SAVING THE BEST FOR LAST: IDENTIFYING AND INTERVENING IN LOCAL ANESTHETIC TOXICITY EMERGENCY

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Background Information: Local anesthetic systemic toxicity (LAST) is a rare, but serious complication to local anesthesia that can be potentially fatal. Prompt recognition and intervention is critical for the best patient outcome, however, there is a lack of ability to recognize the signs and symptoms of LAST, along with a lack of knowledge of interventions in the post anesthesia care unit (PACU).

Objectives of Project: Clinical nurses will be able to: identify the procedure and clinical guidelines for LAST management, recognize 3 signs of LAST, locate supplies used during a LAST event, and calculate the dosage of intra-lipid emulsion (ILE) therapy for the reversal of LAST.

Process of Implementation: Institutional guidelines are consistent with the American Society of Regional Anesthesia and Pain Medicine's (ASRA) algorithm for the treatment of LAST. A pre-education survey was distributed to 25 RNs to identify educational barriers. An educational in-service was implemented to all RNs to identify signs/symptoms of LAST, teach interventions, and explain where to locate LAST emergency kit. A post-education survey was then distributed to see if their knowledge had improved. Pre-implementation, 36% of PACU RNs had the knowledge to care for patient during LAST, 24% knew procedure and clinical guidelines, 40% were able to identify 3 symptoms, 48% were able to locate LAST emergency kit, 16% knew how to calculate/verify dose of lipids, and 96% thought that education would improve their understanding. Post-implementation, 94% of PACU RNs had the knowledge to care for patient during LAST, 97% knew procedure and clinical guidelines, 94% were able to identify 3 symptoms, 94% were able to locate LAST emergency kit, 84% knew how to calculate/verify dose of lipids, and 100% thought that education provided improved their understanding.

Statement of Successful Practice: The pre-education survey established that there was an admitted lack of knowledge by nursing staff on LAST emergencies. After education, there was a significant increase of knowledge in nursing practice and interventions.

Implications for Advancing the Practice of Peri-Anesthesia Nursing: Management of LAST complications is imperative for safe and efficient PACU nursing care. Annual competency assessment and mock drills will be implemented to keep up skills. The LAST competency is also being added into the orientation pathway for new hires.

PEDIATRIC PERIOPERATIVE EDUCATION: ARE WE DOING ENOUGH AT GEISINGER HEALTH SYSTEM TO PREPARE OUR PEDIATRIC PATIENTS AND THEIR FAMILIES FOR SURGERY?

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Introduction: This EBP poster explores pediatric and family anxiety in association with surgical procedures. Review and reflection of current practices at Geisinger Health System compared to top performing children's hospitals in the U.S. Concluding with best practice recommendations for practice change.

Identification of the problem: Multiple levels of anxiety are associated with pediatric exposure in the perioperative setting. Perioperative anxiety can negatively impact induction, postoperative recovery as well as create transient and long-term detrimental effects on the child's health and development.

EBP Question/Purpose: The purpose of the evidenced-based review was to explore current perioperative anxiety reduction practices within Geisinger Health System in comparison with the top ten children's hospital as reported by U.S. News & World Report.

Methods/Evidence: A systematic comparison of current standard practices at Geisinger Health System and the top ten children's hospitals were reviewed in detail. Meta-analysis of scholarly journals concerning diversional techniques for pediatric patients in the peri-anesthesia setting were also utilized. The Johns Hopkins Model of Evidence-based Practice was utilized to evaluate the literature. The comparative studies levels II, III, IV, and V were included to support the findings

Significance of Findings/Outcomes: Evidence and comparison suggest significant gaps within Geisinger Health System's perioperative process. Throughout this review, conversations were already underway on how to improve the pediatric pre-surgical stay. Interdisciplinary and patient experience peers were amongst this group at Geisinger Health System for potential improvements

Implications for perianesthesia nurses and future research: This project reflects a vital need for continuous improvements for a positive pediatric patient experience within Geisinger Health System. Additions to Geisinger's current practices that happened during this review included: usage of iPads, the web-based publication "Preparing your Child for Surgery," Autism pathway project initiative, and planning process for motorized child-driven cars to be used from the preoperative area into the operating room. Looking to the future, Geisinger would benefit by aiming education and care to both parent and child. Education is key to patient-centered, safe care.

Note: All abstracts are printed as received from the authors.

