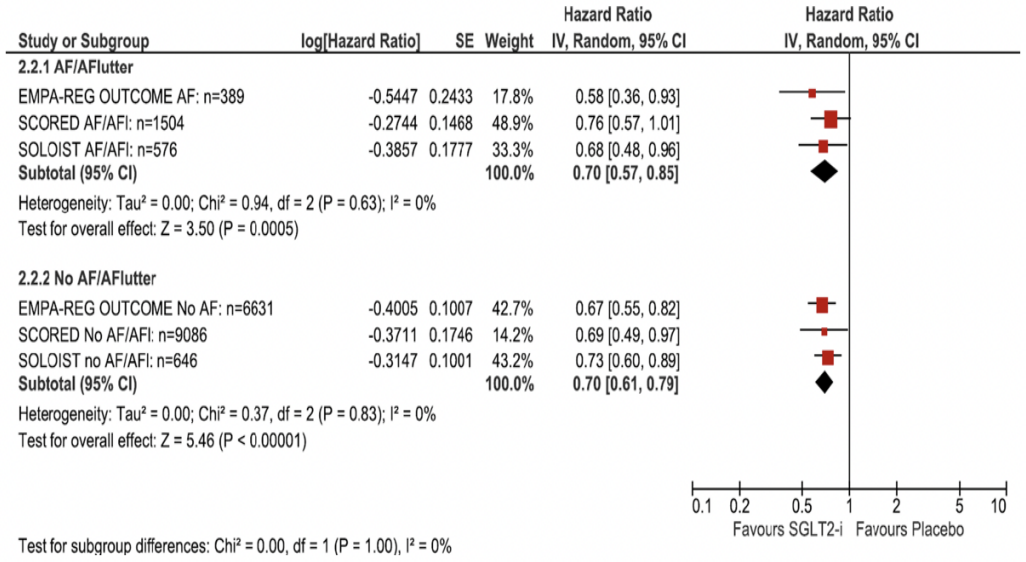
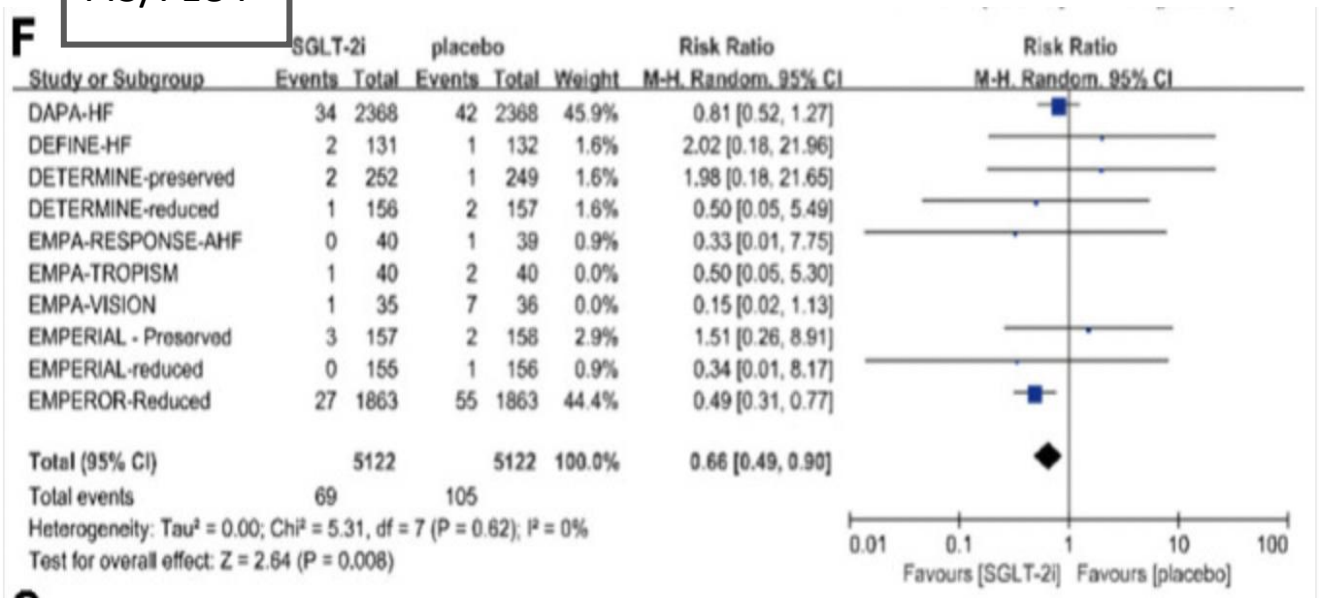


Figure 2. Forest plot demonstrating composite of heart failure hospitalization/urgent visit or cardiovascular death between patients on SGLT inhibitors vs placebo/control in randomized controlled trials stratified by presence or absence of atrial fibrillation/flutter at baseline.

