Family Medicine & Primary Care Review 2024; 26(2): 228–230, https://doi.org/10.5114/fmpcr.2024.139034

ORIGINAL PAPERS



ISSN 1734-3402, eISSN 2449-8580

# Occurrence of asymptomatic atrial fibrillation in non-ambulatory patients: a retrospective study in primary care setting

GABRIELE POTI[1, B], FRANCESCA SPARANO[2, B], GIOVANNA CATALDO[3, B], SILVESTRO SCOTTI[4, D], PASQUALE IZZO[5, D], STEFANO CALAMARO[6, B], LUIGI SPARANO[7, B], CARMINE SELLITTO[8, E]
ORCID ID: 0000-0002-5595-7841

[1] General Practitioner and Business Council ASL Naples 1, Italy
[2] School of Medicine, University of Plovdiv, Plovdiv, Bulgaria
[3] Department of Mental and Physical Health and Preventive Medicine, Section of Human Anatomy, University of Campania "Luigi Vanvitelli," Naples, Italy
[4] National Secretary, Italian Federation of General Practitioners, Rome, Italy
[5] Director U.O.C. Primary Care, ASL Naples 1, Italy
[6] General Practitioner, ASL Naples 1, Italy
[7] Board of the Italian Federation of General Practitioners, Naples, Italy
[8] Department of Medicine, Surgery and Dentistry, "Scuola Medica Salernitana", Unit of Pharmacology, University of Salerno, Baronissi, Italy

**A** – Study Design, **B** – Data Collection, **C** – Statistical Analysis, **D** – Data Interpretation, **E** – Manuscript Preparation, **F** – Literature Search, **G** – Funds Collection

**Summary** **Background.** Atrial fibrillation (AF) is a common cardiac rhythm disease identified in clinical practice. AF patients often suffer heart-pounding, dyspnea, chest pain, and fatigue, while others with AF have no symptoms, showing the so-called silent or asymptomatic AF. General Practitioners (GPs), through home visits, may meet unrecognized pathologies, such as asymptomatic AF, in at-risk populations like non-ambulatory patients. The purpose of the study is to identify the occurrence of asymptomatic AF in a population of frail non-ambulatory patients in the primary care setting and to promote a good clinical practice regimen.

**Material and methods.** A retrospective observational study, which enrolled patients in the primary care setting of the city of Naples, was conducted. The patients were all non-ambulatory and were visited at home by their GPs. They performed a clinical examination at the patients' homes, including clinical and pharmacologic anamnesis, objective examination, echo-color Doppler of the supra-aortic vessels, electrocardiogram, 24-Hour Holter monitoring, and abdominal ultrasound.

**Results.** The study enrolled 100 non-ambulatory patients, aged 80 to 94 years, including 61 women and 39 men. In 35 patients (21 women and 14 men), the GPs identified asymptomatic AF.

**Conclusions.** Asymptomatic atrial fibrillation was identified in 35% of the study population. This should be considered in at-risk populations, such as the non-ambulatory patients. GPs, by conducting home visits with basic instrumental examinations, can help to identify asymptomatic AF and start the right diagnostic and therapeutic course in these patients.

**Key words:** atrial fibrillation, general practitioners, primary health care.

Poti G, Sparano F, Cataldo G, Scotti S, Izzo P, Calamaro S, Sparano L, Sellitto C. Occurrence of asymptomatic atrial fibrillation in non-ambulatory patients: a retrospective study in primary care setting. *Fam Med Prim Care Rev* 2024; 26(2): 228–230, doi: https://doi.org/10.5114/fmpcr.2024.139034.

