# Results, barriers and enablers in Atrial Fibrillation Case Finding

**Barriers in opportunistic atrial fibrillation case finding. A cross-sectional study. Health Service Research.**

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**Key messages:**

1. Case finding was associated to increased diagnosis of new AF

2. Age, residence, institutionalization, and comorbidity might condition the case finding

3. The screened population is treated more with anticoagulants (84.7% versus 77.4%)

**Abstract:**

**Background**: Atrial fibrillation (AF) is often asymptomatic, and screening is not routinely undertaken.

**Objective:** Evaluate the feasibility and effectiveness of a population-based case finding program and to identify the enablers of and/or barriers to its implementation.

**Methods:** We conducted a cross-sectional study of a health care case finding program for AF from January 1, 2016, to December 31, 2017, that included 48,336 people ≥ 60 years of age in the region of Terresde l'Ebre (Catalonia, Spain). We analyzed the effect on the prevalence of AF and, stratified by age, on the incidence of new diagnoses of AF. We assessed the sociodemographic and clinical variables related to the realization of a case finding.

**Results:** A total of 32,090 (62.4%) people were screened for AF. We observed a significant increase in the AF prevalence after two years of program intervention (5.9% to 7.7%; $p < 0.001$). The detection of new AF cases was significantly higher in the case finding group across the whole of the age range, and 765 (2.6%) new AF cases were diagnosed using case finding.

The factors that were significantly associated with an underuse of case finding were: age < 70 years, urban residence, institutionalized status, Pfeiffer score ≥ 2, Charlson score > 3, and number of visits < 7/year.

**Conclusions:** A health care program of case finding is feasible and is associated with a significant increase in the prevalence and incidence of AF. The results depend on factors such as the ease of access to health care, age, place of residence, and comorbidities.

**Keywords:** anticoagulants, atrial fibrillation, case finding, patient, prevention, stroke

## Introduction

Atrial fibrillation (AF) is estimated to increase the risk of experiencing a stroke by a factor of three to five. AF, along with high blood pressure, is a risk factor for ischemic stroke that is insufficiently detected and treated [1–4] in the general population and which has been previously unknown in 24–31% of patients who have experienced at least one stroke [1,2]. The prevalence of AF and its complications will increase in the coming decades because of the ageing population [5], so developing proposals aimed at improving diagnosis and treatment is a priority. Population strategies for the opportunistic detection of AF are recommended by international organisations including the European Society of Cardiology (ESC), the Stroke Alliance for Europe (SAFE) [1], the European Heart Rhythm Association (EHRA), the Royal College of Physicians of Edinburgh (RCPE), the World Healthcare Forum (WHF), the European Primary Care Cardiovascular Society (EPCCS) and the Health Information and Quality Authority (HIQA). Disagreement remains, however, over whether case finding detects more AF than do standard practices [6].

Numerous studies have been initiated [7–10] with the objective of evaluating different strategies for AF detection. We can differentiate between those studies aimed at opportunistically diagnosing AF in binary form [11–14] and those using real-time monitoring technologies and/or biomarkers [15–18] to diagnose AF early, especially in subjects with high cardiovascular risk [19–21].

Based on previous results [4,22,23], a pilot project was developed in the region of Terres de l'Ebre (in Catalonia, an autonomous region of Spain) that had among its main objectives the implementation of a binary opportunistic case finding programme for AF in the population ≥ 60 years of age. The study aimed to evaluate the effectiveness of AF

case finding in the general population ≥ 60 years of age relative to usual clinical practice and to identify possible factors in and barriers to AF case finding.

