A PhArmacist/RN supervised medication TitrationN program to achiEve heart rate/ rythm control in Atrial Fibrillation: a retrospective chart review (PARTNER-AF)

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Introduction
Atrial fibrillation (AF) is a chronic condition that varies in its presentation of symptoms from asymptomatic to debilitating.

Incidence
- Increases exponentially with age, from 0.1% in those less than 55 years old to approximately 10% in patients over 80 years of age.

Atrial Fibrillation Clinic (AFC)
- Started in January 2010 to serve all of Island Health.
- Goal: Timely access to care and reduce emergency room and electrophysiologist (EP) visits.
- Interdisciplinary approach to AF support and treatment (pharmacist/RN).
- Services: Intake assessments, education classes, treatment support, and medication management through the Medication Titration Program (MTP).

Medication Titration Program (MTP)
- Started in June 2011 as part of the AFC.
- AFC pharmacist/RN titrate AF medications based on standardized, pre-approved medication titration algorithms, and monitor patients.
- Lack of published evidence for a standardized MTP in a pharmacist/RN run AFC.

Method: Retrospective Chart Review

AFC started January 2010
MTP started June 2011
Study end date February 2013

- MTP group:
  - Referred by EP between June 2011 to February 2013
  - Case matched variable: Rate or rhythm strategy, AF classification, CCS-SAF score, age, gender, and region in Island Health

Method: Retrospective Chart Review

- Referred outside Island Health
- Planned procedure at initial assessment
  - Cardioversion, pulmonary vein ablation, or AF in collaboration with cardiologist
- Not prescribed a medication at initial EP assessment

Statistical Method
- Case matched:
  - 1 to 1 classification, CCS
  - AFC pharmacist/RN Titrate and Monitor

Table 1: Characterization of patient populations

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Total</th>
<th>Anticoagulated (%)</th>
<th>Permanent (%)</th>
<th>Paroxysmal (%)</th>
<th>Persistent (%)</th>
<th>Rate (%)</th>
<th>EP encounters</th>
<th>MTP encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-74</td>
<td>26 (32)</td>
<td>42 (52)</td>
<td>12 (15)</td>
<td>11 (13)</td>
<td>10 (12)</td>
<td>9 (11)</td>
<td>6 (7)</td>
<td>2 (3)</td>
<td>2 (2)</td>
</tr>
<tr>
<td>75+</td>
<td>26 (32)</td>
<td>42 (52)</td>
<td>12 (15)</td>
<td>11 (13)</td>
<td>10 (12)</td>
<td>9 (11)</td>
<td>6 (7)</td>
<td>2 (3)</td>
<td>2 (2)</td>
</tr>
</tbody>
</table>

Study Objectives

Objective 1: Characterize the patient population that was provided standard care of EP by as compared with the patients who were followed by the MTP.

Objective 2: Assess the outcomes in patients in the MTP compared with a group of case matched patients receiving standard EP care.

Outcomes Measures
1. Proportion of patients who succeeded or failed
   a) Succeeded: Stable on prescribed medication for 1 year or discharged by EP, whichever comes first
   b) Failed: Discontinuation of or addition to prescribed medication, or subsequent procedural intervention
2. Time to end point from initial assessment: a) Succeeded, b) Failed
3. # emergency room visits/hospitalizations at 6 months and 12 months
4. # AFC or EP encounters (phone/person)
5. Time to first follow up by MTP or EP

Discussion

Objective 1:
- Wide variety of patients referred to the pharmacist/RN run MTP.
- Possible indication that patients referred to the MTP have more severe symptoms based on CCS-SAF score.

Objective 2:
1. No difference in proportion of patients who succeeded/failed suggesting that the MTP is an equivalent to EP for achieving drug outcomes.
   - Last day of data collection was February 26, 2014. MTP patients who had not yet succeeded or failed by this date were not analyzed.
2. Timed endpoint:
   - MTP rate patients who succeeded faster time to EP discharge (SS), suggesting medications were titrated to effect more rapidly.
   - MTP patients who had succeeded faster time to EP discharge but this was not statistically significant.
3. No difference in number of emergency room visits/hospitalizations
   - Numerically more emergency room visits than in patients in the MTP group, driven by a patient (short time in the MTP but many subsequent visits).
4. Number of EP and AFC encounters
   - MTP patients received comprehensive monitoring allowing for faster titration of medications, potentially explaining faster time to EP discharge.
   - MTP did not reduce the mean number of EP visits as was previously described using the titration algorithms.

Conclusion

MTP vs. Standard EP care
- MTP group: Higher proportion of females (rhythm group); higher proportion of males and persistent AF (rate group); higher symptom severity scores.
- Statistical significance:
  - MTP rate control group had faster time to EP discharge.
  - MTP group had more follow up encounters with AFC.
  - MTP group had faster time to first follow up after initial EP assessment.
- No difference in:
  - Proportion of patients who succeeded/failed.
  - Time to EP discharge.
  - Discharging rhythm control patients who had succeeded.

Data was not collected on GP visits; MTP may have possible impact.

Implications to Practice

The MTP has been in operation for 3 years and with every year, the number of patients monitored under this program increases.
- AF is complicated, often debilitating condition.
- The MTP provides close monitoring and additional support for patients and should be considered for all patients.
- Future research: Large, randomized, prospective trial to confirm results and determine time to success or failure in relation to patient quality of life, cost effectiveness, and overall care utilization.