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Fibrillation auriculaire (FA)

Jeudi d'Unisanté
Avancées scientifiques 2021

27 janvier 2022

Vignette clinique

- Patient de 75 ans, connu pour une HTA traitée depuis 2016 par Lisinopril 10 mg.
- Il vient à votre cabinet pour un contrôle annuel.
- Une de ses amies a présenté un AVC attribué à une FA. Il se demande s'il ne devrait pas bénéficier d'un dépistage?

Quel conseil donner?

Contexte: fibrillation auriculaire

- Tachyarythmie la plus fréquente.
- Prévalence fortement liée à l'âge (1% population CH, 10% > 75 ans).
- ECG (30 sec; ESC 2020, niveau Ib).
- Traitement: anticoagulants oraux (ACO) + prise en charge FDRCV.



Peut être asymptomatique et intermittent...

Steven B Uittenbogaart et al. BMJ 2020; www.swissheart.ch; ESC 2020

Parmi des sujets de plus de 65 ans au cabinet :

Le dépistage «proactif» de la FA augmente-t-elle la détection, comparée à une pratique usuelle?

**Uittenbogaart S B, Verbiest-van Gorp N,
Lucassen W A M, et al.**

Opportunistic screening versus usual care for detection of atrial fibrillation in primary care: cluster randomised controlled trial

BMJ 2020; 370:m3208

OPEN ACCESS

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Opportunistic screening versus usual care for detection of atrial fibrillation in primary care: cluster randomised controlled trial

Steven B Uittenbogaart,¹ Nicole Verbiest-van Gorp,² Wim A M Lucassen,¹ Bjorn Winkens,³ Mark Nielen,⁴ Petra M G Erkens,⁵ André Knothnerus,² Henk C P M van Weert,¹ Henri E J H Stoffers⁶

ABSTRACT

OBJECTIVE

To investigate whether opportunistic screening in primary care increases the detection of atrial fibrillation compared with usual care.

DESIGN

Cluster randomised controlled trial.

SETTING

47 intention-to-screen and 49 usual care primary care practices in the Netherlands, not blinded for allocation. The study was carried out from September 2015 to August 2018.

PARTICIPANTS

In each practice, a fixed sample of 200 eligible patients, aged 65 or older, with no known history of atrial fibrillation in the electronic medical record system, were randomly selected. In the intention to screen group, 9218 patients eligible for screening were included, 55.0% women, mean age 75.2 years. In the usual care group, 9526 patients were eligible for screening, 54.3% women, mean age 75.0 years.

INTERVENTIONS

Opportunistic screening (that is, screening in patients visiting their general practice) consisted of three index tests: pulse palpation, electronic blood pressure measurement, and continuous monitoring with a handheld single lead electrocardiographic device. The reference standard was 12 lead ECG, performed in patients with at least one positive index test and in a sample of patients (10%) with three negative tests. If 12 lead ECG showed no atrial fibrillation, patients received more screening by continuous monitoring with a Holter electrocardiograph for two weeks.

MAIN OUTCOME MEASURES

Difference in the detection rate of newly diagnosed atrial fibrillation over one year in intention-to-screen versus usual care practices.

RESULTS

The study was completed for 8874 patients in the intention-to-screen practices and for 9102 patients in the usual care practices. 144 (1.62%) new diagnoses of atrial fibrillation in the intention-to-screen group versus 139 (1.53%) in the usual care group were found (adjusted odds ratio 1.06 (95% confidence interval 0.84 to 1.35)). Of 9218 eligible patients in the intention-to-screen group, 16 (0.18%) were found in the screening protocol. In these patients, 12 lead ECG detected newly diagnosed atrial fibrillation in 26 patients (0.6%). In the 266 patients who continued with Holter monitoring, four more diagnoses of atrial fibrillation were found.

Opportunistic screening for atrial fibrillation in primary care patients, aged 65 and over, did not increase the detection rate of atrial fibrillation, which implies that opportunistic screening for atrial fibrillation is not useful in this setting.

TRIAL REGISTRATION

Netherlands Trial Register No NL4726 (old NTR4914).