Pandey A.K., J Am Heart Assoc 2021;**10**:e022222

FIS/FLUT



Yin Z., Front Cardiovasc Med 2022;**9**:902923

Komorbidity asociované s Fibrilaci síní

Obezita

Populační studie

21 499 pts
39-79 y

FU 17,1 let

1kg/m2 BMI = 4,7% rizika FIS

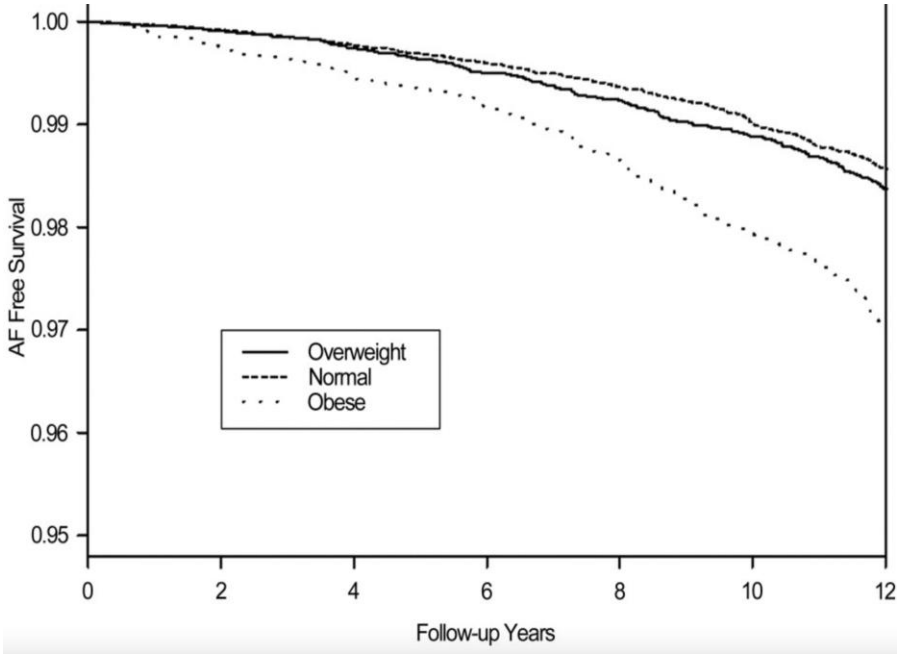
Di Benedetto L., *Eur J Prev Cardiol* 2018;**25**:1374–83

