Guidelines Enhance Anesthetic Management of Heart Failure Patients During ICD Implant

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Background & Purpose

- Implantable cardioverter defibrillators (ICDs) are indicated in heart failure with reduced ejection fraction (HFrEF) to limit cardiac arrest
- The severity of disease complicates patient stability and warrants meticulous anesthetic care during ICD implant surgery1,2,3
- No published clinical practice guidelines (CPGs) describe anesthetic management techniques for HFrEF patients during ICD implant

The purpose of this evidence-based, quality improvement project was to develop, implement, and evaluate the effects of CPGs on anesthesiology provider knowledge and self-efficacy when anesthetizing HFrEF patients for ICD implant.

Methods

Design: A dependent pre- and post-test QI project
Setting: Electrophysiologym labs of an urban tertiary care facility in the Pacific Northwest known for its heart failure clinic
Sample: Convenience sample of MD and CRNA anesthesiology providers working between Sept. 2022 to Dec. 2022.
Procedure: Application of web-based CPGs to anesthesiology care
Measures: Knowledge Questionnaire, Generalized Self-Efficacy Scale

Results

Sample Demographics N = 26

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<thead>
<tr>
<th>Knowledge Questionnaire</th>
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<tbody>
<tr>
<td>69.2% no cardiotherapy training</td>
<td>0.012</td>
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Wilcoxon Ranks by Outcome Measure

Knowledge

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<th>Score</th>
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<tbody>
<tr>
<td>4</td>
<td>7</td>
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<tr>
<td>5</td>
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<td>1</td>
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Self Efficacy

<table>
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<th>Score</th>
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Discussion

- Increased anesthesia provider knowledge through CPG use furthers aims to utilize CPGs to establish a threshold of safety and fast-track the translation of research to practice.
- Significantly improved anesthesia provider self-efficacy advances the goal of using CPGs to manage precursors before they develop into problems.

Limitations:
- Small sample size
- All learning wall self-directed, no in-person instruction
- Sampling bias due to recruitment of familiar providers

Adding CPGs to the pool of resources available to anesthesia providers is feasible and effective in the clinical setting.

Conclusions

- Institutional expertise was combined with nationally-recognized recommendations to create a set of custom guidelines that evoked meaningful improvements in the knowledge and operational confidence of anesthesia providers while caring for the growing HFrEF population.
- Anesthesia providers should be included in creating customized CPGs for various areas of clinical practice.
- This project supports the provision of customized CPGs to augment anesthesia provider knowledge and self-efficacy in remote and under-supported settings.

Acknowledgements & References

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