



Supraventrikulära extraslag och risk för förmaksflimmer och stroke

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Disposition

- SVES och risk för förmaksflimmer och stroke
- Mikroflimmer, vad är det?
- Kunskapsluckor vad gäller SVES
- Vad är det rimligt att göra när man hittar SVES, och varför?
- Vad jag inte tar upp: varför förmaksflimmer är viktigt

Cardiac Arrhythmias and Stroke

Increased Risk in Men With High Frequency of Atrial Ectopic Beats

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Background and Purpose—With the exception of atrial fibrillation (AF), little scientific attention has been given the associations between cardiac arrhythmias and incidence of stroke. We sought to study whether atrial and ventricular arrhythmias assessed during a 24-hour ambulatory ECG registration are associated with incidence of stroke.

Methods—The population-based cohort “Men Born in 1914” was examined with 24-hour ambulatory ECG registrations at 68 years of age. Four hundred two men without previous myocardial infarction or stroke were included, and 236 of them had hypertension ($\geq 160/95$ mm Hg or treatment). Fourteen-year rates of stroke (fatal and nonfatal) and all-cause mortality were updated from national and regional registers. Frequent or complex ventricular arrhythmias was defined as Lown class 2 to 5. A high frequency of atrial ectopic beats (AEB) was defined as the fifth quintile (ie, ≥ 218 AEB per 24 hours).

Results—Fifty-eight men suffered a first stroke during the follow-up. Stroke rates (per 1000 person-years) among men with AF ($n=14$), with frequent AEB ($n=77$), and without AF or frequent AEB ($n=311$) were 34.5, 19.5, and 11.6, respectively. The corresponding values among men with hypertension were 40.7, 32.3, and 14.7, respectively. Frequent AEB (compared with absence of AF and frequent AEB) was significantly associated with stroke among all men (relative risk=1.9; 95% CI, 1.02 to 3.4; $P=0.04$) and among hypertensive men (relative risk=2.5; 95% CI, 1.3 to 4.8; $P=0.009$) after adjustments for potential confounders. The increased stroke rates among men with Lown class 2 to 5 did not reach statistical significance.

Conclusions—A high frequency of AEB is associated with an increased incidence of stroke. (*Stroke*. 2000;31:2925-2929.)

Befolkningsbaserad prospektiv
kohort

N=402 män

Kvintil 5 = 215 SVES/24h

RR 1.9 utan hypertoni

RR 2.5 med hypertoni

Excessive Supraventricular Ectopic Activity and Increased Risk of Atrial Fibrillation and Stroke

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Background—Prediction of stroke and atrial fibrillation in healthy individuals is challenging. We examined whether excessive supraventricular ectopic activity (ESVEA) correlates with risk of stroke, death, and atrial fibrillation in subjects without previous stroke or heart disease.

Methods and Results—The population-based cohort of the Copenhagen Holter Study, consisting of 678 healthy men and women aged between 55 and 75 years with no history of cardiovascular disease, atrial fibrillation, or stroke, was evaluated. All had fasting laboratory tests and 48-hour ambulatory ECG monitoring. ESVEA was defined as ≥ 30 supraventricular ectopic complexes (SVEC) per hour or as any episodes with runs of ≥ 20 SVEC. The primary end point was stroke or death, and the secondary end points were total mortality, stroke, and admissions for atrial fibrillation. Median follow-up was 6.3 years. Seventy subjects had SVEC ≥ 30 /h, and 42 had runs of SVEC with a length of ≥ 20 SVEC. Together, 99 subjects (14.6%) had ESVEA. The risk of primary end point (death or stroke) was significantly higher in subjects with ESVEA compared with those without ESVEA after adjustment for conventional risk factors (hazard ratio=1.64; 95% confidence interval, 1.03 to 2.60; $P=0.036$). ESVEA was also associated with admissions for atrial fibrillation (hazard ratio=2.78; 95% confidence interval, 1.08 to 6.99; $P=0.033$) and stroke (hazard ratio=2.79; 95% confidence interval, 1.23 to 6.30; $P=0.014$). SVEC, as a continuous variable, was also associated with both the primary end point of stroke or death and admissions for atrial fibrillation.