**Methods**

In 2015, the region of Terres de l'Ebre participated in a pilot project in collaboration with the Pla Director Malaltia Vascular/Agència de Quality i Avaluació Sanitàries de Catalunya (PDMVC) and the Estratègia d'Atención Integral a la Cronicitat (PPAC) to design a programme for AF detection. The PDMVC aims to embrace a comprehensive approach to cardiovascular diseases, from promotion and prevention to rehabilitation, taking into account the principles of equity and the reduction of inequalities. The purpose of the PPAC is to provide a new model of social and healthcare for all residents of Catalonia to use in responding to the challenge of chronicity and dependence, promoting health and preventing the risk factors of chronic diseases of highest impact, with attention paid from the very first phases to those of greatest complexity. As initial objectives, the project involved palpating the arterial pulse, registering an ECG and recording the results in the electronic medical records (e-cap) of any citizen ≥ 60 years of age who contacted the health system, especially a primary care provider. To register patients, a specific variable (A/AR) was introduced in the e-cap program, which was coded in a different colour when the citizen belonged to the target group but assessment had not been undertaken.

*Territorial scope*

Terres de l'Ebre is a territory comprising the four southernmost regions of Catalonia: Baix Ebre, Montsià, Terra Alta, and Ribera d'Ebre. The area, which encompasses 3,329 km², has a population of 191,791 in 52 municipalities with an average of 58 inhabitants/km$^2$. The bulk of the population is concentrated in the regions of Baix Ebre and Montsià, which constitute 81% of the region's population. A total of 7.46% of

the population lives in municipalities with less than 1,000 inhabitants (coded as rural in the software), 47.66% in those between 1,000 and 10,000 inhabitants (coded as semi-rural in the software), and 44.87% in those of greater than 10,000 inhabitants (coded as urban in the software). The two counties with the oldest average population (Terra Alta and Ribera d'Ebre) contain no urban municipalities. The active ageing index (the ratio of the number of elderly persons [aged 65 and over] to the number of young persons [aged 0 to 14]) of these areas is 151.5, which is higher than that of both Catalonia (112.06) and Spain (118.43) as a whole. With regard to the healthcare system, the territory has a general hospital for the area as well as 11 primary care teams, all managed by the Institut Català de la Salut, a governmental agency, which holds the medical histories of 97.78% of the residents of the area who appeared in the official census of the territory between 1 January 2016 and 31 December 2017.

*Type of study and description of the general and target populations*

This was an observational, cross-sectional, multi-centric, and non-interventional study in the context of ordinary primary care practice involving the population ≥ 60 years of age (n = 51410) with an active clinical history (e-cap). A total of 48,336 patients without known AF were included in the study.

*Variables*

The main variable is whether a patient's heartbeat is rhythmic or arrhythmic, as described in the record of the patient's medical history of case finding activity for AF during the period from 1 January 2016 to 31 December 2017. The patient's record indicated whether case finding was performed. Case finding or screening for AF is defined as pulse palpation during routine general practitioner consultations at least once a year, together with a 12-lead ECG confirmation of an irregular or regular pulse [11]—for instance, during an annual cardiac disease review, with the result recorded as either

'rhythmic' (R) or 'arrhythmic' (AR). Patients with a previous record of AF were excluded (n = 3.074/51.410, 5.97%). Thus, new cases of AF were classified according to their relationship to the case finding:

a) AF was detected by means of direct AF case finding activity, which occurred by palpation of the pulse and/or registration of an ECG in asymptomatic patients for the purpose of detecting an AF, which was subsequently recorded in the e-cap program (ICD code I48). Either in an office consultation or at home, a physician or referring nurse performed palpation and/or an ECG as a routine procedure, mainly to monitor chronic cardiovascular conditions (hypertension, diabetes, ischemic heart disease and heart failure). A suspected arrhythmia via palpation was always followed by an ECG. The medical practitioner recorded any coincidental clinical findings of the case finding, ECG and new AF diagnosis.

b) The detection of AF was made without a direct AF screening procedure. In these patients, AF was newly diagnosed within the context of decisions rendered in clinical practice from the presentation of symptoms or exploration of other comorbidities in any medical centre or at home, but not those taken as result of a case finding activity. The clinical findings of the case finding and/or ECG and the unintended new FA diagnosis were recorded.

