BACKGROUND

• The 2016 CHEST guidelines on antithrombotic therapy for venous thromboembolism (VTE) recommend the use of novel oral anticoagulants (NOACs) over warfarin for atrial fibrillation (warfarin) for the long-term treatment of VTE patients without cancer.

• However, patients prescribed KAPOTRO® (rivaroxaban), ELIQUIS® (apixaban), PRADAXA® (dabigatran), or XARELTO® (ximelagatran) are not monitored closely by health care providers for effective patient outcomes.

• Retrospective analyses of health care claims data in the Humana database from June 2012 to December 2013 (N=11,948) and from July 2013 and December 2014 (N=21,175) reported that only 67.2% to 75.4% of NOAC patients met the POC threshold of the POC measure.

• Suboptimal adherence to NOACs puts patients at high risk of thromboembolic associations with the development of stroke or myocardial infarction and leading to increases in morbidity and mortality, healthcare resource utilization, and direct and indirect costs.5

• To better manage patient adherence to NOACs, it is important to understand the reasons behind non-adherence and evaluate the impact of routine patient follow-up.

OBJECTIVE

• To assess real-world adherence and barriers to adherence for patients chronically taking NOACs, and to review the benefits of pharmacy medication therapy management and regular monitoring of NOAC patients.

METHODS

STUDY DESIGN

• Single-center, single-arm, prospective database study

DATA SOURCE

• Sharpened safety registry data gathered from electronic medical records were used to identify patients who initiated chronic NOAC therapy between January 26 and September 25, 2015.

INCLUSION CRITERIA

• Age 18 years or older

• English and/or Spanish speakers

• Prescribed a NOAC for at least 3 months

• Initiated NOAC treatment between January 26 and September 25, 2015

• Received care by the Sharp Rees-Stealy Medical Group in San Diego, California

• Enrolled in a fully delegated health maintenance organization insurance plan

• Verbally consented to participate in this study and received an initial call and 1 or more follow-up calls.

EXCLUSION CRITERIA

• Patients diagnosed with Alzheimer’s disease, dementia, schizophrenia, or cognitive deficit due to stroke, and/or placement in hospice care for a documented terminal illness

• Patients who switched NOAC agents or discontinued NOAC treatment due to adverse effects or other reasons before completing at least 3 months of therapy

INITIAL PHONE CALLS

• Prior to the initial call, pharmacists performed a comprehensive medication review for each patient and checked the awareness of NOAC dosing, drug-drug interactions (DDIs), and potential therapeutic duplications.

• Initial calls were conducted by registered clinical pharmacists within the first month of NOAC treatment initiation.

• Patients’ understanding of the treatment indication, directions of use, adverse drug reactions (ADRs), dose-missed dosing, and importance of adherence were assessed during the initial call.

• Pharmacists also documented medication possession by asking patients if they had their NOACs on-hand during the initial call and by contacting their respective pharmacies to verify that their NOAC prescription was successfully filled.

FOLLOW-UP PHONE CALLS

• Patients received follow-up phone calls by registered clinical pharmacists on a monthly basis.

• Pharmacists provided patient education, and documented NOAC possession and timeliness of refills, the patient-reported number of missed doses, and each patient’s reasons for missed doses in adherence.

• Prescribers were notified if patients had consistently poor persistence to NOAC therapy based on the number of missed doses and/or not refilling NOAC prescriptions in a timely manner.

RESULTS

• 107 patients received an initial call and at least 1 follow-up call, including 68 (63.6%) patients on rivaroxaban, 36 (33.6%) on apixaban, 2 (2.8%) on dabigatran, and 0 (0%) on edoxaban (Table 1).

• Included patients were 51.4% female, had a mean age of 68.7 years, and reported taking 8.9 prescription and over-the-counter medications on average, which is high compared with the average pill burden of 3.8 medications per VTE patient (Table 1).

• By conducting a comprehensive medication review prior to the initial call, pharmacists identified 12 duplications in anticoagulation therapy, 3 instances of inappropriate NOAC dosing, and 21 potential DDIs.