Conclusions—ESVEA in apparently healthy subjects is associated with development of atrial fibrillation and is associated with a poor prognosis in term of death or stroke. (*Circulation*. 2010;121:1904-1911.)

Key Words: arrhythmia ■ prognosis ■ risk factors ■ stroke

Anrikad kohort, n= 678

ESVEA = 720 SVES / en 20 slag lång SVT,
14.6% av befolkningen

HR flimmer: 2.78 (95%CI 1.08-6.99)

HR stroke: 2.79 (95%CI 1.23-6.30)

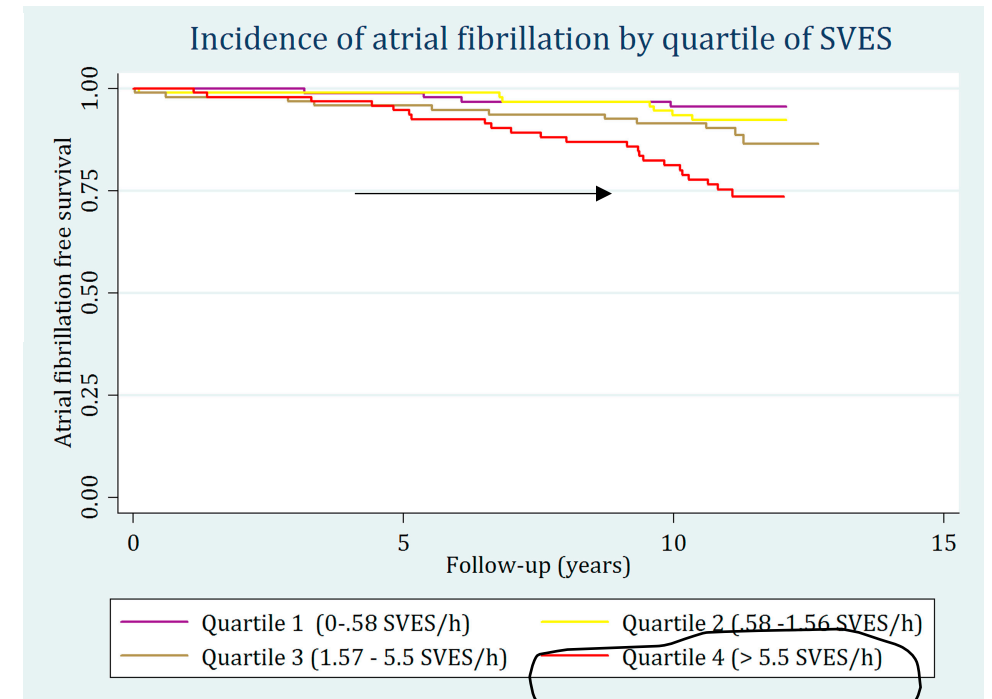
Förmaksflimmer i MKC-studien

Variable	Model 1			Model 2		
	HR	95% CI	P	HR	95% CI	P
No. of SVES per hour*	1.39	1.16–1.66	< .0001	1.38	1.14–1.68	.001
No. of SVT per hour*	1.86	1.20–2.90	.006	1.95	1.21–3.13	.006
Maximum heart rate at SVT*	1.08	0.95–1.24	.24	1.04	0.90–1.19	.661
Maximum duration of SVT*	1.18	0.98–1.43	.09	1.14	0.93–1.40	.219
Presence of ESVEA	3.06	1.64–5.70	< .0001	2.75	1.45–5.20	.002