The following secondary variables were defined:

- Sociodemographic: age, gender and municipality of residence (> 10,000 inhabitants, urban; 1,000–10,000 inhabitants, semi-rural; and < 1000 inhabitants, rural).
- Clinical information: Comorbidities were obtained from the codes of the International Classification of Diseases, version 10 (ICD-10) in each patient's clinical history, both in primary and inpatient care settings. I48 was the code

used to select the different entities of AF as the main diagnosis. The conditions of the $CHA_2DS_2VAS_c$ score were included. Cognitive impairment was unspecified and registered without noting its subtype or severity and evaluated using the Pfeiffer score (0–10), with 0–2 errors = normal and ≥ 3 errors = intermediate-to-severe affectation.

- Cognitive impairment was also used as a criterion in the diagnosis of a Complex Chronic Patient (CCP), a variable assigned according to specific criteria, such as multi-morbidity, single severe or progressive chronic pathology, a high probability of suffering decompensations, intense and refractory persistent symptoms, dynamic evolution requiring continuous monitoring, the high use of health services, polymedication, severity, geriatric syndromes and extreme age.
- Prescription information: All medication prescribed for any active diagnosis in the individual's medical history was included. We define 'polymedication' as the prescription of ≥ 5 different medications simultaneously.
- Health services variables: The frequency or average number of visits recorded in a primary care setting and/or at a referral hospital over one year (i.e., separately for 2016 and 2017). We quantified the registered clinical visits for every medical condition, regardless of the area of speciality. The median and average annual attendance (family medicine plus nursing visits) were used as a reference.
- Long-stay institutionalised patients: Those patients in nursing homes for the elderly, under either private or public management, under the care of specific primary care teams from the territory. Patients residing in such homes have an active medical history with a specific coding due to their condition.

*Goals*

The study's objectives were to evaluate the feasibility and effectiveness of a population-based case finding programme and to identify the factors associated with them.

**Statistics**

A descriptive analysis of the sociodemographic and clinical variables was performed, describing the frequency and percentage of the categorical variables and the mean and standard deviation for the continuous variables. We compared these variables according to whether case finding was performed. Chi-square tests were used to compare the categorical variables' means, and unpaired students' t-tests were used to compare the continuous variables. The prevalence and adjusted incidence by age at new AF per 1,000 people were calculated, as well as the number of necessary case finding incidents to diagnose a new AF case (NNS). To measure the association of these variables with the detection of AF after case finding, we calculated the crude odds ratio and adjusted the multivariate model value using logistic regression. With those variables that were statistically significant, another logistic regression model was created that included factors associated with a significant inferior probability of having AF case finding performed, such as the following: < 70 years of age, urban residence, institutionalisation, Pfeiffer scale value ≥ 2 and ≤ 7 visits in 2017 to the patient's primary care physician. Through logistic regression, the odds ratio adjusted for all variables was calculated to measure the association of this created variable with the fulfilment of the case finding. Quality control was carried out through programmes that allowed for the basic detection of errors of two types: purely transcription errors and inconsistency between the values of the variables collected. Audits were carried out to detect possible deviations and errors

and lost values and to determine the status of the investigation. Data analysis was performed using the statistical package SPSS 20.0.

*Quality control*

The identity of the participants was kept strictly confidential, and their anonymity was guaranteed at all times. The clinical application, including the cases, was subject to the current regulations for the protection of personal data (Ley Orgánica 15/1999; BOE-A-1999-23750 30/07/2018). The project was approved by the Ethics Committee for Scientific Research IDIAP Jordi Gol, protocol number P18/118. For this type of study formal consent is not required, as it was approved by the Ethics Committee, and the requirement of the informed consent of patients was waived prior to the inclusion of their medical data in this study. It has been registered at clinicaltrials.gov (identifier: NCT03589170).

Three probability variables were used to identify possible duplications (a patient's date of birth, sex and identification number on his or her individual health card) and ensure that each individual in the numerator was counted only once. Reviews were undertaken every six months to detect possible deviations, errors, lost values and extreme values, as well as to assess the status of the investigation.

