A retrospective clinical audit of oral anticoagulation management in a general practice surgery

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A retrospective clinical audit of oral anticoagulation management in a general practice surgery

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Background

Oral anticoagulants are predominantly managed in general practice. Warfarin therapy has been the mainstay of treatment although the emergence of newer oral anticoagulants (NOACs) has provided an alternative for some indications. The International Normalised Ratio (INR) is used as a surrogate measure to monitor warfarin safety and efficacy. For the individual patient on warfarin, time in the therapeutic range (INR) > 60% is considered ideal. NOACs, such as rivaroxaban and dabigatran, require no routine coagulation monitoring.

Aims and Objectives

The primary objective of the audit was to assess the quality and safety of oral anticoagulation in a general practice setting. Outcomes included investigation of:
- INR for warfarinised patients, the TTR of the practice warfarin cohort (TTR) using the Rosendorff method;
- INR and treatment monitoring for NOAC patients;
- bleeding risk using the HAS-BLED tool in all patients for the common modifiable bleeding risk factors;
- concurrent prescription and over-the-counter medications with the potential to interact with warfarin and/or NOACs.

Methods

A 2-year retrospective clinical audit was conducted on records of orally anticoagulated patients who attended a sub-branch general practice. Data collected and parameters calculated were:

- for warfarinised patients: INR and target INR range, TTR for individuals (TTR) using the Rosendorff method;
- for NOAC patients: serum creatinine and eGFR for patients taking NOACs, Creation time (C3) using eGFR and both serum and INR monitoring;
- bleeding risk factors in all patients using the HAS-BLED tool;
- prescribed medications of all patients as recorded in GP software.

Results

Eighty patients received anticoagulants with a mean age of 75.5 years. Warfarinised cohort - 74 patients (see figure 1).

- The mean INR was 2.64;
- 56 patients (75.6%) had a mean TTR of > 60%, considered an adequate TTR for the individual patient; 19 patients (26.3%) had a mean TTR of < 60% considered less than ideal.

Results (continued)

Figure 1. Mean TTR for patients on warfarin

All patients - bleeding risk factors (figure 3)

- 44 patients (65.6%) had 2 or more bleeding risk factors;
- Mean number of risk factors per patient, 2.34.
- Both INR and HAS-BLED bleeding risk factors were recorded for 50 (69.4%) patients.
- All NOAC patients had naïve renal function.

Table 1: Interacting medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>30</td>
</tr>
<tr>
<td>Rivaroxaban</td>
<td>25</td>
</tr>
<tr>
<td>Dabigatran</td>
<td>20</td>
</tr>
</tbody>
</table>

Figure 2: Creatinine clearance for NOAC cohort

- Mean eGFR calculated by the Cockcroft-Gault equation was 66.6 ml/min.
- NOAC using dabigatran and rivaroxaban had a mean INR > 60%, calculated using the MDRD equation and reported by pathology.
- Three of 30 patients underwent routine renal function monitoring and dose adjustment (Table 1).

Figure 3: HAS-BLED bleeding risk factors

Table 2: Medications and NOAC dose (mg)

<table>
<thead>
<tr>
<th>Medication</th>
<th>NOAC dose (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>20</td>
</tr>
<tr>
<td>Rivaroxaban</td>
<td>25</td>
</tr>
<tr>
<td>Dabigatran</td>
<td>20</td>
</tr>
</tbody>
</table>

Conclusion

This retrospective audit of anticoagulation management in the general practice has shown that warfarin management appears to be done satisfactorily with the majority of patients achieving an INR > 60% in the therapeutic range, although adherence to NOACs over warfarin in terms of outcomes is less. Patients on NOACs had more risk factors than warfarinised patients. Further research is needed to assess the role of NOACs in general practice.