Med Clin (Barc). 2017;148(1):8–15

MEDICINA CLINICA

www.elsevier.es/medicinaclinica

Original article

Opportunistic screening for atrial fibrillation versus detecting symptomatic patients aged 65 years and older: A cluster-controlled clinical trial☆

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ARTICLE INFO

Article history:
Received 26 May 2016
Accepted 13 July 2016
Available online 7 February 2017

Keywords:
Atrial fibrillation
Opportunistic screening
Case finding
Heart rhythm disorders

ABSTRACT

Objective: The goal of this study was to assess the effectiveness of opportunistic screening through pulse palpation in the early detection of atrial fibrillation in subjects aged ≥65 years versus detection through an active search for patients with symptoms and/or complications and sequelae associated.
Material and methods: This was a cluster randomized controlled trial performed in 48 primary care centers of the Spanish National Healthcare System. A total of 368 physicians and nurses were randomized. The researchers in the experimental group (EG) performed opportunistic screening for auricular fibrillation, whereas the researchers in the control group (CG) actively searched for symptomatic patients. An ECG was performed on patients found to have an irregular heartbeat to confirm the diagnosis of auricular fibrillation.
Results: A total of 5465 patients with a mean age of 75.61 years were recruited for the EG, and 1525 patients with a mean age of 74.07 years were recruited for the CG. Of these, 58.6% were female, without significant differences between groups. Pulse was irregular in 4.3 and 15.0% of the patients in the EG and the CG, respectively ($p < 0.001$). A total of 164 new cases of atrial fibrillation were detected (2.3%), 1.1% in the EG and 6.7% in the CG (adjusted OR: 0.29; 95%CI 0.18–0.45).
Conclusions: Case finding for atrial fibrillation in patients aged ≥65 years with symptoms or signs suggestive of atrial fibrillation is a more effective strategy than opportunistic screening through pulse palpation in asymptomatic patients.
Trial registration: The trial is registered in ClinicalTrials.gov (NCT01291953; February 8, 2011).

☆ Please cite this article as: González Blanco V, Pérula de Torres LÁ, Martín Rioboó E, Martínez Adell MÁ, Parras Rejano JM, González Lama J, et al. Cribado oportunista de fibrilación auricular frente a detección de pacientes sintomáticos de 65 años o más: ensayo clínico controlado por clúster. Med Clin (Barc). 2017;148:8–15.
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◊ More information on the components of the group is available in the Appendix A which can be consulted in the electronic version.

Cribado oportunista de fibrilación auricular frente a detección de pacientes sintomáticos de 65 años o más: ensayo clínico controlado por clúster

Palabras clave:
Fibrilación auricular
Cribado oportunista
Búsqueda de casos
Trastornos del ritmo cardiaco

RESUMEN

Objetivo: El objetivo de este estudio fue evaluar la eficacia del cribado oportunista a través de la palpación del pulso para la detección de fibrilación auricular en sujetos asintomáticos de edad ≥ 65 años frente a la búsqueda activa de pacientes de la misma edad con síntomas y/o complicaciones y secuelas asociadas.
Material y métodos: Se realizó un ensayo clínico controlado aleatorizado por clúster en 48 centros de atención primaria del Sistema Nacional de Salud español. Se aleatorizó a un total de 368 médicos y enfermeras. Los investigadores del grupo experimental (GE) realizaron el cribado oportunista para la fibrilación auricular, mientras que los investigadores del grupo control (GC) realizaron una búsqueda activa en pacientes sintomáticos. Se realizó un ECG en los pacientes que tenían un pulso irregular para confirmar el diagnóstico de fibrilación auricular.
Resultados: Un total de 5.465 pacientes con una edad media de 75,61 fueron seleccionados para el GE y 1.525 pacientes para el GC, con una edad media de 74,07 años. El 58,6% eran mujeres, sin diferencias significativas entre los grupos. El pulso era irregular en el 4,3 y el 15% de los pacientes del GE y el GC, respectivamente (p < 0,001). Se detectaron un total de 164 nuevos casos de fibrilación auricular (2,3%), el 1,1% en el GE y el 6,7% en el GC (OR ajustada 0,29; IC 95% 0,18-0,45).
Conclusiones: La búsqueda activa, a través de la palpación del pulso, de fibrilación auricular en pacientes de edad ≥ 65 años con síntomas o signos indicativos es una estrategia más eficaz que el cribado oportunista en pacientes asintomáticos.
Registro del ensayo clínico: Registrado en ClinicalTrials.gov (NCT01291953; 8 de febrero de 2011).