The study's effectiveness was assessed based on changes observed in the prevalence of AF after two years of programme intervention and by comparing the incidence of newly diagnosed AF in the group with case finding as compared to the incidence in the control group.

**Results**

The population included 48,336 patients, whose baseline characteristics are described in Table 1. The mean age was 75 years, and 87% of the population had a $CHA_2DS_2VAS_c$ score of ≥ 2. Opportunistic AF case finding was performed in 61% of the population during the study period (2016–2017) (Figure 1). The average age was higher in the case finding group than the control group, as was their associated comorbidity, $CHA_2DS_2VAS_c$ score [24], proportion of urban residence and frequency of their primary and hospital care (Table 2). By contrast, the mean score on the Pfeiffer test for the case finding group was significantly lower than that of the control group. The number of patients receiving anticoagulant treatment (84.7 %) was significantly higher ($p < 0.001$) in the case finding group than in the control group (77.4%).

A significant increase in the prevalence of AF was observed between the beginning and end of the programme assessment (5.9% versus 7.7%, respectively; $p < 0.001$). The detection of new AF cases was significantly higher in the case finding group for the full age range (Table 3). Two hundred and one new AF cases were detected by performing case finding, accounting for 0.6% of all people screened and 26.3% of all new AF cases diagnosed in this group. The number of case finding incidents (NNS) required for a new AF diagnosis using the opportunistic detection procedure was 147, which decreased progressively with age.

The prevalence of a stroke was significantly higher in the presence of AF than in the group without diagnosed AF (4.4% vs 1.6%; $p <0.001$). The number of patients prescribed anticoagulant treatment was significantly higher in the group with a case finding of AF than in the control group (84.7% vs 77.4%; $p <0.001$). The treatment with direct anticoagulant in the non-case finding group was higher (18.7% vs 14.6%; $p =0.001$) than in the control group.

We analysed those variables related to the lack of performance in case finding. After adjusting for all variables, we obtained those identified as statistically significant (Table 2) and associated with not having opportunistic case finding for AF: age < 70 years, urban residence, institutionalised status, Pfeiffer score ≥ 2 or a record of 'cognitive impairment', a Charlson score ≤ 3 and a lower than average number of physician visits for the territory. We identified no differences associated with sex.

**Discussion**

In this study of over 48,000 patients aged 60 and older in one region of Spain, 61% of the eligible population underwent case finding for AF over a period of two years, and the incidence of new AF cases detected was three times higher in the case finding population than the control group. A relationship between the performance of opportunistic case finding and its possible factors was also found.

The results of the study cannot prove causality but are nonetheless useful in the assessment of some barriers to and factors associated with a lower probability of performing case finding, which could improve its implementation in primary care and lead to more effective results. The results show an association of case finding with an increased diagnosis of AF, and the effectiveness of case finding was conditioned by variables including age, residence, institutionalisation and comorbidities under usual conditions of care after a pilot health project was applied [4]. Moreover, case finding was credited with detecting around one quarter of undiagnosed AF cases.

Other ongoing studies on case finding focus mainly on the effectiveness of different types of strategies [6] and on different devices and their sensitivity [17,18], but there remain no studies that have described possible barriers to AF case finding. The use of pulse palpation (either manual or automatic for 30 seconds during an ordinary visit) has been recommended as the first step in case finding for detecting AF [22], but it is still

necessary to confirm the diagnosis by a register (such as a Holter device) [23]. Previous other studies using this method in different populations worldwide have produced contradictory results regarding its effectiveness [6,26,27]. Nevertheless, this methodology could have lower sensitivity [28] for detecting AF [17] when compared with other methodologies using technology [16,29,30]. The implementation of new digital technologies could improve the results of AF case finding, especially for populations at higher risk of AF [16].