Introduction

Atrial fibrillation is a common cardiac arrhythmia and a major cause of stroke, heart failure, and other cardiovascular diseases.¹ The prevalence of atrial fibrillation in the general population, with an ageing population, the burden of atrial fibrillation is growing rapidly.^{2,3} Treatment with oral anticoagulant drugs reduces the risk of stroke by 60%. In 25% of patients who have had a stroke, however, atrial fibrillation is not diagnosed until after the stroke.⁴

Patients with atrial fibrillation might present with symptoms such as palpitations, shortness of breath, light headedness, or dizziness. Physicians can detect an irregular heart rhythm by physical examination and can confirm atrial fibrillation with 12 lead electrocardiogram (ECG). But the possible paroxysmal character of atrial fibrillation and the occasional asymptomatic course of the condition can hamper detection.⁵

Screening for atrial fibrillation could increase early detection and subsequent treatment of atrial fibrillation, and prevent strokes, but community screening for atrial fibrillation is still controversial.^{7,8} Randomised trials comparing the results of screening with usual care are lacking. Trials comparing the effect of treating atrial fibrillation detected by screening with oral anticoagulant agents are pending. The Screening for Atrial Fibrillation in the Elderly (SAFE) study is the only randomised controlled trial that has compared screening, by pulse palpation, with usual care, in a primary care population.⁹ Both systematic (inviting the whole target population) and opportunistic (only screening those who visited the practice) screening detected more new diagnoses than usual care (yearly incidence of atrial fibrillation 1.62% and 1.64% v 1.04%, respectively). The investigators preferred opportunistic screening because of the more labour intensive, costly, and intrusive approach of systematic screening.

Since the publication of the SAFE study in 2007, numerous devices have been developed to screen for atrial fibrillation (eg, electronic blood pressure monitors with an atrial fibrillation detection function and handheld single lead electrocardiographic devices).¹⁰ We performed the detecting and

Méthodologie

Population

Entre 2015 et 2018 aux Pays-Bas:

- 47 cabinets en *intention-to-screen* versus 49 contrôles.
- 200 patients aléatoires de + 65 ans (sans FA/PM/ou défibrillateur)par cabinet.

Intervention: Dépistage triple

- 1) Pouls radial (>15 sec. Suspect si irrégulier) +
- 2) Tensiomètre électronique (alarme automatique) +
- 3) ECG une piste (alarme automatique)

Méthodologie

Contrôle	Prise en charge usuelle au cabinet (recherche de FA si contexte clinique le requiert)
Outcome	Taux de détection de FA entre un dépistage «proactif» et une pratique usuelle.
Design	Essai clinique randomisé et contrôlé en cluster. Durée: 12 mois.

Résultats

- **9218** candidats interventions: **seuls 44,5 % ont été dépistés.**
- Age moyen: **75 ans**

Table 1 | Baseline characteristics of patients included in the Detecting and Diagnosing Atrial Fibrillation (D2AF) study

	Usual care	Intention to screen			P value*
		Total	Screened	Not screened	
No	9526	9218	4106	5112	—
Age (mean (SD))	75.0 (6.9)	75.2 (6.8)	73.5 (5.5)	76.6 (7.3)	<0.001†
Women (No (%))	5177 (54.3)	5071 (55.0)	2196 (53.5)	2875 (56.2)	0.008‡
Hypertension (No (%))	4579 (48.7)	4540 (49.6)	2098 (51.2)	2442 (48.3)	0.006‡
Stroke or transient ischaemic attack (No (%))	911 (9.7)	886 (9.7)	315 (7.7)	571 (11.3)	<0.001‡
Diabetes (No (%))	1750 (18.6)	1768 (19.3)	732 (17.9)	1036 (20.5)	0.002‡
Heart failure (No (%))	362 (3.9)	348 (3.8)	75 (1.8)	273 (5.4)	<0.001‡
Thromboembolism (No (%))	431 (4.6)	460 (5.0)	191 (4.7)	269 (5.3)	0.15‡

SD=standard deviation.

