Gabapentin and Patient-reported Medication Tolerance: A Case Series

Dawson Lubbert, PharmD Candidate; Parker Mortensen, Pharm D Candidate; Chris M. Herndon, PharmD, BCACP, FASHP, FCCP

Introduction
 o Peripheral neuropathic pain is an often difficult to treat condition, which may stem from its various etiologies.  
 o Gabapentin, while only FDA approved for PHN, is often prescribed for neuropathic pain outside of this indication 2,3
 o There exists no formal literature about developing tolerance to gabapentin, but observations by clinicians have noted a predictable decrease in efficacy with time.

Objectives
 o Identify instances of medication tolerance to gabapentin, as reported by patients.
 o Identify characteristics, shared between participants, that may indicate a higher likelihood of fostering tolerance to gabapentin.

Methods
 o Following IRB approval, the Athena EHR was used to identify patients of SIHF Healthcare that had received a gabapentin prescription in the last 90 days.
 o The generated list was then scrubbed of patients younger than 18 or older than 89.
 o Patients with diagnoses of DPN, PHN or trigeminal neuralgia were then identified and later contacted with a series of questions about efficacy of gabapentin.
 o Following the survey, which was conducted by phone, patients who consented then promptly had their responses deidentified.

Results
 o 56 patients were identified that met all inclusion and exclusion criteria
 o 16 of these 56 patients responded to the survey, with 3 (19%) reporting gabapentin as effective on start but required an increase in dose later to return efficacy.
 o 5 of 16 patients (31%) responded that dose increases were needed as the medication lost effect over time.

<table>
<thead>
<tr>
<th>Age (years), mean (SD)</th>
<th>53.9(10.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11 (68.75)</td>
</tr>
<tr>
<td>Female</td>
<td>5 (31.25)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>12 (75)</td>
</tr>
<tr>
<td>African American</td>
<td>2 (12.5)</td>
</tr>
<tr>
<td>Declined</td>
<td>2 (12.5)</td>
</tr>
</tbody>
</table>

Case 1:
 o 45 y/o African American male
 o Gabapentin was 100% effective in pain control at start, with loss of effect in 2 months
 o Received 2 dose increases, endorses gabapentin is now only 50% effective for pain control

Case 2:
 o 55 y/o white male
 o Gabapentin was 85% effective in pain control at start, with loss of effect in 3 months
 o Received 1 dose increase, endorses gabapentin is now 75% effective for pain control

Case 3:
 o 59 y/o male who declined to state his race
 o Gabapentin was 100% effective in pain control at start, with loss of effect in 1 year
 o Received 1 dose increase, endorses gabapentin is now 100% effective for pain control again

Conclusions
 o Three patients were identified who endorsed a loss in efficacy of gabapentin over time
 o The only similar characteristic shared by the three patients was a diagnosis of painful diabetic peripheral neuropathy
 o Due to deidentification of patient responses, glycemic control could not be assessed
 o The achieved sample of 16 patients being lower than needed may be due to the pool of eligible patients being too restrictive.

References
 o Goodman CW, Brett AS. A clinical overview of off-label use of gabapentinoid drugs. *JAMA Internal Medicine*. 2019;179(5):695

Disclosures
 o Mr. Lubbert and Mr. Mortensen have no financial conflicts of interest to disclose
 o Dr. Herndon discloses the following: consulting fees (US Dept of Justice), speaking honoraria (ASHP, ICHP, PTCE), stock ownership of private company (Spouse – LiveLife Natural Products)

Contact
 o dlubbert@siue.edu for Mr. Lubbert
 o pmorten@siue.edu for Mr. Mortensen
 o cherndo@siue.edu for Dr. Herndon