In our study, opportunistic case finding facilitated the diagnosis of new AF in patients with a high risk of embolism; 87% of the new AF cases had a $CHA_2DS_2VAS_c$ score of $\geq 2$. This was consistent with the results of other studies [24]. Consequently, anticoagulant treatment was used significantly more in this subgroup (77.4% versus 84.7%; $p < 0.001$). The low incidence of strokes during this period and the cross-sectional nature of the study prevented a conclusion about the usefulness of this method in reducing the incidence of strokes in the population.

In addition to determining the effectiveness of a healthcare programme, another important aspect of implementing it is to identify the difficulties of carrying out case finding for AF. We have identified some variables related to the underuse of opportunistic case finding for AF by pulse palpation that had not previously been identified and should be taken into account in the implementation of a healthcare program. The first variable was the patients' place of residence; those living in an urban zone were less likely to receive case finding for AF. One possible explanation for this could be that there are no urban municipalities in the two districts with higher demographic aging where the study took place. The significant association of the number of physician visits with the performance of opportunistic case finding has positive implications for the accessibility and performance of an AF management pathway in primary care [24,27]. If the number

of visits increases, so does the probability of case finding and detecting new AF; thus, it would be justifiable to evaluate case finding strategies, such as the performance of self-monitoring of the patient by self-palpation [28,29] or the use of technological devices [14,18,28–32] and the participation of other centres of healthcare, such as pharmacies [33–34]. The low percentage of AF identified among institutionalised patients—a subgroup with higher CV factors, a very high embolic risk due to habitual bedding and pluripathology and, usually, the typical conditions described for complex chronic patients (CCPs)—should prompt the inclusion of opportunistic or systematic case finding in this population. The fact that institutionalised patients have less AF identified, can also be explained by the difficulties these patients have in accessing their GPs more frequently because of their fragile health. A Pfeiffer score of ≥ 2 or a determination of 'cognitive impairment' could be associated with a greater probability of institutionalisation for these patients and therefore may limit their access to health services. Similarly, the presence of few comorbidities and a Charlson score of ≤ 3 could be associated with fewer medical visits and therefore with less case finding in these patients.

The limitations of this study include its non-randomisation and its duration compared with the follow-up visits with these patients. It benefits from being performed under the usual circumstances of clinical practice, and it fulfils most conditions of a quasi-experimental study. It is limited by its duration to minimal follow-up regarding stroke incidence in these patients.

**Conclusions**

The performance of opportunistic case finding is associated with a significant increase in the recorded prevalence and incidence of AF.

There is a relationship between the performance of opportunistic case finding and factors like the frequent use of health services, age, place of residence and comorbidities. These should be considered in an AF case finding pathway in primary care.

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**Figure legend:**

Figure 1. Flowchart of AF case finding in population ≥60 years (Terres de l'Ebre, Catalonia, 2016.2017).

**Table 1. Baseline characteristics of the population ≥60 years (Terres de l'Ebre, Catalonia) comparing case finding for atrial fibrillation vs no case finding (2016-2017).**

