Characteristics of Warfarin Underprescription in Older Adults with Atrial Fibrillation
Sana Rashid DO¹, Maciej Tysarowski MD¹, Jorge Naranjo MD², Atharva Dhole BA³, Luka Petrovic MD³, Emad F. Aziz DO²
¹Department of Medicine, Rutgers New Jersey Medical School
²Division of Cardiology, Department of Medicine, Rutgers New Jersey Medical School

Introduction

- Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia with prevalence increases with age
- It is an independent risk factor for all-cause mortality, cardiovascular mortality, hospitalization, stroke, dementia, and heart failure
- Age over 75 years is one of the strongest independent risk factors for thromboembolic (TE) events (i.e. stroke)

Methods and Materials

- We analyzed prospective longitudinal registry of 2179 patients with AF and AFI between Sept 2006 and Apr 2014
- Prospective follow-up was obtained through telephone interview using questionnaire
- Patients discharged on a non-warfarin anticoagulation (i.e. direct-oral anticoagulants (DOACs)) (189 patients) were excluded from the analysis
- Remaining patients divided into two cohorts: 275 years or older and those <75 years of age; older vs. younger cohorts
- The older group was subdivided into Warfarin group and Non-warfarin group (Figure 1)

![Figure 1: Flow diagram with patient selection and study criteria.](image)

![Figure 2: The relationship between CHA2DS2-VASc Score and warfarin discharge. In contrast to the younger cohort (A), there is no statistically significant difference between CHADS2-VASc Score and being discharged on warfarin in the older cohort (B).](image)

![Figure 3: Multivariate analysis assessing predictors of being discharged on warfarin in patients ≥ 75 years old.](image)

Multivariate Analysis: Odds of Discharge on Warfarin: OR (95% CI, p-value)

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>95% CI</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Age</td>
<td>0.93</td>
<td>(0.90-0.95)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Male gender</td>
<td>0.76</td>
<td>(0.56-1.03)</td>
<td>0.079</td>
</tr>
<tr>
<td>Black race</td>
<td>1.09</td>
<td>(0.81-1.47)</td>
<td>0.581</td>
</tr>
<tr>
<td>GFR Cockcroft-Gault</td>
<td>1.00</td>
<td>(0.98-1.00)</td>
<td>0.142</td>
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<tr>
<td>Discharged on aspirin</td>
<td>0.57</td>
<td>(0.43-0.75)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHADS-VASc score</td>
<td>1.06</td>
<td>(0.93-1.21)</td>
<td>0.388</td>
</tr>
<tr>
<td>Body mass index</td>
<td>1.03</td>
<td>(1.01-1.06)</td>
<td>0.018</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>1.11</td>
<td>(1.04-1.19)</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Results

- Older cohort included 933 patients (and the younger cohort included 1055 patients)
- Older cohort was less likely to be discharged on warfarin, despite a higher mean CHA2DS2-VASc score (p < 0.001)
- The younger cohort had higher rates of warfarin prescription as CHA2DS2-VASc score increased (p = <0.001)
- Higher rates of warfarin prescription in younger cohort as CHA2DS2-VASc score increased (p = <0.001)
- Older cohort, had no statistically significant difference between CHA2DS2-VASc score and warfarin prescription on discharge (p = 0.16) (Figure 2)
- Multivariate analysis demonstrated warfarin prescription in older adults was independently associated with lower rates of aspirin prescription, lower body mass index (BMI), and relative anemia
- Additionally, there was no difference between mean CHA2DS2-VASc score and warfarin prescription (OR = 1.06 (95% CI 0.93 - 1.21), p = 0.388) in the older cohort (Figure 3)

Conclusions

- Although there is enough evidence of anticoagulation benefits in older adults with AF and AFI, underprescription remains high regardless of their CHA2DS2-VASc score
- Our study suggests that certain patterns associated with underprescription include the presence of anemia, low weight, and aspirin prescription
- There may be hesitancy from clinicians to anticoagulate elderly patients when perceived risks outweighs benefits
- Patterns of anticoagulation underprescription can shed light on these patients who are already at the highest risk of TE events and have proven to benefit from therapeutic anticoagulation
- Careful assessment of benefits and risks, along with shared decision making, are necessary for optimal care of these older patients with AF or AFI