A Survey of Clinician Knowledge Regarding Phystostigmine Use in Overdose

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BACKGROUND
• Education on phystostigmine use as an antidote is relevant for Emergency Medicine (EM) training.
• Still, physician knowledge remains variable.

RESEARCH QUESTION
• What is the current EM physician knowledge of physostigmine?

METHODS
• This was an anonymous survey of EM physicians and residents.
• A survey was created and tested on physicians for completion time and clarity.
• After reformatting, the survey was piloted among different physicians at two different institutions.
• A printed survey and/or e-mail link to an electronic version was provided for survey participants following local IRB approval.
• Physicians who developed the survey did not participate.
• Responses remained confidential.
• No identifiable information was collected.
• For the printed version, three research team members individually entered survey data into the electronic system, SurveyMonkey.

RESULTS
• The table lists selected survey results.
• While 63% of EM faculty had rotated on a toxicology service during training, less than half had previously administered physostigmine.
• EM resident toxicology service experience varied according to year.
• Interestingly, while the majority of 4th year residents felt comfortable administering phystostigmine without toxicology input, only 17% answered “yes” when asked if physostigmine was indicated in glaucoma treatment, the only Food and Drug Administration approved indication.
• Additionally, ability to identify contraindications to physostigmine use varied significantly between faculty and residents at all training levels.

DISCUSSION
• Individual clinician comfort and experience with physostigmine vary widely between EM residents and attendings.
• Comfort with physostigmine use seems to peak in the last years of residency and then fall after graduation in both 3 and 4 year residencies.
• Self-reported knowledge of contraindications of physostigmine use is insufficient.
• There appears to be a knowledge gap and an educational need for EM physicians at all levels of training concerning the indications and contraindications for administering physostigmine.

CONCLUSION
• Future educational activities must address the varying levels of knowledge and experience regarding physostigmine use among practicing and training EM physicians.
• Practicing EM physicians may benefit from continuing education resources that specifically focus on physostigmine use.

TABLE

<table>
<thead>
<tr>
<th>Possible Respondents</th>
<th>Faculty N=39</th>
<th>Interns N=30</th>
<th>2nd Years N=21</th>
<th>3rd Years N=25</th>
<th>4th Years N=8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotated on a toxicology service</td>
<td>62%</td>
<td>63%</td>
<td>67%</td>
<td>88%</td>
<td>100%</td>
</tr>
<tr>
<td>Administered physostigmine</td>
<td>44%</td>
<td>13%</td>
<td>5%</td>
<td>24%</td>
<td>50%</td>
</tr>
<tr>
<td>Comfortable administering physostigmine without toxicologist consultation</td>
<td>38%</td>
<td>27%</td>
<td>0%</td>
<td>44%</td>
<td>75%</td>
</tr>
<tr>
<td>Knowledge of Indication: Glaucoma</td>
<td>23%</td>
<td>30%</td>
<td>5%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Knowledge of Indication: Anticholinergic toxicity</td>
<td>90%</td>
<td>73%</td>
<td>95%</td>
<td>88%</td>
<td>75%</td>
</tr>
<tr>
<td>Knowledge of Contraindication: Asthma</td>
<td>51%</td>
<td>43%</td>
<td>29%</td>
<td>8%</td>
<td>38%</td>
</tr>
<tr>
<td>Knowledge of Contraindication: Intestinal obstruction</td>
<td>49%</td>
<td>27%</td>
<td>25%</td>
<td>24%</td>
<td>25%</td>
</tr>
<tr>
<td>Knowledge of Contraindication: Tricyclic antidepressants</td>
<td>33%</td>
<td>20%</td>
<td>24%</td>
<td>40%</td>
<td>38%</td>
</tr>
</tbody>
</table>