Trends in diagnosed atrial fibrillation, management with oral anticoagulants and predictors in clinical practice in Italy

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Introduction

- Atrial fibrillation (AF) is the most common arrhythmia encountered in everyday clinical practice.[1] The risk of AF increases with age,[2] and because of ageing populations its prevalence and incidence are increasing[3,4]
- The use of oral anticoagulants (OAC) to reduce the risk of thromboembolic stroke in patients with AF is generally acknowledged to be the primary preventative intervention, but antiplatelet (AP) therapy is also common, particularly for patients for whom warfarin is considered unsuitable. However, recent clinical data have indicated that OAC are more effective than AP agents, for stroke prevention in patients with AF[5]
- Many observational studies have indicated that in clinical practice OAC are frequently underused in patients with AF, with reported percentages of OAC prescription between 30% and 60%[6]
- Even when OAC are used in patients with AF, these patients are often undertreated or overtreated[6,7]
- Although guidelines have been published to assist treatment decisions for patients with AF at risk of stroke,[8,9] limited evidence is available to indicate that stroke risk factors determine the choice of antithrombotic (AT) therapy

Objectives

- To investigate the prevalence of diagnosed AF in Italian General Practice
- To describe the use of AT therapy in patients with prevalent AF
- To explore the effects of a variety of factors, including stroke risk stratification schemes, on the likelihood of AT prescription

Methods

Study design

- Retrospective cohort study

Patient selection

- All patients aged ≥30 years diagnosed with AF, who had been registered with a participating general practioner (GP) for at least 1 year before initial AF diagnosis. Diagnoses were derived from electronic medical records coded by ICD-9CM; however, these did not distinguish between paroxysmal, persistent or permanent AF, or patients whose AF subsequently resolved

Drug therapies

- OAC: warfarin (ATC: B01AA03); acenocumarol (ATC: B01AA07)
- AP: acetylsalicylic acid (ATC: B01AC06), clopidogrel (ATC: B01AC04)

Setting

- 400 GPs from the Health Search/Thales Database (HSD), covering 1.3% of the total adult population and uniformly distributed across geographical areas of Italy

Main outcome measures

- Age-adjusted prevalence of AF during the years 2000–2004
- Prevalence of AT use
  - AT use was assessed for the years 2001 and 2005, for patients who had diagnosed AF (AF prevalent patients), in 2000 and 2004, respectively
  - A patient was considered to be an AT user if they had any AT prescription (OAC or AP) during the observed year. Prevalence of AT use was determined by dividing the number of AT users by the number of AF patients at the end of the year of follow up
- Demographic and clinical predictors
  - Multivariate logistic regression was performed for any AT therapy, and the individual drug classes to assess the effect of the year of AF treatment (comparing 2005 with 2001), patient demographics, stroke risk factors, concomitant disease and medications on the likelihood of receiving an AT (OAC or AP) prescription

Results

- Overall, 3,164 patients were included in the analysis
- There was a marked increase in the observed age-adjusted prevalence (cases/1,000 population) of diagnosed AF between 2000 and 2004. The increases in prevalence were similar in both male and female patients (Figure 1A and B). However, a proportion of the apparent increase may be due to underestimation of AF prevalence in the first year of the study. In addition, a small part of the increase may be attributable to increases in risk factors for AF[10]
- Prevalence was positively associated with increasing age (Figure 1A and B)
- AT drug use was higher among older patients, compared with those <55 years. However, patients ≥75 years were more likely to receive AP drugs than OAC (Table 1)
- Use of all AT drugs increased between 2001 and 2005:
  - In 2001, 28.8% of patients received OAC, 33.5% received AP therapy and 42.1% did not receive AT therapy
  - In 2005, 32.9% of patients received OAC, 39.6% received AP therapy and 32.1% received neither
- There was a significantly more common use of any AT drug (OAC or AP) associated with a higher risk of stroke categorized according to the National Institute of Clinical Excellence (NICE)[8] stroke risk classification or a $CHADS_2$[9] score ≥2 points, compared with those at lower risk or $CHADS_2$ <2 points (Table 1)
  - Use of OAC among patients classified as being at moderate or high risk of stroke, according to the NICE criteria, was significantly more common than among those at low risk (Table 1)
  - Use of OAC was slightly, but significantly, more common among patients with a $CHADS_2$ score ≥2 points (Table1). Use of AP drugs was also slightly more common among patients with a $CHADS_2$ score ≥2 points, but the difference was not statistically significant
- A substantial proportion of patients at higher risk of stroke (NICE and $CHADS_2$ classifications) did not receive any AT drug (Figure 2A and B)
- Patients with AF were more likely to receive an OAC in 2005 than in 2001 (Table 1). Drug utilization studies suggest that this may be due in part to increasing use of OAC over the study period

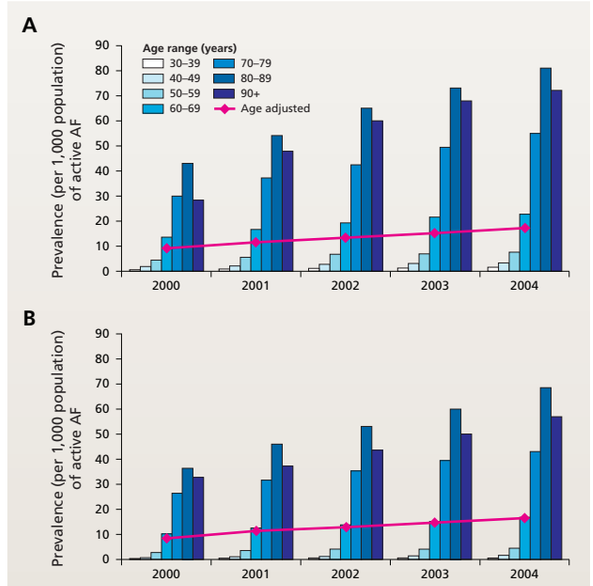

Figure 1. Age-adjusted prevalence (per 1,000 population) of atrial fibrillation (AF) in the years 2000–2004 among (A) male and (B) females in Italy. Data were not corrected for mortality.