## Background

Atrial fibrillation (AF) is a common cardiac rhythm disease identified in clinical practice. In Europe, 1–3% of the population suffers from AF and has an increased risk of stroke. The median age of AF patients is 75 years; an increasing prevalence with age is observed: 2.3% over 40 years old and about 6% over 65 years old. Various factors affect this increase in AF, among which, above all, are the aging of the population and associated diseases, such as heart failure, hypertension, and valvular heart disease. AF patients often suffer heart-pounding, dyspnea, chest pain, and fatigue, while others with AF have no symptoms, showing the so-called silent or asymptomatic AF. It is important to emphasize that asymptomatic supraventricular arrhythmias occur in 58% of patients, requiring a permanent pacemaker [1]. AF is much more difficult to diagnose and monitor over time. The hemodynamic mechanisms that contribute to the clinical manifestations of AF include loss of atrial contraction and atrioventricular (AV) synchrony, heart rate (HR) irregularity, and rapid ventricular response in AF, which can eventually lead to decreased cardiac output. Prolonged rapid HRs may result in tachycardia-induced cardiomyopathy and significant left ventricle systolic dysfunction [2]. A prospective study enrolled 282 outpatients affected by persistent AF, 68% were symptomatic, while 32% had no symptoms without differences in HRs or left ventricular (LV) dysfunction between the two groups of patients [3]. Clinical symptoms and hemodynamic mechanisms cannot predict the appearance of asymptomatic AF, especially since it has been demonstrated that even symptomatic patients experienced episodes of asymptomatic AF. There are several populations in which asymptomatic AF can be found. General practitioners (GPs) assume a key and irreplaceable role in the definition and correct diagnosis of frailty. Primary care physicians, through home visits, may often discover unrecognized pathologies, as many non-ambulatory patients tend not to have clinical checkups, even the most common checkups.

## Objectives

The purpose of the study is to identify the occurrence of asymptomatic AF in a population of frail non-ambulatory patients in the primary care setting and to promote a good clinical practice regimen aimed at the identification of misrecognized diseases in at-risk populations along with their close clinical monitoring.

## Material and methods

A retrospective observational study, which enrolled patients in the primary care setting of the city of Naples, was conducted. The patients were all non-ambulatory and were visited at home by their GPs. Non-ambulatory patients were defined as subjects who, due to walking difficulties, were unable to leave their home and reach the general practitioner's ambulatory. GPs performed a clinical examination at the patients' homes, including clinical and pharmacologic anamnesis, objective examination, echo-color Doppler of the supra-aortic vessels, electrocardiogram, 24-Hour Holter monitoring, and abdominal ultrasound. All the clinical and instrumental tests carried out and the related diagnostic instrumentation were provided by the GPs, who had acquired them in their studies. The data was collected by GPs in individual patient records from August 2022 to August 2023. All patients gave their informed consent for the use of personal data and for its publication. Dementia patients were not mentally capable, and their informed consent was given by their tutors, who were also their caregivers.

**Ethical approval.** Not applicable to a non-pharmacological retrospective study. All patients gave their informed consent.

## Results

Out of a population of approximately 4,000 patients reporting to GPs, the study enrolled 100 non-ambulatory patients, aged 80 to 94 years, including 61 women and 39 men, in the primary care setting. Among the non-ambulatory patients, 7 were confined to wheelchairs, 17 were bedridden, and the others had a range limited to a few steps. In 35 patients (21 women and 14 men), the GPs identified asymptomatic AF. 11 of these patients had hypertension only and were on therapy with only one antihypertensive (ACE inhibitor or Angiotensin-II-receptor antagonists), while 8 had hypertension and dementia and were on memantine therapy. 16 patients had non-insulin-dependent type II diabetes mellitus, hypertensive heart disease, mixed dyslipidemia, chronic obstructive pulmonary disease, asthma, or Parkinson's disease. Atrial fibrillation was not detected in the remaining 65 patients. These patients had the following clinical features: 5 patients were in apparent good clinical condition, 11 patients had dementia only and were on memantine therapy, 17 had hypertension only and were on antihypertensive therapy only (ACE inhibitor or Angiotensin-II-receptor antagonists). 32 patients had non-insulin-dependent type II diabetes mellitus, hypertensive heart disease, mixed dyslipidemia, chronic obstructive pulmonary disease, asthma, or Parkinson's disease.

