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Sex differences in prevalence, treatment and outcomes in patients with atrial fibrillation: a population-based cohort study

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Introduction: Sex-related differences have been largely described in patients with atrial fibrillation (AF). Increased risk for stroke and thromboembolic events has been described in female AF patients. Furthermore, it’s still debated if an increased risk for major bleeding can be found in female AF patients. We analyzed sex-related differences in AF prevalence, use of oral anticoagulant (OAC) drugs and outcomes.

Methods: We performed an analysis derived from administrative health of hospital admissions in our Italian region (>10,000,000 inhabitants). We described period prevalence from 2002 to 2014. Use of OAC was analysed in 2003 and 2014. Outcomes were assessed from 2002 to 2014 for all patients diagnosed with AF throughout the follow-up time.

Results: Among all hospitalized patients AF prevalence over the 2002-2014 period was higher in males than in females (2.7% vs. 2.1%, p<0.001), with increasing prevalence across the age classes. In 2002, both CHADS2 and CHA2DS2-VASc were higher in female AF patients than in male ones (both p<0.001) and OAC were more likely used in males than in females (37.4% vs. 35.6%, p<0.001). Similar evidence was gathered at the end of observation. Adjusted logistic regression analysis, stratified according to age classes, found that both in 2003 and 2014 if females were more likely treated with OAC when <65 years (odds ratio [OR]: 1.51, 95% confidence interval [CI]: 1.35-1.69 and OR: 1.32, 95% CI: 1.13-1.53), contrariwise were less likely treated with OAC when age =75 years, in 2003 (OR: 0.92, 95% CI: 0.86-0.98) and even less likely in 2014 (OR: 0.77, 95% CI: 0.72-0.81). Over 12 years of observation, female AF patients had a higher cumulative incidence of stroke [Figure], all-cause death (76.1% vs. 70.4%, p<0.001) and the composite outcome of stroke/major bleeding/all-cause death (76.3% vs. 72.3%, p<0.001), while conversely male AF patients had a slightly higher cumulative incidence of major bleeding (10.9% vs. 10.6%, p=0.003). Adjusted Cox regression analysis confirmed that female AF patients had a higher risk of stroke (hazard ratio [HR]: 1.18, 95% CI: 1.14-1.21 and a lower risk of major bleeding (HR: 0.83, 95% CI: 0.80-0.86), while, on the contrary, showed that after adjustments for all the major cardiovascular risk factors and comorbidities, female AF patients had a lower risk for all-cause death (HR: 0.82, 95% CI: 0.80-0.83) and composite outcome (HR: 0.86, 95% CI: 0.85-0.87).

Conclusions: AF prevalence was found to be higher in male than in female patients, while the thromboembolic risk was higher in female patients. Use of OAC in female patients was found to be independently associated with age. Over long-term follow-up, female AF patients had a higher risk of stroke and a lower risk of major bleeding and all-cause death.
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