Outcomes after rhythm versus rate control in patients with atrial fibrillation: the international prospective GARFIELD Registry

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BACKGROUND

Guideline recommendations for atrial fibrillation (AF) treatment vary by country and within countries. Prospective, observational studies describing outcomes according to rhythm versus rate control are lacking.

Randomized trials and registries, such as AFFIRM1 and RECORD², have demonstrated no difference in risks of cardioembolic clinical events between atrial fibrillation (AF) patients assigned to either rhythm or rate control therapy.

In comparison, a population-based observational study conducted in >57,000 Quebec patients aged ≥65 years with a discharge diagnosis of AF showed that, in comparison with rate control, the use of rhythm control therapy was associated with lower risks of both long-term death (≥5 years)³ and stroke/transient ischemic attack (TIA)⁴ particularly among those at moderate to high risk of stroke.

PURPOSE

To determine whether rhythm control confers clinical benefits over rate control in patients with newly diagnosed non-valvular AF.

METHODS

GARFIELD is an ongoing, international, prospective, observational study of consecutively recruited adult (≥18 years) with newly diagnosed (≤6 weeks previously) non-valvular AF and ≥1 additional investigator-determined stroke risk factor(s).5 Such risk factors were not preselected in the study protocol, nor were they limited to those in risk-stratification schemes such as CHADS2⁶ or CHA2DS2-VASc.⁷

Investigator sites were representative of the distribution of AF care settings in each country.

A total of 10,614 patients were recruited into cohort 1 at 540 randomly selected sites in 19 countries over a 2-year period; of these patients, 5089 were recruited retrospectively as a validation cohort, and 5525 were recruited prospectively, and comprise the study population for this analysis.

Patients were classified as being on either rate or rhythm control at baseline; those simultaneously prescribed rhythm and rate control therapies were classified as being on rhythm control. A Cox proportional hazards model was used to determine the effects of rhythm versus rate control on clinical outcomes at 1 year after AF diagnosis. Outcomes of all-cause death and stroke/systemic embolism (SE) were adjusted for antithrombotic treatments and components of the CHADS2⁶ or CHA2DS2-VASc.⁷ score. The outcome of major bleed was adjusted for antithrombotic treatments and components of the HAS-BLED score.⁸

RESULTS

Of the 5525 adults enrolled prospectively, 2107 (38.1%) were on rhythm control and 2754 (49.8%) were on rate control therapy only. Of the rhythm control patients, 1.6% (n=33) were simultaneously receiving beta-blocker medication.

Patients in the rhythm control group were on average younger and had lower stroke and bled risk scores (Table) and were less likely to have antithrombotic treatments initiated at AF diagnosis (Figure 1).

The rate of all-cause death was lower in the rhythm control group; while rates of stroke/SE and major bleeds were similar (Figure 2). After adjustment, rhythm control was associated with a statistically significantly lower risk of death.

In this multinational observational study, patients with newly diagnosed non-valvular AF and ≥1 stroke risk factor who were treated with rhythm control were younger and had lower risk scores than those treated with rate control.

After adjustment, rhythm control was associated with a reduced risk of death compared with rate control. The two groups differed in many respects, however, and we may not have been able to adjust for residual confounding. These results must therefore be interpreted with caution.

REFERENCES


DEVELOPMENT OF INTEREST

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TABLE Patient baseline characteristics according to rhythm or rate control.

<table>
<thead>
<tr>
<th>Women (%)</th>
<th>Age, mean (IQR) years</th>
<th>BMI, mean±SD, kg/m²</th>
<th>Pulse, mean±SD, bpm</th>
<th>Smoking status</th>
<th>Medication history, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhythm control</td>
<td>42.3 (n = 2107)</td>
<td>69 (60–77)</td>
<td>27.3±5.0</td>
<td>88.1±26.9</td>
<td>34.0</td>
</tr>
<tr>
<td>Rate control</td>
<td>45.5 (n = 2754)</td>
<td>72 (64–79)</td>
<td>27.3±7.8</td>
<td>90.2±25.8</td>
<td>34.0</td>
</tr>
<tr>
<td>P value*</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>0.80</td>
<td>0.011</td>
<td>0.53</td>
</tr>
</tbody>
</table>

| CHADS2 | 1.7±e1.1 | 2.0±e1.1 | <0.001 |
| CHA2DS2-VASc | 2.0±e1.6 | 3.3±e1.8 | <0.001 |
| HAS-BLED | 4.9 | 5.3 | <0.001 |

*P value from Cox proportional hazards model with appropriate adjustment.