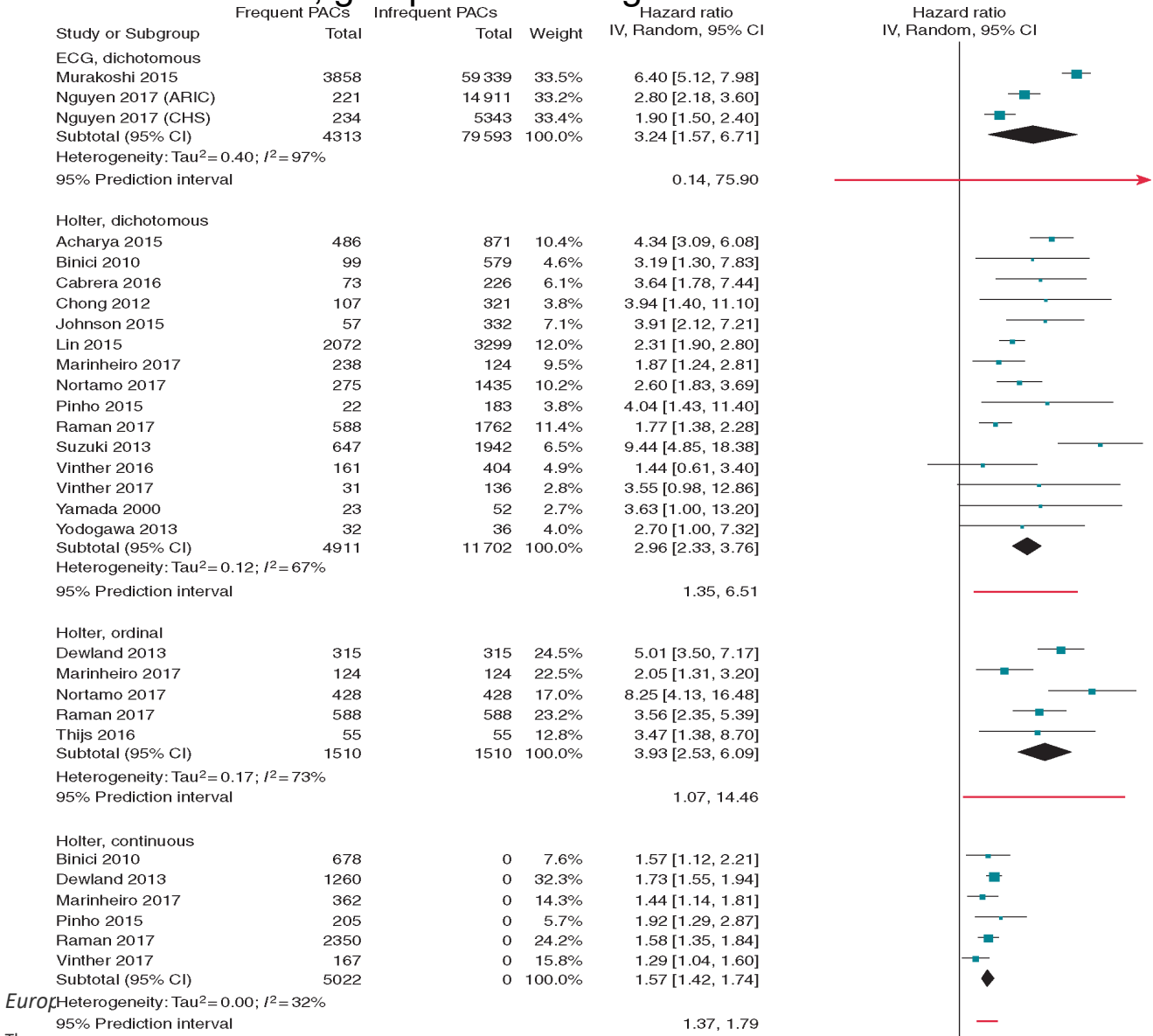
Model 1: adjusted for age and sex (383 cases and 45 events). Model 2: adjusted for model 1 plus height, weight, systolic blood pressure, smoking, and HOMA-IR (375 cases and 45 events).