Woman‘s health study

34 309 žien

FU
12,9+/-1,9 l

Tedrow U.B., J Am Coll Cardiol 2010;**55**:2319–27

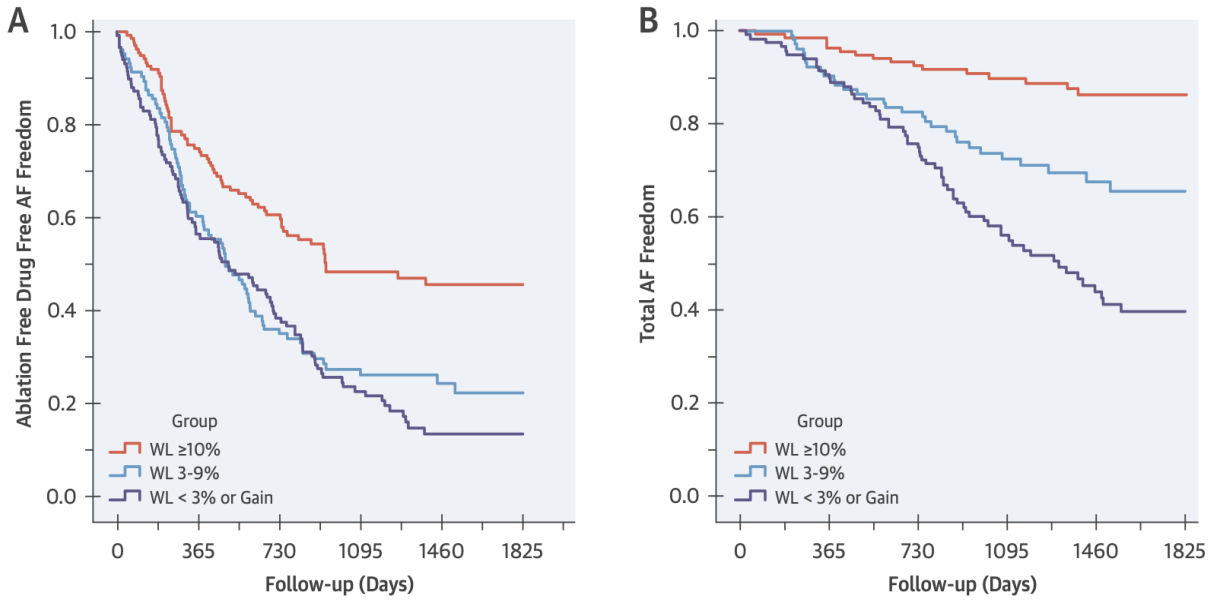


pts. kt. dále ještě přibrali
41% vyšší riziko vzniku FIS
ve srovnaní s tými co udrželi BMI < 30kg/m2 (p value:0.02)

Komorbidity asociované s Fibrilaci síní

Redukce váhy

Legacy trial



Time (Days)	0	365	730	1095	1460	1825
≥10 WL	135	101	72	42	31	18
3-9% WL	103	62	36	22	13	7
<3% WL or gain	117	66	44	22	11	9

0	365	730	1095	1460	1825
135	130	114	86	67	36
103	93	83	57	35	22
117	105	85	53	32	22

1,415 pts s FS, 825 s BMI >27 kg/m2
program redukce hmotnosti
355 zařazených

Skupiny dle úbytku na váze
1 (>10%)
2 (3% to 9%)
3 (<3%)

Pathak RK, et al. J Am Coll Cardiol 2015;65:2159–69)

Komorbidity asociované s Fibrilaci síní

Spánkové apnoe

Randomizovaná studie

2 717 pts
Střední/závažná SA

3,3 hod.
CPAP/noc

FU 3,7 let

Compliance???

↑ **Náladu**
Koncentraci

↓ **Chrápaní**
Denní spánek

Table 2. Primary and Secondary Cardiovascular End Points

End Point	CPAP Group (N=1346)	Usual-Care Group (N=1341)	Hazard Ratio (95% CI)	P Value
	no. (%)			
Primary composite end point*	229 (17.0)	207 (15.4)	1.10 (0.91–1.32)	0.34
Secondary end points				
Components of primary end point				
Death from cardiovascular causes	25 (1.9)	20 (1.5)	1.22 (0.68–2.20)	0.50
Myocardial infarction	42 (3.1)	39 (2.9)	1.06 (0.68–1.64)	0.80
Stroke	67 (5.0)	68 (5.1)	0.97 (0.69–1.35)	0.84
Hospitalization for heart failure	17 (1.3)	17 (1.3)	0.98 (0.50–1.92)	0.96
Hospitalization for unstable angina	99 (7.4)	90 (6.7)	1.09 (0.82–1.45)	0.56
Hospitalization for transient ischemic attack	16 (1.2)	9 (0.7)	1.75 (0.77–3.95)	0.18
Other vascular end points				
Composite of ischemic cardiovascular events†	207 (15.4)	191 (14.2)	1.07 (0.88–1.31)	0.49
Composite of major cardiovascular events‡	117 (8.7)	120 (8.9)	0.96 (0.74–1.23)	0.72
Composite of cerebral events§	80 (5.9)	74 (5.5)	1.06 (0.77–1.45)	0.72
Composite of cardiac events¶	167 (12.4)	157 (11.7)	1.06 (0.85–1.31)	0.62
Revascularization procedures	99 (7.4)	74 (5.5)	1.33 (0.98–1.79)	0.07
Death from any cause	40 (3.0)	43 (3.2)	0.91 (0.59–1.40)	0.67
New-onset atrial fibrillation‖	22 (1.6)	15 (1.1)	1.46 (0.76–2.81)	0.26
Newly diagnosed diabetes	66 (4.9)	76 (5.7)	0.85 (0.61–1.19)	0.35

McEvoy RD CPAP for prevention of cardiovascular events in obstructive sleep apnea. *N Engl J Med* 2016;**375**:919–31.