International Classification of Primary Care codes were used: for hypertension K86 or K87, or both; for stroke K90; for transient ischaemic attack K89; for diabetes T90; for heart failure K77; and for thromboembolism K93 or K94, or both.

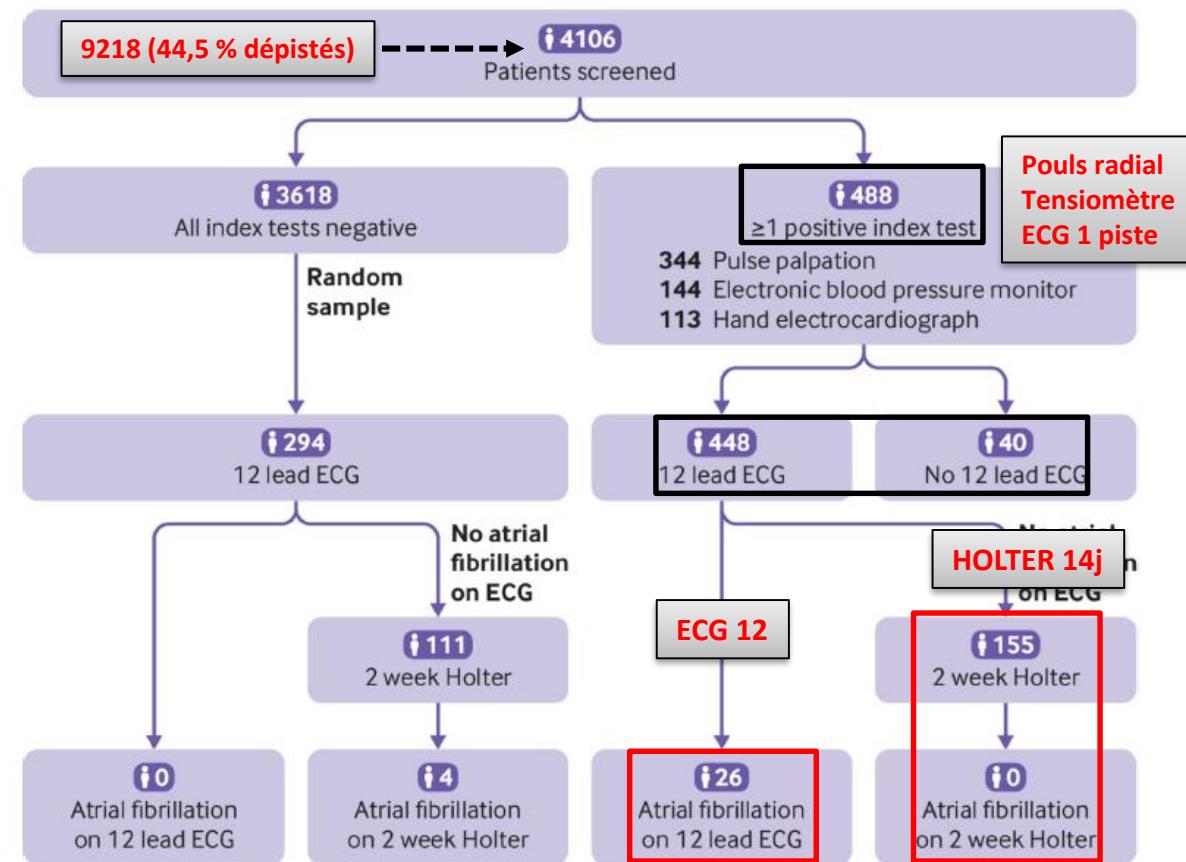
For intention to screen and usual care, 62 patients (0.7%) and 127 (1.3%) had missing values for all comorbidities.

* Screened versus not screened in the intention-to-screen group.

