Hypoglycemia in Diabetes: Prevent it, Prepare for it, Identify it and Treat it

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Hypoglycemia in Diabetes

INTRODUCTION

Hypoglycemia is a prevalent and potentially dangerous condition that can affect anyone with diabetes who is treated with insulin preparations or oral insulin secretagogues. The majority of the care of patients with diabetes occurs in the primary care setting. Nurse practitioners are frequently engaged as primary care providers. Nurse practitioners may not be fully informed about how best to assess for, manage, and treat the person with diabetes regarding hypoglycemia. This educational intervention was designed to positively affect clinician practice patterns by providing learners with strategies for translating and applying new information about hypoglycemia into daily clinical practice.

Start and End Date 10/5/22-10/31/23

EXECUTIVE SUMMARY

Audience reached
• 9,754 participants (390% of grant target); 6,909

• 79% are practicing nurse practitioners
• Top 3 NP certifications: 72% Family medicine, 12% Adult/Gerontology, 6% Acute Care
• Top 3 practice settings: 39% Primary care, 5% Urgent care, 4% Geriatrics
• Each NP learner has written an average of 5 glucagon prescriptions in the past year
• NP learners see an average of 17 patients each week who are treated with agents such as insulin or secretagogues that place them at higher risk of hypoglycemia

OVERALL MEAN PERCENT CORRECT PRE TO POST FOR 6 MULTIPLE-CHOICE QUESTIONS

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre (%)</th>
<th>Post (%)</th>
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<tbody>
<tr>
<td>Which one of the following characteristics places a patient at higher risk for hypoglycemia?</td>
<td>59%</td>
<td>76%</td>
</tr>
<tr>
<td>Which one of the following is a hemodynamic response to hypoglycemia?</td>
<td></td>
<td></td>
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<tr>
<td>Which one of the following is NOT a route of administration used for glucagon?</td>
<td></td>
<td></td>
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<td>Please identify one key takeaway from this activity that you plan to implement into your practice</td>
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<tr>
<td>Rate your confidence in your ability to discuss hypoglycemia with your patients who have diabetes.</td>
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OUTCOME METHODS

Educational outcomes data assessing learners’ knowledge, confidence and competence were obtained pre/post-activity.

• Total records = 6,899 (pre/post/eval).
• Data were aggregated in Excel.
• Tests used to identify statistically significant differences pre to post: Chi-square for multiple knowledge/case questions.
• A paired analysis of pre/post results was conducted.
• Demographics (pre) and evaluation (post) results shown here use descriptive statistics.

EXECUTIVE SUMMARY

PRE-POST KNOWLEDGE & COMPETENCE

Which one of the following characteristics places a patient at higher risk for hypoglycemia?

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Pre (%)</th>
<th>Post (%)</th>
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<tbody>
<tr>
<td>Presence of renal impairment</td>
<td>56%</td>
<td>83%</td>
</tr>
<tr>
<td>Presence of acute illness</td>
<td>33%</td>
<td>48%</td>
</tr>
<tr>
<td>Presence of hypothyroidism</td>
<td>32%</td>
<td>35%</td>
</tr>
<tr>
<td>Presence of renal impairment and hypothyroidism</td>
<td>20%</td>
<td>24%</td>
</tr>
</tbody>
</table>

POSSIBLY EFFECTIVE STRATEGIES TO PREVENT HYPOGLYCEMIA

- Incorporate population-specific approaches to hypoglycemia
- Include diversity in program and case studies.
- Utilize a case-based approach to deliver the program content.
- Discuss individualized approaches to prevention of hypoglycemia.
- Incorporate the utilization of technology, such as a CGM, to identify hypoglycemia and glucose trends, particularly when initiating/optimizing insulin therapy.

PRE TO POST CONFIDENCE CHANGE

FUTURE INSIGHTS

- Teach practical approaches to hypoglycemia prevention, preparation and planning (giving knowledge into practice).
- Incorporate population-specific approaches to hypoglycemia.
- Include diversity in program and case studies.
- Utilize a case-based approach to deliver the program content.
- Discuss individualized approaches to prevention of hypoglycemia.
- Incorporate the utilization of technology, such as a CGM, to identify hypoglycemia and glucose trends, particularly when initiating/optimizing insulin therapy.

ACKNOWLEDGEMENT

Supported by an independent educational grant from Xeris Pharmaceuticals, Inc.