Hayley Hutton Paediatric registrar

The use of Gabapentin for the management of pain in Guillain-Barré Syndrome in the paediatric setting.

29 October 2014
Gabapentin

The Good

The Bad

And the Unknown...
Does OUR off label use of Gabapentin in Neuropathic pain stem from illicit marketing or is there some scientific evidence?
Efficacy of Gabapentin?

- Minimal paediatric data
- None out of Africa
- Pandey et al: Efficacy and safety of Gabapentin in adults with severe Guillain-Barré Syndrome
- Some proven efficacy in conditions such as: complex regional pain syndromes; peri operatively; post herpetic neuralgia.
Methodology

- Observational, retrospective study
- All patients admitted to RXH with Guillain- Barré syndrome 2002 - 2012
- Medical records and Prescription charts reviewed
- Data was collected using Epidata and analysed using STATA v12.0
Age of population

Age in years

No.
3%
## Characteristics of Hospital stay

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall</th>
<th>Gaba</th>
<th>Carba</th>
<th>Neither</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of hospital stay</td>
<td><strong>14 days (+-43)</strong></td>
<td>48</td>
<td>45</td>
<td>10</td>
<td>0.85</td>
</tr>
<tr>
<td>No. Needing PICU</td>
<td>41%</td>
<td>64</td>
<td>59</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Length of PICU stay</td>
<td><strong>21 days (+-33)</strong></td>
<td>26</td>
<td>31</td>
<td>15</td>
<td>0.18</td>
</tr>
<tr>
<td>No. Needing ventilatory support</td>
<td>31%</td>
<td>50</td>
<td>52</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>No. Needing a tracheostomy</td>
<td>28%</td>
<td>45</td>
<td>52</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Duration on tracheostomy</td>
<td><strong>54 days</strong></td>
<td>57</td>
<td>58</td>
<td>31</td>
<td>0.68</td>
</tr>
</tbody>
</table>
## Characteristics of Pain

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall</th>
<th>Gaba</th>
<th>Carba</th>
<th>Neither</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion with documented pain</td>
<td>76%</td>
<td>100</td>
<td>86</td>
<td>54</td>
<td>0.67</td>
</tr>
<tr>
<td>Mean no. Analgesics used</td>
<td>2.3 (+- 1.8)</td>
<td>3.4</td>
<td>3.2</td>
<td>1.2</td>
<td>0.67</td>
</tr>
<tr>
<td>Duration of pain</td>
<td>4 days (+-8)</td>
<td>12.7</td>
<td>13.4</td>
<td>4.2</td>
<td>0.90</td>
</tr>
<tr>
<td>Episodes of breakthrough pain</td>
<td>55%</td>
<td>77</td>
<td>79</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Caregiver at bedside</td>
<td>93%</td>
<td>86</td>
<td>93</td>
<td>95</td>
<td></td>
</tr>
</tbody>
</table>
Limitations of the study

- Retrospective nature
- Lack of standardized methods to measure pain
Conclusions of the study

- Assessment of pain is suboptimal
- Dramatic increase in the use of Gabapentin at RXH
Looking ahead...

- Randomized, double blinded control trial
- Gabapentin vs Carbamazepine for the management of neuropathic pain
- Guillain-Barré Syndrome
A very big thank you to Prof Jo Wilmshurst and Prof Jenny Thomas
References:


Pregabalin?

- Very similar in action to Gabapentin
- Has been thought of as the superior pharmacological agent
- But...
- Safety and efficacy has not been established in children
- Not licensed for use in children <12 years
- Cost
Gabapentin fact file

- Derivative of GABA
- Absorbed via GIT with 80% bioavailability
- Distribution: not bound to plasma proteins, penetrates CSF
- Metabolism: Negligible
- Excretion: Renal excretion, t1/2
- Adverse effects: dizziness and somnolence, dry mouth, oedema, blurred vision (dose dependent/reversible)
- MOA:*Inhibition of Ca channels

*MOA: Mechanism of Action
Pain rating tools

- Fraught with difficulty
- Few validated tools
- Neuropathic pain
- Self report requires an alert and communicative child
- Autonomic dysfunction
- FLACC; Self report; NCCPC-R