Résultats

Screening-protocol

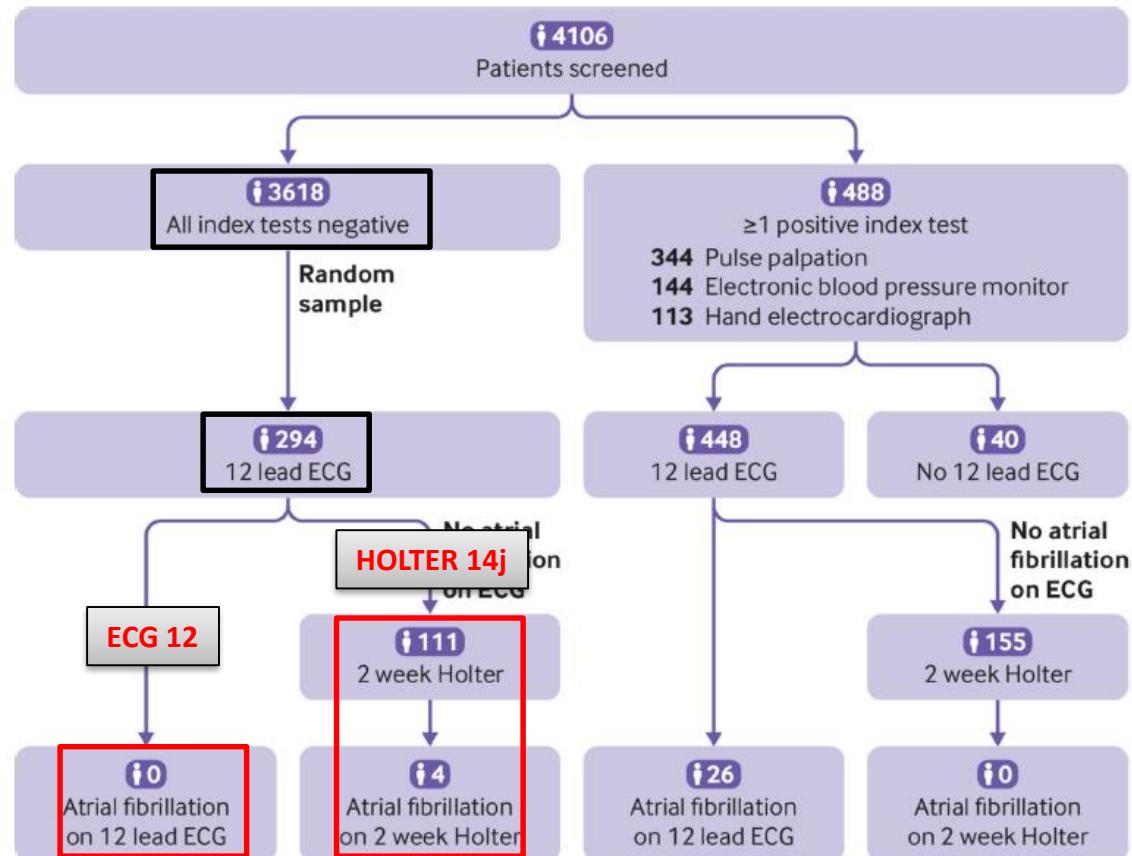
488 suspicions de FA



Résultats

Screening-protocol

3618 dépistages négatifs



Résultats

Screening-protocol: parmi **4106** dépistages réalisés:

- Dépistages positifs, n=488 : dont **26** FA confirmées par ECG et **0/155** par holter.
- Dépistages négatifs, n=3618 : **0/294** ECG et **4** FA découvertes sur 111 holters aléatoires.

Total 742 ECG, complétés par **266 holters** → **30 FA (0.7% de 4106)**

Follow-up de 12 mois :

- Groupe intervention: **144** nouvelles FA, à savoir **1.62%** (n= 8874)
- Groupe contrôle: **139** nouvelles FA, **1.53 %** (n=9102) (adj. OR 1.06 (95% CI 0.84 to 1.35))

Conclusion des auteurs

Les dépistage «proactif» de la FA chez les sujets ambulatoires de + de 65 ans n'augmente pas le taux de détection, comparé à un groupe contrôle.