Komorbidity asociované s Fibrilaci síní

Fyzická aktivita

Analýza 402 406 respondentov, 52,5% žien, 40-69 let
Recruitment 4/2007- 12/2010

Guideline-Recommended Physical Activity (500-1500 MET-min/wk)

Atrial Fibrillation	Males: Incident AF ↓ 5-10% Females: Incident AF ↓ 6-15%
Ventricular Arrhythmias	Incident Ventricular Arrhythmias ↓ 11-22%
Bradyarrhythmias	No Association

Eliott A.D., Eur Heart J 2020;**41**:1479–86.

1 MET = 3,5 VO2 /ml/kg (čili VO2max)

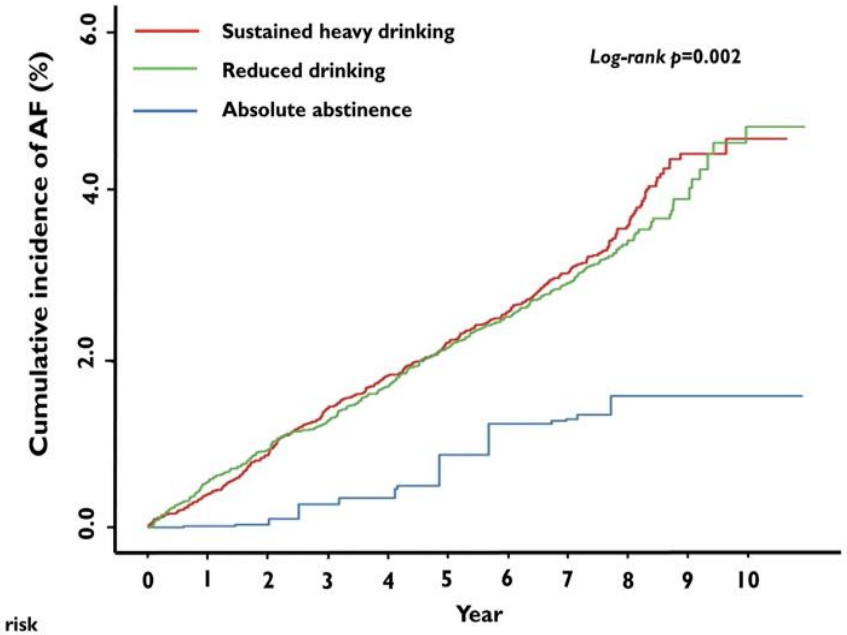
DOP:
150 -500 min lahká zátež/týden tj. < 54% maxim. PTF
80-120 min středně těžká zátěž/týden tj. 55-75% maxim. PTF

