Female gender and atrial fibrillation: An association with worse prognosis and outcomes

Jelena Kornej, Andreas Bollmann, Gerhard Hindricks, Gregory Y.H. Lip

PII: S0167-5273(15)00189-8
DOI: doi: 10.1016/j.ijcard.2015.02.062
Reference: IJCA 19714

To appear in: International Journal of Cardiology

Received date: 8 January 2015
Accepted date: 21 February 2015


This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.
Letter to the Editor

Female gender and atrial fibrillation:

An association with worse prognosis and outcomes


Jelena Kornej,1 MD, Andreas Bollmann,1 MD, PhD,
Gerhard Hindricks,1 MD, Gregory YH Lip,2 MD

1Leipzig University, Heart Center, Department of Electrophysiology, Germany
2University of Birmingham, Centre for Cardiovascular Sciences, Birmingham, UK

Words (text): 557

Address for correspondence:
Jelena Kornej, MD
Leipzig University
Heart Center
Department of Electrophysiology
Strümpellstr. 39
04289 Leipzig, Germany
Phone: ++49 341 865 1431
Fax: ++49 341 865 1460
Email: jelena.kornej@gmx.de
To the Editor:

Females with atrial fibrillation (AF) are at increased risk for ischemic stroke but have been under-represented in AF cohorts. Without anticoagulation, women are at higher risk than men for AF-related thromboembolic events (TE) but results are not consistent (1, 2). Interestingly, vascular complication rates after AF ablation had been recently shown to be also higher in females (3). Female sex has been included in the CHA\textsubscript{2}-DS\textsubscript{2}-VASc score for assessing thromboembolic risk, which doubles in women between the ages of 55 and 65, the menopausal period, when estradiol levels decrease by about 60\% (4). Following the menopause, a decline in endogenous estrogen receptors contributes to an up-regulated production of inflammatory cytokines, with further links to the hypercoagulable state (5).

Thus, it was with great interest that we read the article by Andersson and co-workers (6) on the gender-related differences in risk of cardiovascular morbidity and all-cause mortality in patients with lone and idiopathic AF. Using by far the largest nationwide set of patients with incident AF and no other co-morbidity at the time of diagnosis, the authors demonstrated a two-fold risk of thromboembolic events and three-fold increased risk of heart failure in patients with AF irrespective of age and gender, as compared to controls. Furthermore, the authors found that women were at higher risk of stroke and transient ischemic attack than men. The annual rate of thromboembolic events in men and women between 55 and 64 years was 1.0-1.1\% and in controls, 0.4\% and 0.3\%, respectively. This is in accordance with other observational and registry studies that demonstrated low annual rates of thromboembolism (stroke and systemic embolism, TE) in selected populations after AF catheter ablation, reaching event rates that are comparable to patients without AF (7).
The authors should be congratulated for their interesting findings on this topical and timely performed study that are in accordance with our research (8). Assessing gender-specific differences in thromboembolic risk post-ablation and the predictive risk factors for thromboembolism separately in females and males, we found that the incidence of thromboembolic events after AF catheter ablation is low in both genders. In contrast to the current study (6), there were no differences between thromboembolic events in males and females (1.2% versus 2.0%, p=0.128). In females, low ejection fraction (EF) and higher CHA\textsubscript{2}DS\textsubscript{2}-VASc score were independent predictors for thromboembolic risk, while renal dysfunction and all three stroke risk stratification scores, i.e. CHADS\textsubscript{2}, CHA\textsubscript{2}DS\textsubscript{2}-VASc, R\textsubscript{2}CHADS\textsubscript{2}, were associated with thromboembolic events risk in males. Because men constitute the large part of ablation cohorts, it was perhaps unsurprising to find an association between renal dysfunction and thromboembolic risk scores, as previously demonstrated (8).

Heart failure has been associated with higher stroke rates in AF (9). Whilst impaired left ventricular ejection fraction is more commonly been used as an equivalent for the heart failure, AF patients with heart failure and normal (preserved) EF also have greater thromboembolic risk compared with only AF patients (10). Our finding that impaired EF is significant predictor for TE in females supports previous studies; however, the novel aspect is the importance of EF for risk assessment in women after catheter ablation. Demonstrating higher risk for of thromboembolic complications and development of heart failure in females with lone/idiopathic AF, the current study by Andersson et al (6) supports our observations and emphasizes the necessity of more careful gender-specific stroke risk assessment.
References