Educational improvements would include updated graphics, imaging and up-to-date surgical education to the Geisinger.org website. Distributing interactive, developmentally appropriate pamphlets, handouts, and access to smartphone apps to families prior to scheduled surgery prove to be beneficial.

AN EVIDENCED BASED PRACTICE APPROACH TO MALIGNANT HYPERTHERMIA (MH) EMERGENCY RESPONSE: A MULTIDISCIPLINARY QUALITY IMPROVEMENT INITIATIVE

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Introduction: Malignant Hyperthermia (MH) is a rare medical emergency that may occur after receiving anesthetics. The Malignant Hyperthermia Association of the United States advises all medical facilities to be prepared for prompt diagnosis and immediate treatment response, in order to prevent mortality and reduce morbidity.

Identification of the problem: Rush University Medical Center nursing care teams that work in areas prone to high risk /low volume MH events have not received consistent annual training regarding MH.

Purpose of the Study: Using a phased approach, to implement a sustainable, multidisciplinary, evidence based practice annual training program that increases staff knowledge, in order to appropriately respond to MH event.

Methods: Baseline knowledge of MH was obtained with a pre-survey developed by the investigator. Education in-services (Phase 1: FY 17) and online learning module (Phase 2:FY18) included the same content (MH overview, resources, and policy and procedure review) and were provided to nursing staff. A post-survey was given to staff immediately after all training. Pre and post surveys contained five questions and the same content.

Results: Phase 1 (n=136) prior to the education implementation, 20% of the staff met the survey passing score. Immediately post-education-100% received passing score. Long-term retention of knowledge decreased at 4 months with 48% receiving a passing score.

Phase 2 (n=437) pre-education 34.8% of participants achieved a passing score and 81.4% of participants achieved a passing score post online education.

Discussion/Conclusion: Live in-service (Phase 1) provided immediate, short-term improvement to MH crisis knowledge but long term retention of this knowledge was unsatisfactory. Online education delivery method (Phase2) was less effective at improving MH crisis knowledge. Due to the ineffectiveness of online training, long term follow-up surveys were not performed.

Implications for perianesthesia nurses and future research: Further study is needed to determine the best approach to MH education. Phase 3 of this project will include: mandatory annual, hands-on drill training (utilizing a high fidel-

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ity simulator) with pre and post educational assessments. All members of the multidisciplinary team will partake in this training.

AN EXPLORATION OF POSTOPERATIVE DELIRIUM AND UNPLANNED PERIOPERATIVE HYPOTHERMIA IN SURGICAL PATIENTS

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Introduction: Postoperative delirium (POD) may impact 72% of surgical patients and has been associated with increased hospital length of stay, one-month mortality, post-acute discharge to long-term care, and a higher probability of developing dementia. These adverse events contribute to significant increases in healthcare costs.

Identification of the problem: Unplanned perioperative hypothermia (UPH) has been mentioned as a trigger for POD, but the relationship has been inadequately explored.

Purpose of the Study: The purpose of this study was to investigate associations between UPH and the incidence of POD among adults undergoing non-cardiac surgery.

Methodology: A retrospective, exploratory study using practice-based research methodologies was conducted. Data were electronically abstracted from a purposive convenience sample of medical records of all adult patients undergoing non-cardiac surgery from January 2014 to June 2017. Logistic regression predicting probability of POD conditional on UPH and other known and suspected associated variables was conducted. The analyzed dataset included 22,548 surgeries, of which 9% experienced documented POD.

Results: Mean age was 63.23 ($\pm$ 15.37); mean number of hypothermic minutes was 42.41 ($\pm$ 55.19). 44.7% of the sample was male and 91.4% received general anesthesia. Logistic regression indicated that a patient's ASA class was the strongest predictor of POD ($X^2 = 1207.11$, $df = 4$, inclusive of all ASA class terms). Of particular interest, a significant relationship between UPH and POD ($X^2 = 54.94$, $df = 4$, inclusive of all UPH terms) and a complex relationship among UPH, patient age, ASA class, and POD was also found.

Discussion: Surprisingly, UPH was found to be protective to the development of POD in the oldest of old. UPH, however, was a contributing factor to POD in the younger patient, particularly sicker patients, although assessment for and documentation of POD was missing in many younger patients.

Conclusion: There is a relationship between UPH and POD. Notably, there is also a complex relationship in the non-cardiac surgery population among UPH, age, ASA class, and POD.

Implications for perianesthesia nurses and future research: This study builds the science of perianesthesia nursing by identifying the relationship between UPH and POD. Further study is indicated to explore the physiology