Komorbidity asociované s Fibrilaci síní

Alkohol

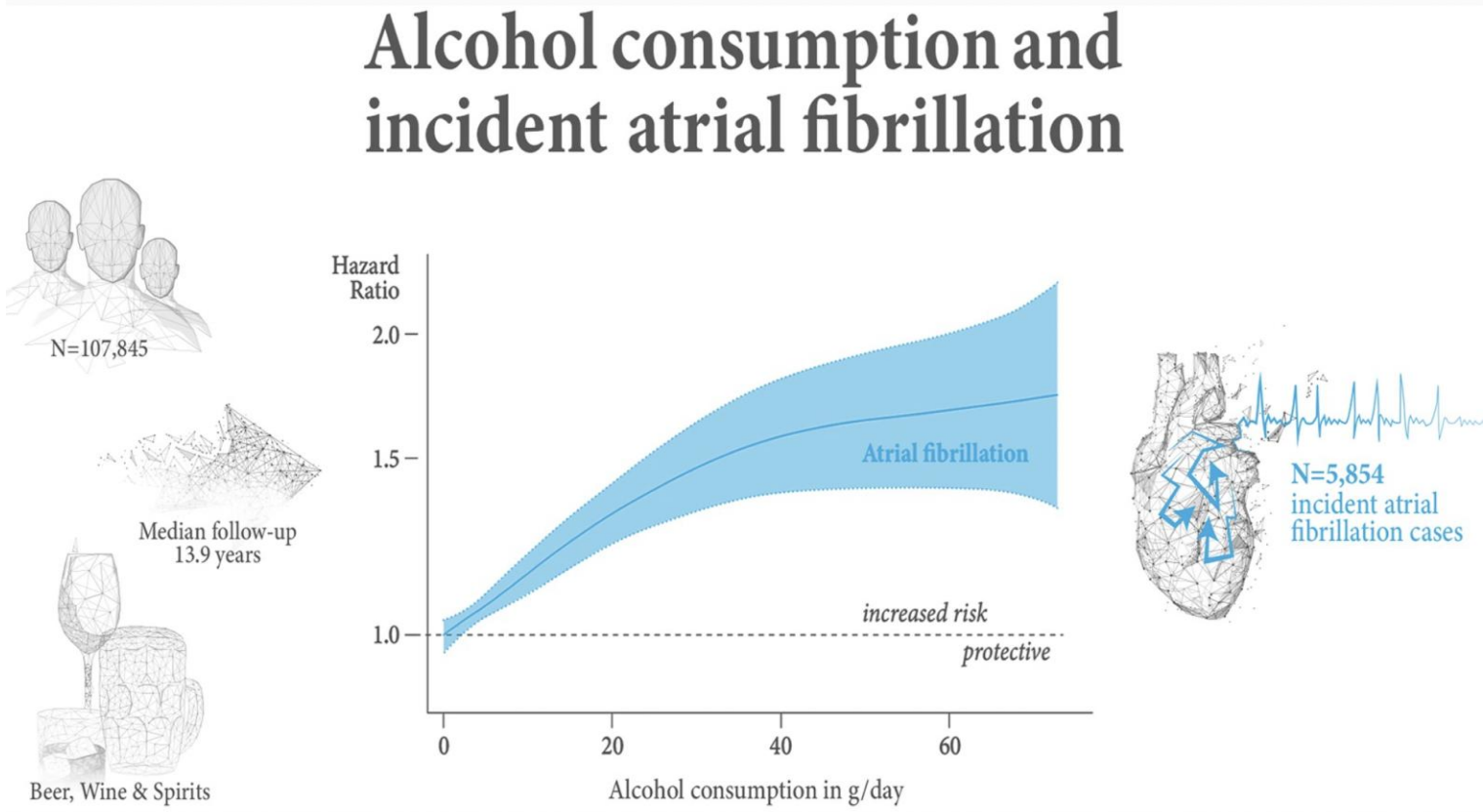
Recruitment: 2005-2012
406 700 participantov

Heavy drinking:
Muž>60g OH/týden
Žena: >40g OH/týden



Number at risk

Sustained heavy drinking	10629	10569	10521	10467	10427	10388	10351	10262	3778	1089	380
Reduced drinking	8419	8347	8312	8278	8242	8200	8164	8092	3442	1086	386
Absolute abstinence	377	374	373	371	370	367	366	363	228	101	37



Lee J.V.Eur J Prev Cardiol 2024;**31**:49–58.

Csengeri D., Eur Heart J 2021;**42**:1170–7.