| Variable | No case finding | Case finding | p | Total |
|---|---|---|---|---|
| Total N ≥60 years | 19320 (37.6%) | 32090 (62.4%) | | 51410 |
| Sex (%):<br>Female<br>Male | <br>10300 (53.3%)<br>9020 (46.7%) | <br>17230 (53.7%)<br>14860 (46.3%) | 0.406 | <br>27530<br>23880 |
| Average Age | 71.3±9.9 | 75.12±8.9 | <0.001 | 73.68±9.5 |
| Residence (%):<br>Urban<br>Semi-urban<br>Rural | <br>8370 (43.3%)<br>6643 (34.4%)<br>4307 (22.3.0%) | <br>11705 (36.5%)<br>12079 (37.6%)<br>8306 (25.9%) | <br><0.001 | <br>20075<br>18722<br>12613 |
| Institutionalization | 806 (4.17%) | 510 (1.59%) | <0.001 | 1316 |
| **Total N ≥60 years of age excluding known AF** | **18739 (38.76%)** | **29597 (61.23%)** | | **48336** |
| New diagnosis of AF | 129 (0.7%) | 765 (2.6%) | <0.001 | 894 |
| Total AF (%) at the end of the study | 710 (3.7%) | 3258 (10.1%) | <0.001 | 3968 (7.7%) |
| $CHA_2DS_2VAS_c$ score | 2,12±1,4 | 3,03±1,31 | <0.001 | 2,7±1,41 |
| Heart failure | 703 (3.6%) | 2687 (8.4%) | <0.001 | 3390 |
| High blood pressure | 7743 (40.1%) | 21390 (66.7%) | <0.001 | 29133 |
| Brain stroke/TIA | 243 (1.2%) | 689 (2.1%) | <0.001 | 932 |
| Vascular disease | 566 (2.9%) | 1902 (5.9%) | <0.001 | 2468 |
| Ischemic cardiopathy | 683 (3.5%) | 2264 (7.1%) | <0.001 | 2947 |
| Diabetes mellitus | 2079 (10.8%) | 8757 (27.3%) | <0.001 | 10836 |
| Impaired renal function (Dialysis, renal transplantation or serum creatinine>200µmol/ l) | 876 (4.5%) | 3122 (9.7%) | <0.001 | 3998 |
| Average glomerular filtrate mL/min | 77.2±19.9 | 74.3±19.2 | 0.180 | 75.01±19.4 |

| | | | | |
|---|---|---|---|---|
| Chronic liver disease or impaired hepatic function (Bilirubin> 2x or GPT or GOT or alkaline phosphatase> 3 x the normal limit) | 26 (0.1%) | 50 (0.2%) | 0.633 | 76 |
| COPD[1] | 1469 (7.6%) | 3517 (11.0%) | <0.001 | 4986 |
| OSAS[2] | 290 (1.5%) | 767 (2.4%) | <0.001 | 1057 |
| Anticoagulant treatment:<br>Anti-vitamin K<br>NOACs[3] | 550 (2.9%)<br>418 (2.2%)<br>132 (0.6%) | 2759 (8.6%)<br>2284 (7.1%)<br>475 (1.5%) | <0.001<br><0.001<br><0.001 | (83.5%)<br>2702<br>607 |
| Statins | 4471 (23.1%) | 12191 (38.0%) | <0.001 | 16662 |
| Cognitive impairment and/or Pfeiffer >2 score | 963 (5.0%) | 1691 (5.3%) | 0.162 | 2654 |
| Average Pfeiffer score | 3.4±3.3 | 2.3±2.8 | <0.001 | 2.58±2.9 |
| Number of CCP [4]criteria | 0.3±0.17 | 0.6±0.23 | <0.001 | 0.5±0.21 |
| Charlson Comorbidity Index | 0.72±1.06 | 1.15±1.22 | <0.001 | 0.99±1.18 |
| Number of drugs | 3.66±3.70 | 5.7±3.77 | 0.007 | 4.93±3.8 |
| Average number of visits/year (PC[5]) | 9.15±11.7 | 18.3±15.5 | <0.001 | 14.9±14.9 |
| Median number of visits (PC) | 6 | 14 | <0.001 | 11 |
| Average number of visits/year (HOSP[6]) | 0.17±1.06 | 1.15±1.22 | <0.001 | 0.23±0.88 |

(1) Chronic Obstructive Pulmonary Disease
(2) Obstructive sleep apnea Syndrome
(3) Novel oral anticoagulants
(4) Chronic complex patient
(5) Primary Care
(6) Hospital