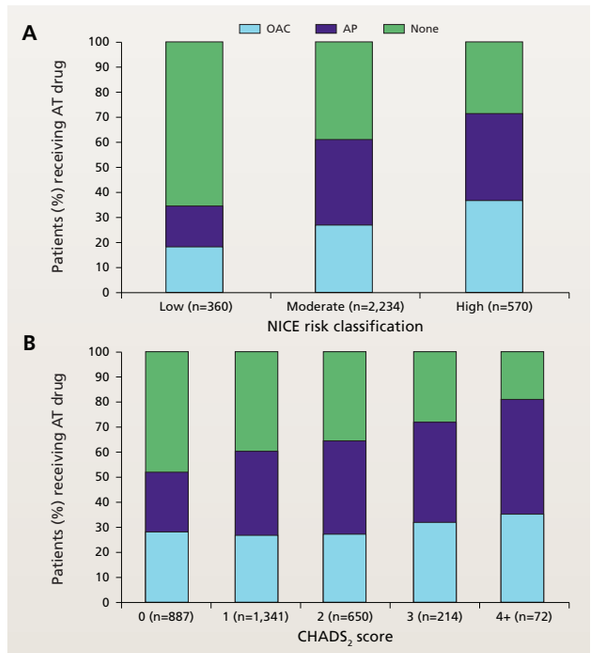

Figure 2. Antithrombotic (AT) drug prescriptions per stroke risk classification according to (A) the National Institute of Clinical Excellence (NICE) risk classification and (B) the $CHADS_2$ score. AP, antiplatelet therapy; OAC, oral anticoagulants.

- A history of valve disease, previous stroke/transient ischaemic attack or bone fracture were associated with an increased likelihood of OAC use, compared with patients without these conditions (Table 1)

Table 1. Association between demographic and clinical characteristics* and use of oral anticoagulants, and antiplatelet drugs among patients with atrial fibrillation (diagnosed in 2000–2004) in the years 2001 and 2005

	Adjusted odds ratio (95% CI)		
	Any AT therapy vs none	OAC vs none	AP therapy vs none
Year (vs 2001)			
2005	**1.05 (1.03–1.08)**	**1.04 (1.01–1.08)**	**1.06 (1.03–1.10)**
Age groups (vs <55 years)			
56–75 years	**1.94 (1.58–2.39)**	**1.69 (1.30–2.21)**	**2.15 (1.64–2.82)**
>75	**1.70 (1.35–2.15)**	1.10 (0.81–1.48)	**2.56 (1.89–3.45)**
NEW $CHADS_2$ risk score (vs <2)			
≥2	**1.23 (1.04–1.46)**	**1.28 (1.03–1.58)**	1.20 (0.99–1.45)
NICE classification (vs low risk)			
Moderate risk	**1.89 (1.54–2.30)**	**2.04 (1.57–2.66)**	**1.77 (1.38–2.26)**
High risk	**2.06 (1.50–2.83)**	**2.42 (1.63–3.58)**	**1.83 (1.25–2.69)**
Concurrent diseases (vs none)			
Previous stroke/transient ischaemic attack	**1.40 (1.06–1.85)**	**1.49 (1.07–2.07)**	1.28 (0.92–1.79)
Valve disease	**1.43 (1.06–1.92)**	**1.78 (1.26–2.52)**	1.09 (0.76–1.56)
Vascular disease	**1.47 (1.13–1.91)**	1.31 (0.96–1.79)	**1.56 (1.16–2.08)**
Bone fractures	1.91 (1.00–3.65)	**3.64 (1.76–7.54)**	0.90 (0.41–1.99)

AP, antiplatelet agents; AT, antithrombotic agents; CI, confidence interval; NICE, National Institute of Clinical Excellence; OAC, oral anticoagulant. *Analysed by logistic regression analysis. Values in bold denote statistically significant increases (upper and lower 95% CIs do not include the value of 1). The data for significant factors not discussed above are not shown (geographical area, cardiovascular medication, contraindications and number of different concomitant medications). The multivariate analysis also included time since diagnosis (years).

Conclusions

- In Italy, the prevalence of AF appears to have increased over the years 2000–2004. The observed increase was particularly evident among patients over 75 years of age
- More than 30% of AF patients who might benefit from OAC therapy did not receive it, and a considerable proportion of patients at high risk of stroke did not receive any AT therapy
- There is a significant gap between guideline recommendations on AT prophylaxis for patients with AF and its use in routine clinical practice, suggesting the need for improved strategies to identify patients at high risk of stroke and to extend prophylactic OAC therapy to all at-risk patients with AF

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Disclosure of Conflict of Interest

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