Nezdravé životní návyky a výskyt FIS v čase

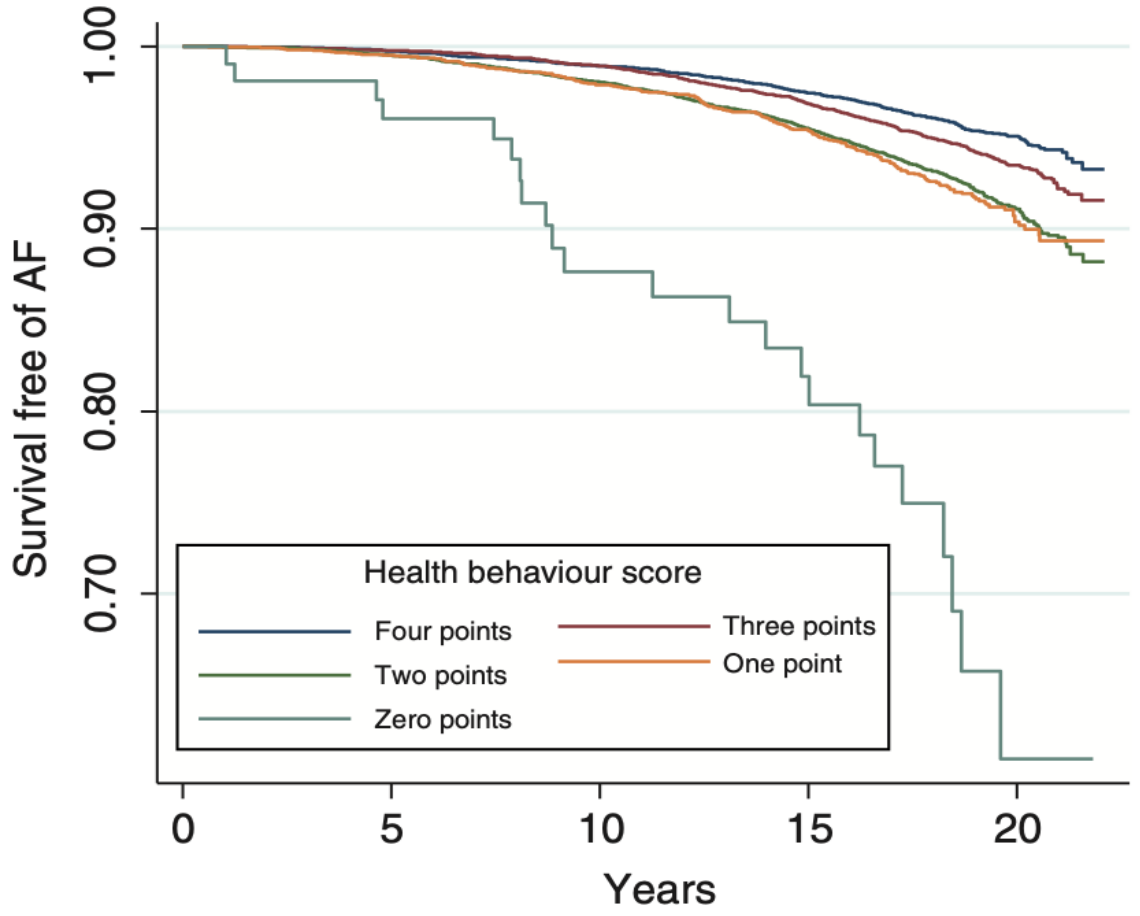
Populační studie

21 499 pts
39-79 y

FU 17,1 let

Table 1. Definition of healthy behaviours and health score.

Health behaviour	Definition	Weight for health score
Smoking habit	Non-smoker (never smoked, former smoker)	One point
Alcohol intake	Less than 14 units a week (one unit = c. 8 g of alcohol)	One point
Body composition	Body mass index < 25 kg/m^2	BMI < 25 kg/m^2: two points BMI 25–27.5 kg/m^2: one point
Physical activity	Not inactive (moderately inactive, moderately active, active)	Not included



Di Benedetto L., *Eur J Prev Cardiol* 2018;**25**:1374–83

Primární prevence RF a komorbidit ke snížení incidence Fibrilace síní

Doporučení ESC 2024

Primary prevention of AF—*Section 10.5*		
Maintaining optimal blood pressure is recommended in the general population to prevent AF, with ACE inhibitors or ARBs as first-line therapy.	I	B
Appropriate medical HF therapy is recommended in individuals with HFrEF to prevent AF.	I	B
Maintaining normal weight (BMI 20–25 kg/m^2) is recommended for the general population to prevent AF.	I	B
Maintaining an active lifestyle is recommended to prevent AF, with the equivalent of 150–300 min per week of moderate intensity or 75–150 min per week of vigorous intensity aerobic physical activity.	I	B
Avoidance of binge drinking and alcohol excess is recommended in the general population to prevent AF.	I	B
Metformin or SGLT2 inhibitors should be considered for individuals needing pharmacological management of diabetes mellitus to prevent AF.	IIa	B
Weight reduction should be considered in obese individuals to prevent AF.	IIa	B

Tabulka 2 – Parametry intenzity zátěže pro vytrvalostní sporty

Intenzita PA	VO_{2max} (%)	HR_{max} (%)	HRR (%)	RPE	Tréninková zóna
Nízká intenzita	< 40	< 55	< 40	10–11	Aerobní
Střední intenzita	40–69	55–74	40–69	12–13	Aerobní

HR: 220-věk=100%

Závěrem k VYŠETŘENÍ PACIENTA S FIBRILACI SÍNÍ

Lepší je chorobě předcházet než ji léčit - PREVENCE

MOTIVACE PACIENTU k změně životného stylu a ke spolupráci v zachovávaní doporučení/užívaní medikace

Věnovat POZORNOST NOVÝM DOPORUČENÍM v terapii komorbidit (sartany v terapii AH/FIS, SGLT2 inh. u HFpEF)

KOMPLEXNÍ PŘÍSTUP v terapii Fibrilace síní

Co nejdříve indikovat pacienta k NEFARMAKOLOGICKÉ TERAPII FIS v centru se zkušenostmi

Děkuji za pozornost