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RESEARCH

OPEN ACCESS

Opportunistic screening versus usual care for detection of atrial fibrillation in primary care: cluster randomised controlled trial

Steven B Littenbogaard,¹ Nicole Verbiest-van Gurp,¹ Wim AM Lucasen,¹ Bjorn Winkens,¹ Mark Nielen,⁴ Petra M Eijkemans,^{3,4} André Knottnerus,² Henk C P M van Weert,¹ Henk E J H Stoofers²

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ABSTRACT

OBJECTIVE

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SETTING

47 intention-to-screen and 49 usual care primary care practices in the Netherlands, not blinded for allocation; the study was carried out from September 2015 to August 2018.

PARTICIPANTS

In each practice, a fixed sample of 200 eligible patients, aged 65 or older, with no known history of atrial fibrillation, were randomly assigned to the screening system, were randomly selected. In the intention-to-screen group, 9218 patients eligible for screening were included; 55.6% women, mean age 75.2 years. In the usual care group, 9526 patients were eligible for screening; 54.3% women, mean age 75.0 years.

INTERVENTIONS

Opportunistic screening (ie, screening in patients visiting their general practice) consisted of three index tests: pulse palpation, electronic blood pressure measurement with an atrial fibrillation algorithm, and electrocardiography (ECG) with a handheld single lead electrocardiographic device. The reference standard was 12 lead ECG, performed in patients with at least one positive index test. In a sample of patients (total n=1000) from the three reference tests, if no 12 lead ECG showed atrial fibrillation, patients were invited for more screening by continuous monitoring with a Holter electrocardiograph for two weeks.

MAIN OUTCOME MEASURES

Difference in the detection rate of newly diagnosed atrial fibrillation over one year in intention-to-screen versus usual care practices.

RESULTS

Follow-up was complete for 8876 patients in the intention-to-screen practices and for 9102 patients in the usual care practices. 144 (1.6%) new diagnoses of atrial fibrillation in the intention-to-screen group versus 139 (1.5%) in the usual care group were detected during follow-up (absolute difference in intention 0.84 to 0.35). Of 9218 eligible patients in the intention-to-screen group, 4106 (45.4%) participated in the screening protocol. In these patients, 12 lead ECG detected newly diagnosed atrial fibrillation in 26 patients (0.63%). In the 266 patients who continued with Holter monitoring, four more diagnoses of atrial fibrillation were found.

CONCLUSIONS

Opportunistic screening for atrial fibrillation in primary care patients, aged 65 and over, did not increase the detection rate of atrial fibrillation, which implies that opportunistic screening for atrial fibrillation is not useful in this setting.

TRIAL REGISTRATION

Netherlands Trial Register No NL4776 (old NTR4914).

Atrial fibrillation is a common cardiac arrhythmia and a major cause of stroke, heart failure, and other cardiovascular diseases.¹ The prevalence of atrial fibrillation increases with age, and with the ageing population, the burden of atrial fibrillation is growing rapidly.^{2,3} Treatment with oral anticoagulant drugs reduces the risk of stroke by 60%.⁴ In 25% of patients who have had a stroke, however, atrial fibrillation is not diagnosed until after the stroke.⁵

Patients with atrial fibrillation might present with symptoms such as palpitations, dizziness, shortness of breath, headache, or fatigue. Patients can detect an irregular heart rhythm by physical examination and can confirm atrial fibrillation with a 12 lead electrocardiography (ECG).⁵ But the possible paroxysmal character of atrial fibrillation and the occasional asymptomatic course of the condition can hamper detection.⁶

Screening for atrial fibrillation could increase early detection and subsequent treatment of atrial fibrillation, and prevent strokes, but the evidence for this is limited and mainly from small community trials.^{7,8} Randomised trials comparing the outcome of screening with usual care are lacking. Trials evaluating the effect of treating atrial fibrillation detected by screening with oral anticoagulant agents are pending. The Screening for Atrial Fibrillation in the Elderly (SAFE) study is the only randomised trial comparing screening with usual care, by pulse palpation, with usual care, in a primary care population. Both systematic (inviting the whole target population) and opportunistic (only screening patients who visited the practice) screening detected more new diagnoses than usual care (yearly incidence of atrial fibrillation 1.62% and 1.64% v 1.04%, respectively).⁹

The investigation preferred opportunistic screening because of the more labour intensive, costly, and intrusive nature of systematic screening.

