Background

- Local Anesthetic Systemic Toxicity (LAST) is a rare yet life-threatening event that can occur in any setting where local anesthetic is used.
  - LAST occurs in 2-2.8 per 10,000 patients who receive a nerve block.
- Sequelea include altered mental status, seizure, hypotension, dysrhythmia, acute respiratory failure, and cardiac arrest.
  - The toxicity is fatal in 0.4% of patients.
- Our team discovered that nurses working in the pre- and post-anesthesia units of an outpatient surgery center had insufficient knowledge of LAST recognition and management.
  - Nurses scored an average of 4.76 points on a 7-point, 5-question LAST quiz (see below).
- Low-frequency, high-risk procedures require additional training to hardwire knowledge and ensure competency.

Educational Intervention

- Nurse leaders developed a multi-modal educational intervention based on current best evidence for managing LAST.
  - An in-service led by the perianesthesia nursing education coordinator, 45 minutes long.
  - Hands-on simulation.
  - In the moment supportive tools: Badge buddies, LAST kit.

Data Collection and Analysis

- Nurses’ knowledge was reassessed at 1, 3, and 9 months following the intervention. Independent t-test was used to determine differences.

Outcomes

- Fifty-five nurses from outpatient perianesthesia units participated in the survey and simulations.
- Results showed an increased score from 4.76 to 6.34 one month following education interventions with sustained improvement through the 9 month time period. (9 month score=6.19, t=2.99, p=0.002)
- The Medication Use Policy Committee developed a standardized lipid order set for the health system.
- A computer-based learning module with on-demand access was created for the entire health system.
- A Clinical Practice Guideline for the health system was developed and aligned with national standards to standardize care during a LAST event.

Sustained Improvement in Quiz Scores

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<th>Baseline</th>
<th>1-month</th>
<th>3-month</th>
<th>9-month</th>
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<tr>
<td>N</td>
<td>33</td>
<td>26</td>
<td>25</td>
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<tr>
<td>Score</td>
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<td>6.34</td>
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Conclusion

A multimodal approach to education, including simulation, may improve sustained knowledge of recognition and management of a LAST event.

Acknowledgments: Brittany Delling, DO; Ashley Shilling, MD, UVA Nursing Research Office
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