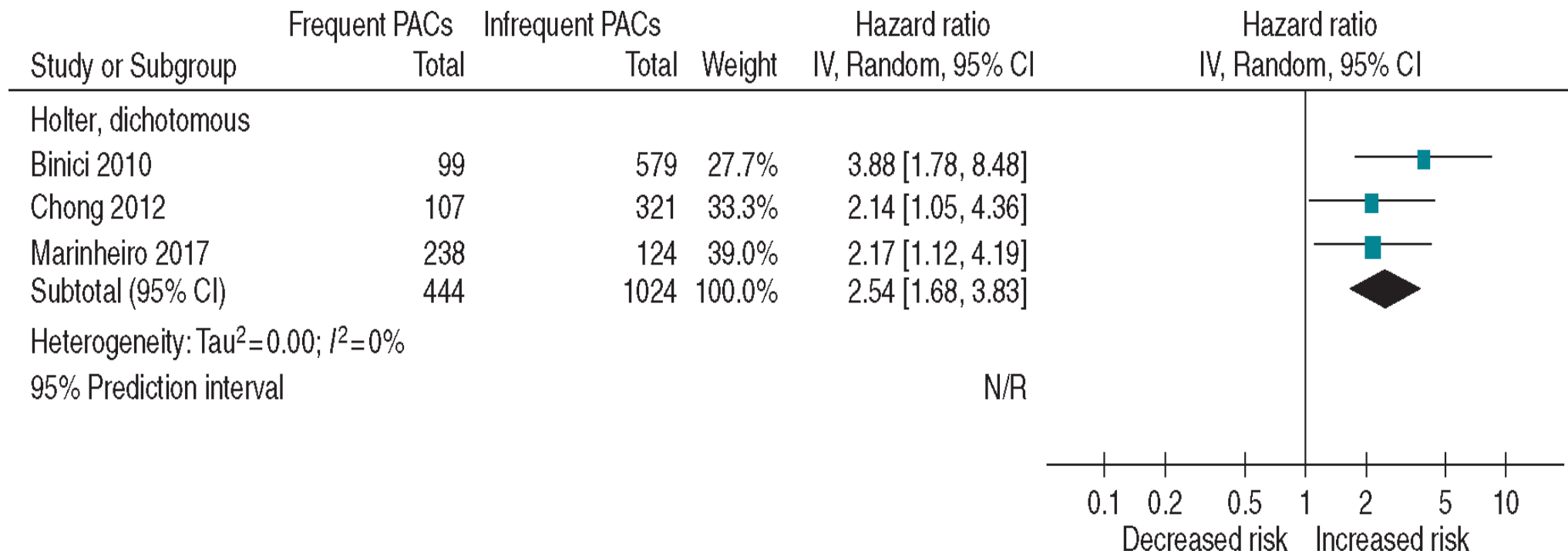
N=375

Befolkningsbaserat urval



Meta-analysis of studies that reported unadjusted hazard ratios for the outcome AF, grouped according to