## Discussion

Thanks to home visits by GPs, who performed basic clinical and instrumental examinations, such as ECG and 24-Hour Holter monitoring, asymptomatic atrial fibrillation was identified in 35% of the study population. These patients, at risk of systemic thromboembolism, are now on anticoagulant therapy and have regular clinical check-ups. Notably, it was not always easy to identify the presence of AF, as the resting ECG sometimes showed sinus rhythm, and only thanks to 24-hour Holter monitoring it was possible to identify the presence of non-persistent/paroxysmal AF (in any case present for most of the day). GPs, thanks to the use of these basic diagnostic instruments, can reach even at-risk segments of the population who are unlikely to resort to first- and second-level diagnostic investigations. These results highlight the crucial role of general medicine in its widespread presence throughout the territory, reaching even fragile segments of the population, and the importance of introducing basic instrumental examinations, such as ECG and ultrasound, into the good practice of the family doctor. Frequent asymptomatic AF may expose a patient to atrial remodeling or a tachycardia-induced cardiomyopathy, heart failure (CHF), and potentially life-threatening arrhythmias, up to the risk of stroke. A prospective study enrolled 282 persistent AF outpatients, identifying 32% with no symptoms and which revealed valvular heart disease as the only independent predictor of symptoms [4]. A French study by Lévy et al. showed 11.4% asymptomatic AF patients in a population of 758 AF patients monitored by 206 GPs. Among the 86 asymptomatic patients, 73% were affected by permanent AF and 11% by paroxysmal AF. While permanent AF patients were older and more often asymptomatic, patients with paroxysmal AF (PAF) experienced heart-pounding, syncope, and light-headedness more often [5]. A study from the Canada Registry of Atrial Fibrillation also identified a significant prevalence of asymptomatic AF subjects (21%) in a population of 674 patients [6]. Similarly to our study, Camm et al. identified the incidence of 10.5% asymptomatic AF among 106 elderly patients (≥ 75 years old) through the use of 24-hour ambulatory monitor [7]. Psaty et al. reported 11.8% of asymptomatic patients among 304 new AF cases in 4,844 65-year-old subjects screened with annual ECGs [8]. Another study, enrolling patients with idiopathic AF, identified 24% asymptomatic subjects, of which 12 developed cardiovascular disease or hypertension during follow-up [9]. Among 277 65-year-old patients, Furberg et al. found 30% asymptomatic AF through the use of a baseline ECG [10]. In the Framingham Heart Study, Benjamin et al. reported 40% asymptomatic AF cases among 562 AF patients, detected by biannual ECGs [11]. Patients with sinus node dysfunction or AV conduction abnormalities are another population at high risk for AF, with an incidence of 4–6% per year [12]. It is very important to carry out 24-hour Holter monitoring in patients with AF. In fact, in the study by Defaye et al., which enrolled patients with symptomatic AF (AV block in 269 patients, sinus node dysfunction in 248 patients, both pathologies in 100 patients), asymptomatic supraventricular arrhythmia, lasting 1 minute to 24 hours, was detected by 24-hour Holter monitor in 58% of the patients [1].

## Conclusions

Asymptomatic AF is common and has significant clinical implications. Failure to acknowledge the frequency of asymptomatic AF could lead to harmful consequences, including thromboembolic stroke and LV systolic dysfunction. Asymptomatic AF should be considered in fragile populations, such as non-ambulatory patients. GPs, by conducting home visits with basic instrumental examinations, can help to identify asymptomatic AF and start the right diagnostic and therapeutic course in these patients. Furthermore, there are currently sensors and wearable devices to monitor health through smartphones and smartwatches. Some applications connected to these devices are able to detect if the rhythm is irregular and warn of possible atrial fibrillation, representing the future of home diagnostics, especially in subjects with multiple risk factors for this arrhythmia.

**How does this paper make a difference in general practice?**

- General practitioners are also able to reach populations at risk, such as non-ambulatory patients.
- The clinical practice of general practitioners can be greatly improved by the use of first level diagnostic procedures such as ultrasound, electrocardiography, and 24-hour Holter monitoring.
- The occurrence of asymptomatic atrial fibrillation is high and unrecognized in non-ambulatory patients.