Since the publication of the SAFE study in 2007, numerous devices have been developed to screen for atrial fibrillation (eg, electronic blood pressure monitors with an atrial fibrillation detection function and handheld single lead electrocardiographic devices).¹⁰ We performed the Detecting and

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Steven B Uittenbogaart et al. BMJ 2020;370:bmj.m3208

Forces et faiblesses

Forces :

- a) Population de > 65 ans en cabinet.
- b) Investigateur du groupe contrôle en aveugle (réduit biais de détection).
- c) Matériel accessible et réaliste (pouls, tensiomètre et ECG 1 piste).

Faiblesses :

Implications pour la pratique

«Une de mes amies a présenté un AVC suite à une FA...dois-je me faire dépister?»

Les auteurs ne suggèreraient pas de dépistage dans cette situation (pouls, ECG, Holter).

Que disent les cardiologues?

- Rendement faible du dépistage (pouls, ECG) si asymptomatique.
- FDRCV...le nerf de la guerre?
 - *The simple Atrial fibrillation Better Care Pathway* (Proietti M and al, Am J Med 2018).

Que dit l'ESC (European Society of Cardiology) 2020? :

- Peu d'évidence en faveur du dépistage systématique si asymptomatique (IIaB)
- **Partage risques/bénéfices** est important avant un dépistage “opportuniste” (degré IB, +65 ans ou HTA).

Questions autour du dépistage de la FA

1. Quel outil de dépistage utiliser et à quelle fréquence?
2. Quel impact clinique de l'anticoagulation sur les *outcomes CV*? effets indésirables?
3. Quel *NNT* (population cible)?
4. La durée de FA mesurée a-t-elle son importance?
5. Quid du concept *The simple Atrial fibrillation Better Care Pathway*?

.... À suivre

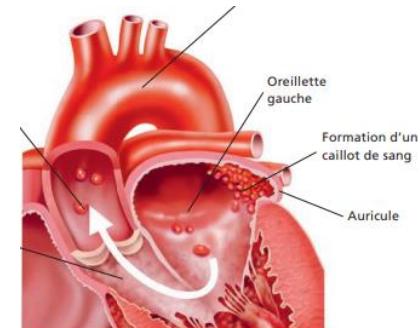
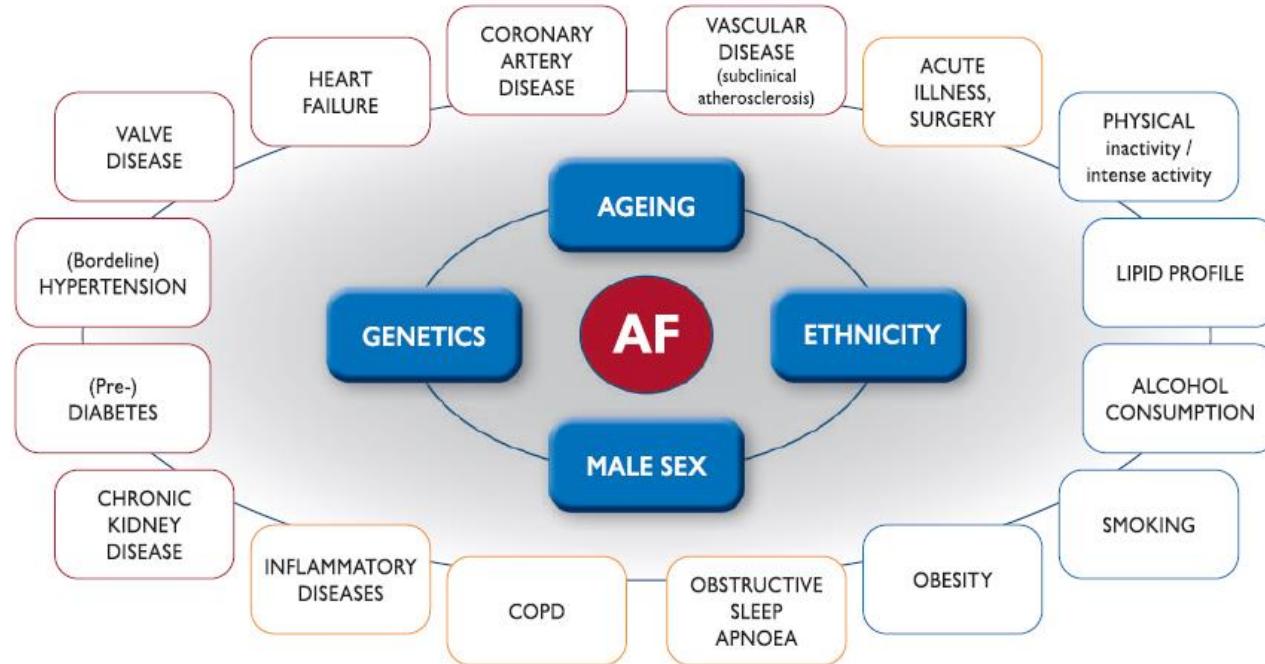