Sannolikheten att detektera redan existerande flimmer är ökad hos de med frekventa SVES

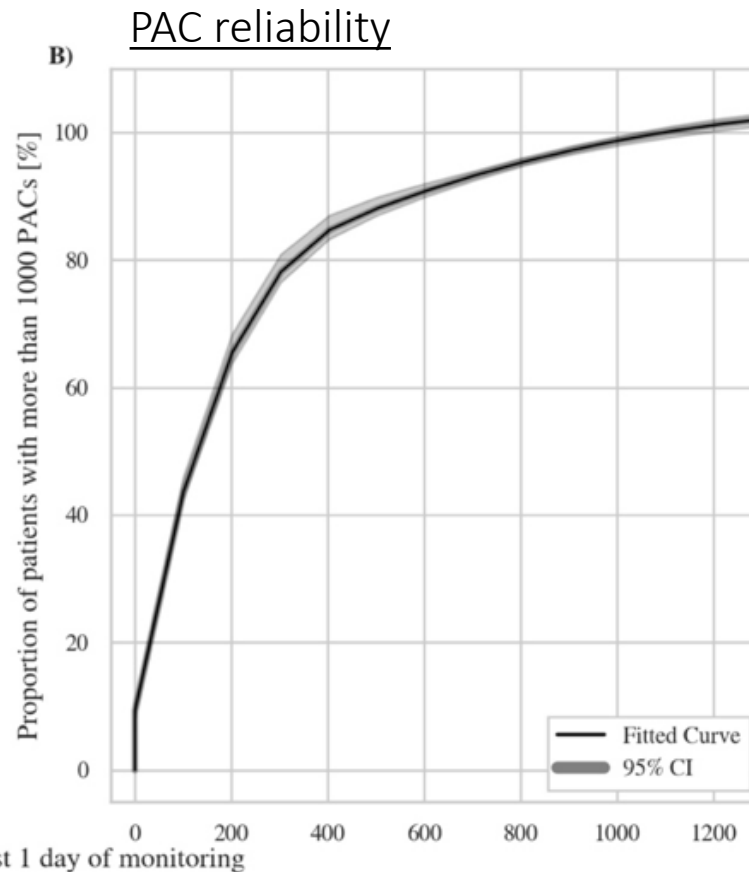
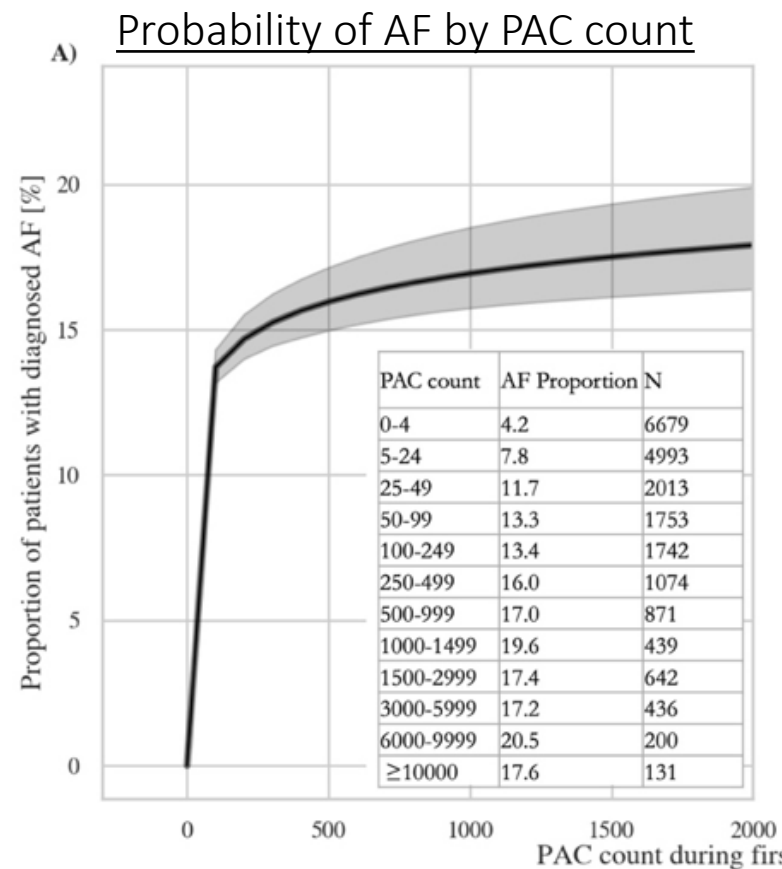


