INTRODUCTION

In 1995, atrial fibrillation (AF) was estimated to affect 2.2 million people in the United States. After the age of 75 years (the median age for onset of AF), approximately 60% of people with AF (atrial fibrillation) are women. Women have a significantly higher risk of AF-related stroke than do men and are more likely to live with stroke-related disability and a significantly lower quality of life. Reluctance among physicians and patients to use anticoagulation treatment in elderly women may be especially problematic because they benefit most from it. We sought to examine sex-related differences in the type of atrial fibrillation, in risk factors for embolic events and treatment in patients presenting with AF. Women had a significantly higher prevalence of paroxystic atrial fibrillation than men. Women were older than men, with half of them being over 75 years old. We found that there were significantly more women with a CHADS-VASc score of 2 or more than there were men.

Keywords: atrial fibrillation, embolic risk, women.

SUMMARY:

After the age of 75 years (the median age for onset of AF), approximately 60% of people with AF (atrial fibrillation) are women. Women have a significantly higher risk of AF-related stroke than do men and are more likely to live with stroke-related disability and a significantly lower quality of life. Reluctance among physicians and patients to use anticoagulation treatment in elderly women may be especially problematic because they benefit most from it. We sought to examine sex-related differences in the type of atrial fibrillation, in risk factors for embolic events and treatment in patients presenting with AF. Women had a significantly higher prevalence of paroxystic atrial fibrillation than men. Women were older than men, with half of them being over 75 years old. We found that there were significantly more women with a CHADS-VASc score of 2 or more than there were men.

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disease, and more men with this condition have underlying coronary artery disease. Atrial fibrillation increases mortality and the incidence of stroke in both sexes. However, women in particular (especially those over 75 years old) may be at increased risk for embolism and long-term mortality. Gender is also an important feature affecting the selection of antiarrhythmic drugs for atrial fibrillation, because women are more likely to develop drug-induced arrhythmias. Stroke prevention with anticoagulation in chronic atrial fibrillation is a priority in both men and women; however, women derive the most benefit from it. [2]

Although sex differences in coronary artery disease have received considerable attention, few studies have dealt with sex differences in the most common sustained cardiac arrhythmia, atrial fibrillation [3]. Differences in presentation and clinical course may dictate different approaches to detection and management. We sought to examine sex-related differences in presentation, treatment, and outcome in patients presenting with new-onset AF.

METHOD AND RESULTS

We sought to examine sex-related differences in the type of atrial fibrillation, in risk factors for embolic events and treatment in patients presenting with AF.

We studied the patients admitted in our Cardiology Department in 2009. We recorded their risk factors using anamnesis, patient history, ankle-brachial index and echocardiography. We recorded the type of antithrombotic medication used.

From the total number of patients admitted in 2010 21% were diagnosed with atrial fibrillation (figure 1). As to the type of atrial fibrillation 29% of patients had paroxysmal atrial fibrillation, 14 persistent and 57% permanent atrial fibrillation (Figure 2). As to the gender and age distribution they were equally distributed between men and women 75 years old (Figure 3).

Women had a significantly ($p=0.006$) higher prevalence of paroxysmal atrial fibrillation (35% of women vs 22% of men) and lower prevalence of persistent/permanent atrial fibrillation (65% vs 78%) (Figure 4).
Women were significantly older than men ($p=0.003$), with 49% (106p) of all women with atrial fibrillation older than 75 years old vs 35% (70p) of all men. (Figure 5)

As to the CHA DS-VASc risk factors, women had an extremely significant higher prevalence of arterial hypertension ($p<0.0001$) and as was shown in the previous figure there were significantly more women over 75 years old than men ($p=0.003$). There were no statistical significant differences regarding the other risk factors. (Figure 6) (Table 1)

Regarding the CHA DS-VASc score, there were significantly more men than women with a score of 0 ($p=0.013$) or 1 ($p<0.0001$) (6 men vs 0 women, 28 men vs 0 women respectively). We found that there were statistical extremely more women with a score of 2 or more ($p<0.0001$) than there were men (218 women vs 168 men). (Figure 7)

### CONCLUSIONS

The gender distribution is approximately evenly distributed between men and women. The patients over 75 years old represent almost half of the total number of patients with atrial fibrillation. 2/3 of patients have persistent/permanent atrial fibrillation. Women had a significantly higher prevalence of paroxysmic atrial fibrillation than men. Women were older than men, with half of them being over 75 years old.

As to the CHA DS-VASc risk factors [4], women had an extremely significant higher prevalence of arterial hypertension.

![Fig. 5. Age over 75 years old](image)

![Fig. 6. CHADS-VASc risk factors in atrial fibrillation.](image)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>CHF</th>
<th>Hypertension</th>
<th>Age &gt; 75</th>
<th>Diabetes</th>
<th>Stroke</th>
<th>Vascular</th>
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<tr>
<td>Men</td>
<td>172</td>
<td>124</td>
<td>70</td>
<td>54</td>
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<td>170</td>
<td>106</td>
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<td>24</td>
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<tr>
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<td>0.22</td>
<td>$&lt;0.0001$</td>
<td>0.003</td>
<td>0.85</td>
<td>0.14</td>
<td>0.72</td>
</tr>
</tbody>
</table>

We found no differences regarding the treatment with amiodarone ($p=0.87$) or with statins ($p=0.31$), but we saw that a significantly lower percentage of women were treated with oral anticoagulation therapy than men (69 women vs 90 men, $p=0.006$).
hypertension and of an age over 75 years old. There were no statistical significant differences regarding the other risk factors. We found that there were significantly more women with a CHADS-VASc score of 2 or more than there were men.

Because all women have at least 1 risk factor we should always consider OAC. But we should have in mind that there is a category of patients (male, age under 65 years old, without hypertension or heart failure or other RF) that don’t have indication for antithrombotic treatment even if they have permanent AF.

Anticoagulants are underused in older women with AF relative to older men with AF, despite comparable risk profiles. Even though there were no differences between men in women regarding the treatment with statins, this medication was underused in all patients with atrial fibrillation.

Hormonal fluctuations during the menstrual cycle that affect QT intervals are an important consideration when selecting antiarrhythmic drugs for premenopausal women. [5]

We favor emphasizing therapies to prevent AF and ensure safe arrhythmia management (ie, rate control and appropriate anticoagulation) once AF has been diagnosed. Gender differences should be kept in mind for women with AF to reduce risks and improve quality of life.

With a quarter of the total admissions in our department, atrial fibrillation remains an important health care problem. The gender distribution is approximately evenly distributed between men and women. The patients over 75 years old represent almost half of the total number of patients with atrial fibrillation. 2/3 of patients have persistent/permanent atrial fibrillation.

The most frequent risk factors are: chronic heart failure, hypertension, female gender and the age over 75 years old. The majority of patients have 2 or more risk factors [4]. Only 38% of patients received oral anticoagulation treatment. The number is even lower in patients with 2 or more risk factors. Less than 50% of patients with 1 risk factor received OAC. Less than a quarter of patients with no risk factors received no antithrombotic treatment.

Patients with age over 75 years old and/or with stroke should receive a more aggressive antithrombotic treatment (the risk of stroke approaches 30% in patients between 80-89 years old) [5]. Maybe the new oral anticoagulants (dabigatran, rivaroxaban, apixaban) can help to improve the compliance of these type of patients because there is no need to do routine INR and no food and drug interactions.

References:
4. J. Camm, Guidelines for the Management of Patients with Atrial Fibrillation, European Society of Cardiology, 2010