Introduction

Atrial fibrillation (AF) is the most frequent type of sustained arrhythmia and one of the arrhythmias with higher associated morbidity and mortality rates. In Spain, the global prevalence of AF is estimated to be 4.4%, which increases to 9.3% in patients aged between 70 and 80 years, and to 17.7% in patients over 80 years.[1] In Europe, the Rotterdam study[2] analyzed a cohort of patients older than 55 years and found a prevalence of 5.5%.

The clinical relevance of AF lies in the fact that, in its presence, the risk of having an ischemic stroke increases by 3.5% per year from 70 years of age. This risk can increase up to 20 times. Fifteen percent of ischemic strokes are attributed to this type of arrhythmia; strokes related to AF are more severe, associated with a higher degree of disability and greater healthcare costs.[3]

A peculiarity of this arrhythmia is that it is frequently diagnosed by chance (subclinical AF). The FIATE registry revealed that AF was incidentally diagnosed in 26% of patients, of which 28% had unspecific symptoms (dizziness, fatigue, instability, anxiety or nervousness).[4] The OFRECE study[1] revealed that 10% of patients with AF were unaware they were affected by the disease. The studie by Labrador García et al.[5] report a prevalence of undiagnosed AF of 8.6% in patients aged >65 years. Another study involving patients with a pacemaker revealed that 10.1% had subclinical atrial tachyarrhythmias, which was associated with a higher risk of having AF, an ischemic accident or systemic embolism.[6] The SMART study confirmed that one out of nine cryptogenic strokes had an underlying AF, whereas only 6% of strokes were symptomatic.[7]

A test with high specificity should be developed to identify patients at risk of having subclinical or asymptomatic AF.[8] Although numerous methods have been used for the early detection of arrythmia,[9] the most common is to take a patient's pulse – either systematically (population screening) or through the use of an opportunistic approach (when patients are seen for other health problems) –, and if the pulse is irregular, to perform an ECG.[10–14] This approach has been proven to have high sensitivity (94%) but low specificity (72%).[15]

To date, only two systematic reviews of studies that assess the early detection of AF have been published.[16,17] Amongst these studies opinions vary on best practices. Cochrane et al. concluded that the detection of AF increased both through opportunistic and systematic screening, as compared to routine practice. However, their conclusions are based on the results of a single study. Some primary prevention guidelines recommend pulse palpation as an effective method for the early detection of AF in patients older than 65 or 75 years.[18,19] However, a recent publication by the UK NSC on screening for AF in adults does not recommend pulse palpation for the early detection of AF[20] and neither the US Preventive Services Task Force, and the Canadian Task Force on Preventive Health Care, said screening includes among its recommendations.[21,22] Thus, detection methods remain a controversial issue.

Primary Care providers are in a privileged position to be proactive with patients consulting for emerging or non-specific symptoms and thus make early detection of serious health problems.

Given the scarcity of evidence available, the main goal of this study was to assess the effectiveness of opportunistic screening through pulse palpation in the early detection of AF in subjects aged >65 years versus detection through an active search for patients with symptoms and/or complications and sequelae associated with AF.

Material and methods

Design

The study protocol has been described in detail elsewhere.[23] This was a multicenter, parallel-arm (Experimental Group – EG – versus Control Group – CG) cluster-controlled study. The healthcare professionals included were randomized to perform either opportunistic screening for AF or detection through identification of AF symptoms. The duration of the study was 24 months, and the field work took 18 months.

Participants

General practitioners and nurses from the Spanish National Health System were invited to participate in the study. Criteria for inclusion in the study consisted of being aged ≥65 years, attending the health center for other health problems and giving informed consent. Patients with a previous diagnosis of AF were excluded.