Figure 1a Proportion of patients with concurrent AF by PAC counts

Figure 1b Proportion of patients with ≥ 1000 PACs on a subsequent monitoring day, by PAC count on first monitored day

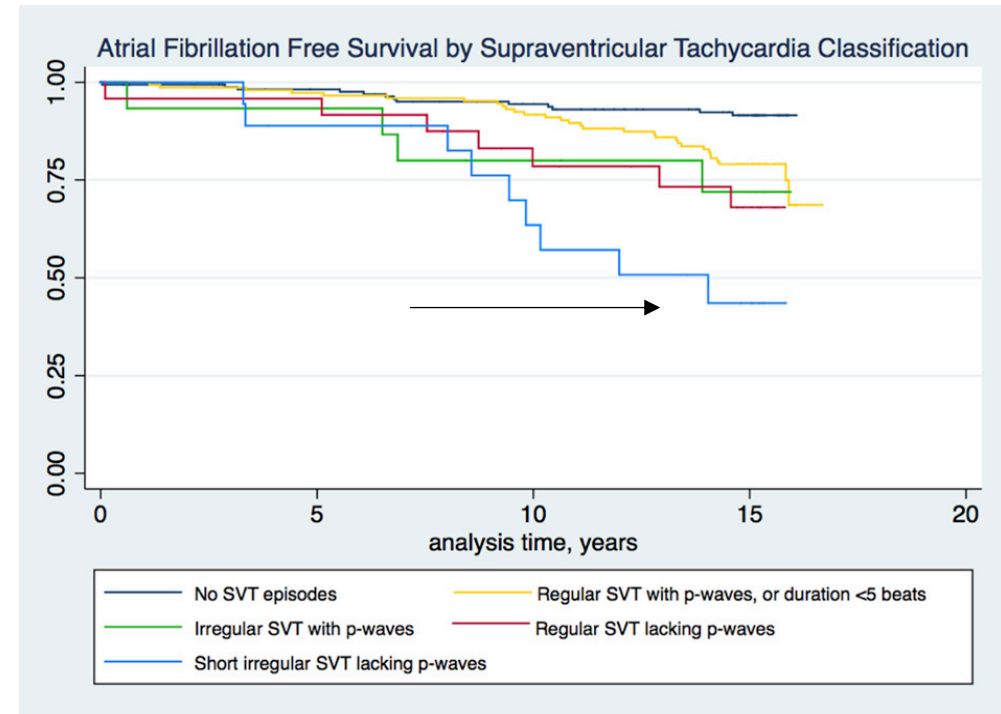
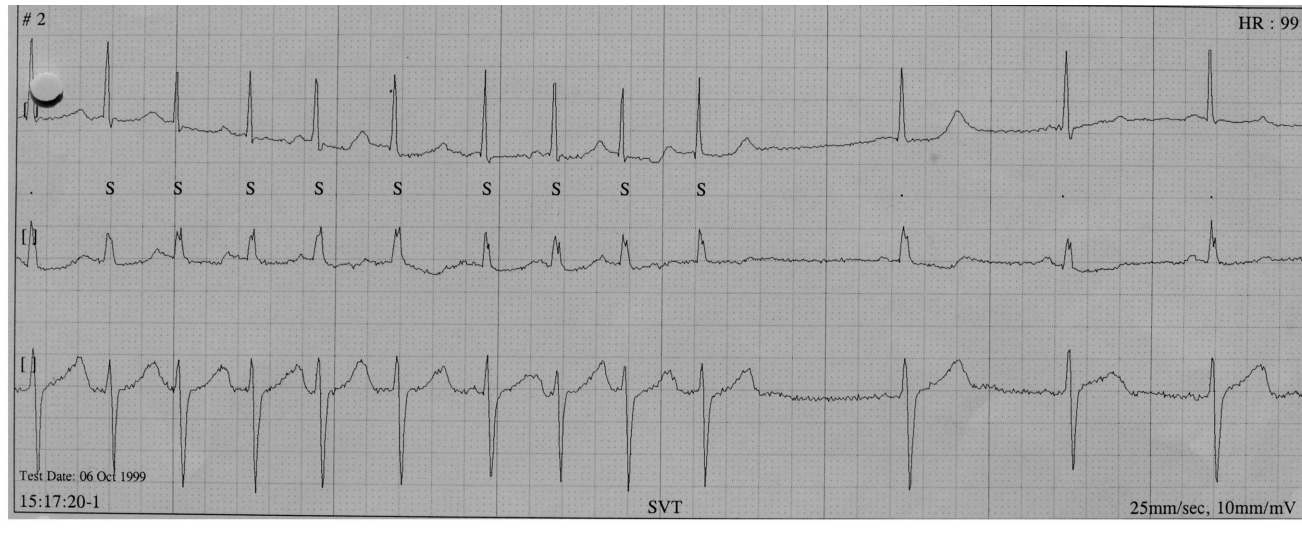
Chronbachs alpha for PAC reliability over 10 days resampling = 0.977

The reproducibility of low PAC counts was good. Only 5.5% of patients with 0-5 PACs during the first 24 h of monitoring (31.8% of the population), had ≥ 1000 PACs on an alternate monitoring day. In contrast, among subjects with 100 PACs the probability of a day with ≥ 1000 PACs was close to 50% (Fig 1B).

- The probability of AF detection on the subsequent monitoring increased with increasing PAC counts, reaching a plateau at around 250-1000 PACs.

Mikroflimmer

A

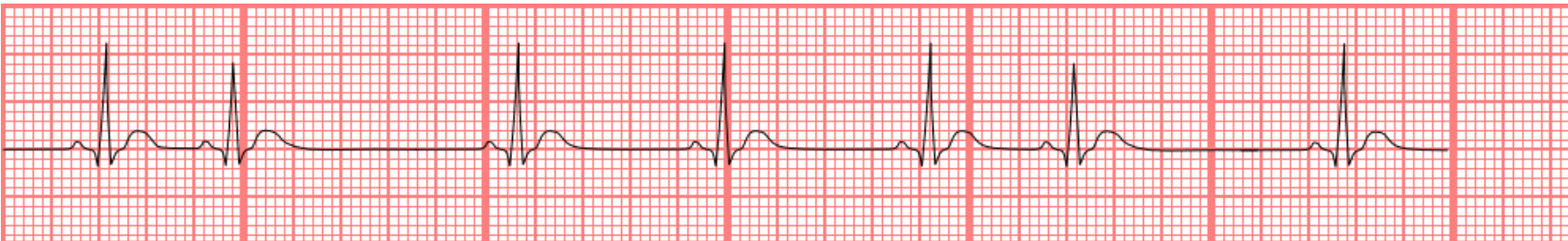


HR AF: 4.95 (95%CI 2.06–11.9; $P < .0001$)
5% av befolkningen

Johnson et al. Heart Rhythm 2018

Vad vet vi inte om SVES?