Figure 4: Formation d'un caillot de sang dans l'auricule gauche

Merci pour votre attention!

Dias complémentaires

Facteurs de risque de FA



The simple Atrial fibrillation Better Care pathway (ABC)?

Exemple du surpoids

Impact d'un programme de contrôle du poids chez 355 patients avec un IMC $\geq 27 \text{ kg} / \text{m}^2$ et une FA paroxystique ou persistante.

Perte pondérale de $\geq 10\%$:

- symptômes moins marqués,
- charge en FA moindre
- probabilité plus élevée de maintien en rythme sinusal.

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ORIGINAL INVESTIGATIONS

Long-Term Effect of Goal-Directed Weight Management in an Atrial Fibrillation Cohort

A Long-Term Follow-Up Study (LEGACY)

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ABSTRACT

BACKGROUND Obesity and atrial fibrillation (AF) frequently coexist. Weight loss reduces the burden of AF, but whether this is sustained, has a dose effect, or is influenced by weight fluctuation is unknown.

OBJECTIVES This study sought to evaluate the long-term impact of weight loss and weight fluctuation on rhythm control in obese individuals with AF.

METHODS Of 1,415 consecutive patients with AF, 825 had a body mass index $\geq 27 \text{ kg}/\text{m}^2$ and were offered weight management. After screening for exclusion criteria, 355 were included in this analysis. Weight loss was categorized as group 1 ($\geq 10\%$), group 2 (3% to 9%), and group 3 (<3%). Weight trend and/or fluctuation was determined by yearly follow-up. We determined the impact on the AF severity scale and 7-day ambulatory monitoring.

RESULTS There were no differences in baseline characteristics or follow-up among the groups. AF burden and symptom severity decreased more in group 1 compared with groups 2 and 3 ($p < 0.001$ for all). Arrhythmia-free survival with and without rhythm control strategies was greatest in group 1 compared with groups 2 and 3 ($p < 0.001$ for both). In multivariate analyses, weight loss and weight fluctuation were independent predictors of outcomes ($p < 0.001$ for both). Weight loss $\geq 10\%$ resulted in a 6-fold (95% confidence interval: 3.4 to 10.3; $p < 0.001$) greater probability of arrhythmia-free survival compared with the other 2 groups. Weight fluctuation $> 5\%$ partially offset this benefit, with a 2-fold (95% confidence interval: 1.0 to 4.3; $p = 0.02$) increased risk of arrhythmia recurrence.

CONCLUSIONS Long-term sustained weight loss is associated with significant reduction of AF burden and maintenance of sinus rhythm. (Long-Term Effect of Goal directed weight management on Atrial Fibrillation Cohort: A 5 Year follow-up study [LEGACY Study]; [ACTRN12614001123639](http://dx.doi.org/10.1016/j.jacc.2015.01.002)) (J Am Coll Cardiol 2015;65:2159-69) © 2015 by the American College of Cardiology Foundation.

Does AF screening and use of OA prevent stroke in individuals at high risk?