Source of funding: This work was funded from the authors' own resources.
Conflicts of interest: The authors declare no conflicts of interest.

## References

1. Defaye P, Dournaux F, Mouton E. Prevalence of supraventricular arrhythmias from the automated analysis of data stored in the DDD pacemakers of 617 patients: the AIDA study. The AIDA Multicenter Study Group. Automatic Interpretation for Diagnosis Assistance. *Pacing Clin Electrophysiol* 1998; 21(1 Pt 2): 250–255, doi: 10.1111/j.1540-8159.1998.tb01098.x.
2. Packer DL, Bardy GH, Worley SJ, et al. Tachycardia-induced cardiomyopathy: a reversible form of left ventricular dysfunction. *Am J Cardiol* 1986; 57(8): 563–570, doi: 10.1016/0002-9149(86)90836-2.
3. Gopinathannair R, Chen LY, Chung MK, et al. Managing Atrial Fibrillation in Patients With Heart Failure and Reduced Ejection Fraction: A Scientific Statement From the American Heart Association. *Circ Arrhythm Electrophysiol* 2021; 14(6): HAE0000000000000078, doi: 10.1161/HAE.0000000000000078.
4. Frykman V, Frick M, Jensen-Urstad M, et al. Asymptomatic versus symptomatic persistent atrial fibrillation: clinical and noninvasive characteristics. *J Intern Med* 2001; 250(5): 390–397, doi: 10.1046/j.1365-2796.2001.00893.x.
5. Lévy S, Maarek M, Coumel P, et al. Characterization of different subsets of atrial fibrillation in general practice in France: the ALFA study. The College of French Cardiologists. *Circulation* 1999; 99(23): 3028–3035, doi: 10.1161/01.cir.99.23.3028.
6. Kerr C, Boone J, Connolly S, et al. Follow-up of atrial fibrillation: The initial experience of the Canadian Registry of Atrial Fibrillation. *Eur Heart J* 1996; 17(Suppl. C): 48–51, doi: 10.1093/eurheartj/17.suppl_c.48.
7. Camm AJ, Evans KE, Ward DE, et al. The rhythm of the heart in active elderly subjects. *Am Heart J* 1980; 99(5): 598–603, doi: 10.1016/0002-8703(80)90733-4.
8. Psaty BM, Manolio TA, Kuller LH, et al. Incidence of and risk factors for atrial fibrillation in older adults. *Circulation* 1997; 96(7): 2455–2461, doi: 10.1161/01.cir.96.7.2455.
9. Ciaroni S, Bloch A. Evaluation clinique et pronostique à moyen terme de la fibrillation auriculaire idiopathique [Mid-term clinical and prognostic evaluation of idiopathic atrial fibrillation]. *Arch Mal Coeur Vaiss* 1993; 86(7): 1025–1030 (in French).
10. Furberg CD, Psaty BM, Manolio TA, et al. Prevalence of atrial fibrillation in elderly subjects (the Cardiovascular Health Study). *Am J Cardiol* 1994; 74(3): 236–241, doi: 10.1016/0002-9149(94)90363-8.
11. Benjamin EJ, Levy D, Vaziri SM, et al. Independent risk factors for atrial fibrillation in a population-based cohort. The Framingham Heart Study. *JAMA* 1994; 271(11): 840–844.
12. Kerr CR, Connolly SJ, Abdollah H, et al. Canadian Trial of Physiological Pacing: Effects of physiological pacing during long-term follow-up. *Circulation* 2004; 109(3): 357–362, doi: 10.1161/01.CIR.0000109490.72104.EE.

Tables: 0
Figures: 0
References: 12

Received: 12.12.2023
Reviewed: 30.12.2023
Accepted: 19.01.2024

Address for correspondence:
Carmine Sellitto, MD PhD
Department of Medicine
Surgery and Dentistry
"Scuola Medica Salernitana"
Unit of Pharmacology
University of Salerno
Baronissi
Italy
Tel.: +39 3491420236
E-mail: csellitto@unisa.it