- Prematurt slag från ektopiskt fokus: 20% (30%?) prematurt, smalt komplex på EKG
- Riskfaktorer okända
- Inte känt om SVES alltid är farliga, eller om risken modifieras av andra faktorer
- Okänt om samma definition kan användas i alla åldersgrupper – betydande överlapp med sinusarytmi hos yngre individer.
- Optimal cutoffgräns vad gäller risk för flimmer och stroke okänd



Hur många SVES är det normalt att ha?

Table 3 Summary of prevalence of ectopy and tachycardia on ambulatory electrocardiogram in healthy populations

Age group (years)	Any SVE		SVE>500 in 24 hours		SVE>1000 in 24 hours		Any SVT	
	N	% (95% CI)	N	% (95% CI)	N	% (95% CI)	N	% (95% CI)
18–39	1508	43 (29 to 58)	1293	0 (0 to 1)	1293	0 (0 to 1)	1377	5 (1 to 12)
40–59	850	56 (28 to 32)	18	6 (0 to 27)	18	0 (0 to 19)	676	6 (2 to 13)
60–79	374	80 (57 to 96)	38	16 (5 to 30)	38	6 (0 to 17)	489	33 (0 to 82)
80–99	93	90 (47 to 100)	22	27 (11 to 50)	22	27 (11 to 50)	50	10 (3 to 22)
All	2825	64 (52 to 76)	1371	7 (0 to 21)	1371	3 (0 to 13)	2592	11 (4,19)

Förekomst av supraventrikulära arytmier hos friska individer. (Diabetiker, kranskärlssjuka och hypertoniker i stort exkluderade)

Frekventa SVES är ändå rätt ovanligt hos de som är helt friska.

Riskfaktorer för förmaksflimmer är inte helt förklarade, och kan inte antas vara helt uteslutna i meta-analysens population

Vad betyder det när vi hittar SVES, och finns det någon evidens för att göra något när vi gör det?

- Patienten har förmaksmyopati: ökad risk för att redan ha flimmer, och att senare utveckla förmaksflimmer och stroke

Strokeprevention

- Risken för stroke kan förebyggas med OAK ifall flimret detekteras i tid.

Regress av flimmer?

- Förmaksmyopati är sannolikt reversibelt, med livsstilsförändringar:
- ARREST-AF: Riskfaktormodifiering minskar risken för återfall efter ablation
- LEGACY: Viktnedgång minskar mängden flimmer hos obesa patienter med flimmer
- REVERSE-AF: Multifaktoriell riskfaktorbehandling reverserar flimmerprogress (viktnedgång >10% ledde till regress från persisterande till paroxysmalt hos 88%)
- SGLT2 hämmaren dapaglifozin (DECLARE-TIMI, typ 2 diabetiker,) minskar risken för flimmer hos typ 2 diabetiker HR 0.89 (95%CI 0.68-0.95).

Och rent praktiskt då?

- Holterfynd 1:
- Inget 30 s långt flimmer. 3st mikroflimmer (5-10 slag), 2000 SVES
- Svar:
- Ökat antal SVES. Vid tre tillfällen ses korta oregelbundna supraventrikulära takykardier utan p-vågor. Utseendet är som förmaksflimmer, men durationen kort (<30s). Förnyad undersökning bör övervägas.

Och rent praktiskt då?

- Holterfynd 2:
- Patient med riskfaktorer, t ex post stroke. 48h registrerade. 12,000 SVES/dygn, inga SVT.
- Svar:
- Kraftigt ökat antal SVES, vilket kan indikera ökad risk för förmaksflimmer. Upprepad registrering med längre registreringstid bör övervägas.



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