**Table 2. Factors associated with the realization of AF case finding in people ≥60 years (Terres de l'Ebre, Catalonia, 2016-2017.**

| | OR | [a]CI95% | p | [b]ORadj | [a]CI95% | p |
|---|---|---|---|---|---|---|
| **Sex** | | | | | | |
| Female | 1 | | | 1 | | |
| Male | 0,98 | (0,95-1,02) | 0,403 | 1,08 | (0,93-1,26) | 0,292 |
| **Age (years)** | | | | | | |
| 60-69 | 1 | | | | | |
| 70-79 | 2,47 | (2,36-2,58) | < 0,001 | 1,73 | (1,32-2,27) | < 0,001 |
| 80-89 | 2,79 | (2,65-2,93) | < 0,001 | 1,69 | (1,32-2,17) | < 0,001 |
| >=90 | 1,74 | (1,61-1,88) | < 0,001 | 1,33 | (1,02-1,73) | 0,032 |
| **Residence** | | | | | | |
| Urban | 1 | | | | | |
| Semi-urban | 1,30 | (1,25-1,35) | < 0,001 | 1,37 | (1,16-1,61) | < 0,001 |
| Rural | 1,38 | (1,25-1,44) | < 0,001 | 1,02 | (0,86-1,21) | 0,833 |
| **Institutionalized** | | | | | | |
| No | 1 | | | | | |
| Yes | 0,37 | (0,33-0,41) | < 0,001 | 0,38 | (0,31-0,47) | < 0,001 |
| **Pfeiffer score** | | | | | | |
| ≤2 | 1 | | | | | |
| >2 | 0,51 | (0,45-0,59) | < 0,001 | 0,59 | (0,51-0,69) | < 0,001 |
| **Charlson`s Comorbidity Score** | | | | | | |
| 0 | 1 | | | | | |
| 1 | 2,43 | (2,32-2,56) | < 0,001 | 1,36 | (1,11-1,65) | 0,002 |
| 2 | 1,81 | (1,73-1,90) | < 0,001 | 1,27 | (1,04-1,56) | 0,018 |
| 3 | 2,97 | (2,75-3,19) | < 0,001 | 1,22 | (0,98-1,53) | 0,079 |
| 4 | 3,74 | (3,26-4,29) | < 0,001 | 1,51 | (1,11-2,03) | 0,008 |
| 5 | 3,29 | (2,57-4,20) | < 0,001 | 1,02 | (0,67-1,55) | 0,937 |
| 6 | 2,51 | (1,46-4,31) | 0,010 | 0,68 | (0,31-1,52) | 0,349 |
| **Number of visits to PC in 2017** | 1,07 | (1,07-1,08) | < 0,001 | 1,02 | (1,01-1,03) | < 0,001 |

**[a] 95% confidence interval. b Odd ratio adjusted for all variables (multivariate model)**

**Table 3. Adjusted incidence of new diagnosed atrial fibrillation in people ≥60 years (Terres de l'Ebre, Catalonia) by age (2016-2017).**

| Age (years) | Total N | Total new AF cases (2016-2017) | Population without case finding | | | Population with case finding | | | P |
|---|---|---|---|---|---|---|---|---|---|
| | | | N | Total new AF cases (2016-2017) | Incidence of new AF cases/1000/year(CI95%) | N | Total new AF cases (2016-2017) | Incidence of new AF cases/1000/year (CI95%) | |
| **60-69** | 19958 | 129 | 10164 | 24 | 1,2 (0,7-1,7) | 9794 | 105 | 5,3 (4,4-6,5) | <0.001 |
| **70-79** | 15408 | 286 | 4624 | 35 | 3,8 (2,7-5,7) | 10784 | 251 | 11,6 (10,2-13,1) | <0.001 |
| **80-89** | 10181 | 345 | 2878 | 46 | 8 (5,8-10,6) | 7303 | 299 | 20,4 (18,2-22,9) | <0.001 |
| **≥ 90** | 2789 | 134 | 1073 | 24 | 11,2 (7,1-16,6) | 1710 | 110 | 32 (26,3-33,6) | <0.001 |
| **Total** | 48336 | 894 | 18739 | 129 | 3,4 (2,8-4,1) | 29597 | 765 | 12,9 (12-13,6) | <0.001 |