L'Etude LOOP, Lancet 2021: essai clinique randomisé et contrôlé, diagnostique 3x plus de FA dans son groupe intervention :

- 477 (31.8%) FA parmi 1501 gr. intervention versus 550 (12.2%) parmi 4503 contrôles (HR 3.17 [95% CI 2.81-3.59]; p<0.0001).

CAVE: durée de > 64 mois, population à risque, *outcome primaire*: événements CV, utilisation d'un *implantable loop recorder (ILR)* gr. Intervention.



D. Graf and al., Rev Med Suisse 2007 ; 3 : 2914-8
Medtronic Reveal device.

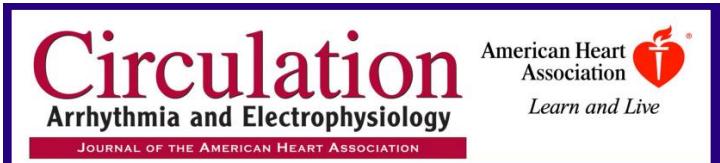
Etude LOOP: *does AF screening and use of OA prevent stroke in individuals at high risk?*

Population	Individuals without AF, 70-90 years, with at least one stroke risk factor (ie, HT, diabetes, previous stroke, or heart failure).
Intervention	<ul style="list-style-type: none">- randomly assigned in a 1:3 ratio to ILR monitoring or usual care (control) via an online system- 1501 (25·0%) to ILR monitoring and 4503 (75·0%) to usual care.- Median follow-up of 64·5 months
Outcome	Primary outcome: time to first stroke or systemic arterial embolism
Design	RCT in 4 centres in Denmark
Résultats	AF diagnosed in 1027: <ul style="list-style-type: none">- 477 (31·8%) of 1501 in the ILR group- versus 550 (12·2%) of 4503 in the control group ([HR]3·17 [95% CI 2·81-3·59]; p<0·0001).
	Those in the ILR group had three times the rates of AF detection and anticoagulation initiation, but no change in rates of stroke or arterial embolization . These findings might imply that not all atrial fibrillation is worth screening for , and not all screen-detected atrial fibrillation merits anticoagulation

Etude STROKESTOP: *can systematic screening for AF reduce mortality and morbidity compared with no screening?*

Population	Holland et Stockholm 28000 individuals, 75-76 years, without AF
Intervention	Systematic monitoring with ECG 14 days versus usual care. Follow-up : 6.9 ans.
Contrôle	Groups: 1:1 systemic screening versus usual care.
Outcome	Outcomes (ie, a composite of <u>ischemic</u> or hemorrhagic stroke, systemic embolism, <u>bleeding</u> leading to hospitalization, and all-cause death)
Design	Multicentric, randomised, controlled.
Résultats et conclusion	5·45 events per 100 years [95% CI 5·52-5·61] in controls vs 5·68 per 100 years [5·52-5·85] among screened; HR 0·96 [95% CI 0·92-1·00]; p=0·045

Quid de la durée de la FA enregistrée?



The Relationship Between Daily Atrial Tachyarrhythmia Burden From Implantable Device Diagnostics and Stroke Risk: The TRENDS Study

Taya V. Glotzer, MD; Emile G. Daoud, MD; D. George Wyse, MD, PhD; Daniel E. Singer, MD; Michael D. Ezekowitz, MD, PhD; Christopher Hilker, MS; Clayton Miller, BS; Dongfeng Qi, PhD and Paul D. Ziegler, MS
Circ Arrhythmia Electrophysiol. 2009; 2:474-480.

3382 individus sur 1.4 ans. CHADS2 risk score of 2
40 événements Thrombo-emboliques

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TRENDS Results

Cox proportional hazard model adjusting for baseline stroke risk factors & time dependent AT/AF burden & antithrombotic therapy

Variable	Hazard Ratio*	95% Confidence Interval	p-value
Low Burden < 5.5 hours	0.98	0.34 to 2.82	0.97
High Burden ≥ 5.5 hours	2.20	0.96 to 5.05	0.06

*compared to no AT/AF burden

≥5.5 h de FA enregistré (30 jours) 30 day double le risqué d'événements.