• 104 (97.2%) patients had filled their NOAC prescription by the initial call and 106 (99.1%) reported having the medication on-hand during the follow-up phone calls (Table 2 and Table 3).

• Only 50 (46.7%) patients were aware of the potential ADRs of NOACs and only 33 (30.8%) knew how to manage missed doses (Table 2 and Table 3).

• On average, initial and follow-up calls lasted 11.6 and 4.6 minutes, respectively.

CONCLUSIONS

• Approximately one-third of patients missed at least 1 NOAC dose per month due to forgetfulness, cost, ADRs, or the complexity of their regimen.

• Given that most NOAC patients have a relatively high pill burden, a comprehensive medication review by a pharmacist at the initiation of NOAC therapy may be essential in identifying potential DDIs, accidental duplications in therapy, and/or inappropriate NOAC dosing.

• Limited patient understanding of NOAC ADRs and proper dose-missed dosing management identifies an opportunity for pharmacists to fill knowledge gaps and improve adherence through regular patient follow-up.

LIMITATIONS

• Data collected during phone calls were patient-reported and subjective in nature.

• Patients who were selected to participate in this study may be more involved in their healthcare management, and therefore may have better persistence to treatment in comparison to patients who refused to participate.

• Most of the patients enrolled in the study were on either rivaroxaban or apixaban; therefore, the results may not be generalizable to dabigatran or edoxaban due to the lack of data.

Table 1: Patient Demographics

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Number of Drugs</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>M/F</td>
<td>Sept 75</td>
<td>Yes</td>
</tr>
<tr>
<td>25-34</td>
<td>M/F</td>
<td>20-29</td>
<td>Yes</td>
</tr>
<tr>
<td>35-44</td>
<td>M/F</td>
<td>30-39</td>
<td>Yes</td>
</tr>
<tr>
<td>45-54</td>
<td>M/F</td>
<td>40-49</td>
<td>Yes</td>
</tr>
<tr>
<td>55-64</td>
<td>M/F</td>
<td>50-59</td>
<td>Yes</td>
</tr>
<tr>
<td>65-74</td>
<td>M/F</td>
<td>60-69</td>
<td>Yes</td>
</tr>
<tr>
<td>75-84</td>
<td>M/F</td>
<td>70-79</td>
<td>Yes</td>
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<tr>
<td>85-94</td>
<td>M/F</td>
<td>80-89</td>
<td>Yes</td>
</tr>
<tr>
<td>95-104</td>
<td>M/F</td>
<td>90-99</td>
<td>Yes</td>
</tr>
<tr>
<td>&gt;105</td>
<td>M/F</td>
<td>100-109</td>
<td>Yes</td>
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</table>

Table 2: Results From Initial Phone Calls

<table>
<thead>
<tr>
<th>Appropriateness</th>
<th>KAPOTRO® (rivaroxaban)</th>
<th>XARELTO® (ximelagatran)</th>
<th>PRADAXA® (dabigatran)</th>
<th>All Patients (N=107)</th>
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<tbody>
<tr>
<td>Yes</td>
<td>87 (81.0%)</td>
<td>43 (39.8%)</td>
<td>88 (82.4%)</td>
<td>220 (96.3%)</td>
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<tr>
<td>No</td>
<td>13 (12.5%)</td>
<td>3 (2.8%)</td>
<td>15 (13.9%)</td>
<td>32 (14.7%)</td>
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</tbody>
</table>

Table 3: Results From Follow-up Calls

<table>
<thead>
<tr>
<th>Medication</th>
<th>Missed 1 or More Missed Doses in Past Week</th>
<th>Missed 1 or More Missed Doses in Past Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>87 (81.0%)</td>
<td>87 (81.0%)</td>
</tr>
<tr>
<td>No</td>
<td>13 (12.5%)</td>
<td>13 (12.5%)</td>
</tr>
</tbody>
</table>

Figure 1: Patient-reported Barriers to Adherence (n=23)