Disparities in Real-World Utilization Patterns of Potassium Binders in US Veterans with Hyperkalemia

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BACKGROUND

- Hyperkalemia (HK) is a potentially life-threatening metabolic disorder and a challenging clinical problem for clinicians caring for patients with chronic kidney disease (CKD), diabetes mellitus (DM), or heart failure (HF).
- The management of chronic HK has always been limited to renin-angiotensin-aldosterone system inhibitor (RAAS) dose reduction or discontinuation, diuretic therapy, dietary potassium (K+) restriction, or the use of sodium polystyrene sulfonate (SPS).
- Patiromer (PAT) is a sodium-free, non-absorbed, K+-binding polymer approved for the treatment of HK, including in the United States, the European Union, Switzerland, and Australia, among others.
- Little has been reported about the real-world utilization of this medication.

OBJECTIVE

This historical cohort study aimed to describe K+ binder treatment patterns in US Veterans with HK.

METHODS

- PAT and SPS utilization were evaluated using the Veterans Health Administration (VHA) Corporate Data Warehouse (CDW) database from 1/1/16 to 8/31/18 (Figure 1).
- Two HK cohorts were identified: PAT cohort and SPS cohort.
- The index date is the date of the first pharmacy dispensing claim for PAT or SPS during the study period. Index date may have started anytime between 1/1/16 and 8/31/18.
- Patients were included who had a pre-index K+ ≥5.1 mEq/L, a ≥20% increase in K+ from baseline, and a diagnosis of HF, DM, or CHF.
- We evaluated two exposure classification groups: Intent-to-treat (ITT) and continuous exposure (CE). CE was defined as ≥30 days of gap in exposure to binder therapy.
- Follow-up began at index date and ended at first censoring event.
- ITT: death, end of study follow-up period, or discontinuation of K+ binder, whichever occurred first.
- CE: discontinuation or switch of index K+ binder, end of study follow-up period, or discontinuation of K+ binder.

RESULTS

- Baseline patient characteristics (12 months before index date) (Table 1):
  - Mean ages were 69 years (PAT) and 72 years (SPS) with the majority of patients being male (≥70%) and ≥62% African American (PAT).
  - Comorbidities: higher percentage of CHF, HF, end-stage renal disease (ESRD), and peripheral vascular disease (PVD) in the PAT group.
  - Medications: PAT cohort observed a higher percentage of beta-blockers, calcium channel blockers, loop diuretics, insulin, and SPS use and a lower percentage of NSAID and RAAS use.

-Table 2. Baseline laboratory data at 6 months post-index:

- TABLE 1. PATIENT CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>PAT</th>
<th>SPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>69</td>
<td>72</td>
</tr>
<tr>
<td>CHF, n (%)</td>
<td>57</td>
<td>73</td>
</tr>
<tr>
<td>ESRD, n (%)</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>DM, n (%)</td>
<td>59</td>
<td>61</td>
</tr>
<tr>
<td>Uremia, n (%)</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>107</td>
<td>120</td>
</tr>
<tr>
<td>Mean eGFR (mL/min/1.73m²)</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Mean K+ (mEq/L)</td>
<td>5.4</td>
<td>5.6</td>
</tr>
</tbody>
</table>

- At 6 months post-index, 90% and 2% remained continuously exposed to PAT and SPS, respectively (Figure 2).

- Table 3. Drug utilization metrics at 6 months post-index:

- FIGURE 2. PAT AND SPS DURATION OF CONTINUOUS USE

- FIGURE 3. INITIAL BINDER DOSES

- The initial dose was 8.4 g (PAT) and 15 g (SPS) for 97% and 94%, respectively (Figure 3).

- At 6 months post-index, 90% and 2% remained continuously exposed to PAT and SPS, respectively (Figure 2).

- TABLE 3. DRUG UTILIZATION METRICS AT 6 MONTHS POST-INDEX

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>PAT</th>
<th>SPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDC</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Days supplied/fills</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>eGFR, n (%)</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>PDC, n (%)</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Rates defined</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

- Percent patients PDC ≤50% | PAT: 33% | SPS: 33% (60% of patients)

- The median number of dispensed days supplied was 30 for PAT and 30 for SPS, and the median medication fills were 2 for PAT and 1 for SPS.

- The median PDC for PAT/SPS was 41%/2% respectively; PDC >80% was 16% for PAT and 5% for SPS (Table 3).

- Significant disclosures.

CONCLUSIONS

- This descriptive analysis among US Veterans indicates a contrasting utilization pattern for patients exposed to PAT and SPS.
- At baseline, a greater percentage of patients had heart failure and more advanced kidney disease in the PAT cohort.
- The dispersion of K+ utilization, number of prescription fills, and higher PDC suggest a more chronic treatment pattern for PAT and a more episodic treatment pattern for SPS.
- These findings warrant additional investigation as PAT use increases.

REFERENCES

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Ancestry demographics used to describe K+ binder treatment patterns in US Veterans with HK.

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