Identifying Barriers and Facilitators to a Successful Student Registered Nurse Anesthetist's Clinical Education
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PROBLEM INTRODUCTION
The more than 2,400 student registered nurse anesthetists (SRNAs) that graduate annually experience unique challenges in their clinical training including:

Role Transition
- Most SRNAs were in leadership roles and struggle with the transition from preceptor to preceptee, especially as adult learners.

Communication Barriers
- The lack of formal CRNA preceptor training combined with ill receptivity to preceptor feedback by SRNAs can be a source of stress negatively affecting learning.

Eliciting and Accepting Feedback
- The SRNA should be empowered with the skills necessary to seek out, accept, and utilize feedback, even in less-than-ideal scenarios. These skills are not inherent, nor do they receive heavy focus within the traditional nurse anesthesia curriculum.

PROJECT METHODS
- Recognize that SRNAs face unique challenges in the clinical realm related to eliciting and utilizing feedback.
- Approval by the SIUE Nurse Anesthesia Educational Program as stakeholder and SIUE IRB for a quality improvement project.
- Review current literature related to the clinical training of SRNAs and other healthcare professionals.
- Create and disseminate an evidence-based Qualtrics survey identifying the perceived barriers and facilitators to clinical education as reported by SRNAs nationwide and within SIUE.

EVALUATION
Free Text Responses and Recommendations
- A thorough clinical site orientation
- Formal preceptor training for CRNAs
- Developing a strong emotional intelligence for SRNAs
- Periodic program director follow-ups/check-ins
- Introductory and reflection discussions with preceptors
- Appropriate level of autonomy for clinical education

LITERATURE REVIEW

Literature Search
Databases: Cumulative Index of Nursing and Allied Health Literature (CINAHL), MEDLINE Complete, Google Scholar, ERIC, and Pubmed.

Findings
- A search of current literature yielded 34 articles, primarily surveys and literature reviews, regarding SRNA and medical professional trainees' positive attributes and barriers to clinical education.
- Barriers: Inconsistent feedback and evaluation, lack of interest from the preceptor, poor preceptor teaching skills, limited access to preceptors, inadequate or unprofessional communication, and instances of intimidation or harassment.
- Facilitators: Ability to seek and receive real time feedback, forming an educational alliance with preceptors, embracing vulnerability, engage in self reflection, obtain a high level of emotional intelligence.

IMPACT ON PRACTICE
- Limited literature exists highlighting the barriers and facilitators specific to the SRNA's clinical education.
- Survey data allows for more detailed indicators of what the SRNA perceives during their clinical training.
- Many reported barriers and facilitators were related to the psychosocial aspects of education and feedback.
- Existing research among other medical specialties supports the utility of implementing pre-clinical seminars to empower the learner with tools to elicit feedback and promote communication.
- A pre-clinical seminar may be targeted at the perceived issues identified specially by SRNAs in the survey.

CONCLUSIONS
- There has been little attempt by academic programs to provide students with skills for seeking and handling clinical performance feedback.
- Survey results combined with evidence from the literature may be used to create a formal educational program for SRNAs to facilitate positive clinical experiences and effective preceptor feedback.
- The development of the educational program could be an aim for future scholarship and translate evidence on this topic into practice, closing the knowledge gap by focusing on methods that empower SRNAs to actively participate in their clinical education.

References
The Effectiveness of Using the Anatomage Table as a Learning Adjunct to Peripheral Nerve Blocks Among Student Registered Nurse Anesthetists
Paige Dickey, BSN, SRNA & Melissa Gerlach, BSN, SRNA
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PROBLEM INTRODUCTION

- Student Registered Nurse Anesthetists (SRNAs) are clinically trained to perform invasive procedures including (Corvetto et al., 2015):
  - Neuraxial Anesthesia
  - Tracheal Intubation
  - Peripheral Nerve Blocks (PNBs)
  - Central and Arterial Line Placement
- Cadaver labs have historically been used to teach essential anatomy principles related to these procedures, however they are costly to maintain and are not feasible for some institutions (Anatomage, 2018).
- Advanced technology resources, such as the Anatomage Table (AT), have increased student access to these educational opportunities (Al-Elq, 2010).
- Supplementing learning with high-fidelity simulation through the AT improves patient safety and provider competency (Al-Elq, 2010).

LITERATURE REVIEW

- Increasing popularity toward opioid free/sparing anesthesia (Soffin & Wu, 2018).
- Main barriers reported by CRNAs = lack of experience with alternative techniques such as PNBs (Vallesco et al., 2019).
- Five of the most widely used PNBs in anesthesia include:
  - Intercostal Block (IBB)
  - Axillary Block
  - Transabdominus Plane (TAP) Block
  - Adductor Canal Block
  - Peripheral Sciatic Block (PSB) (Steer et al., 2015; Hernandez et al., 2016).
- PNB benefits for special populations:
  - Clinically ill/high-risk patients for hemodynamic instability during general anesthesia (Arjun et al., 2020)
  - Rescue blocks for acute injuries such as falls/hip fractures (Scurrah et al., 2017).
- Opioid-free/sparing anesthesia (Soffin & Wu, 2018).
- Virtual simulation, including use of the AT, leads to improved test scores and technical skills among medical students (Frendo et al., 2020).
- Adequate PNBs led to lower readmission rates and decreased morbidity and mortality (Joshi et al., 2016).

PROJECT METHODS

- Second-year SRNAs attended a lab in which they completed a guided lesson with the AT, locating key landmarks for each type of block outlined in Figure 1.
- They were then given the opportunity to utilize what they learned at the AT with hands-on experience with the ultrasound.

EVALUATION

- 29 SRNAs completed pre (Table 1) and post (Table 2) workshop surveys consisting of 7 Likert scale questions to assess confidence and self-efficacy in their ability to perform PNBs in the clinical setting.

IMPACT ON PRACTICE

- Successful peripheral nerve blocks administered by well-educated providers improves patient safety, reduces mortality and morbidity, and decreases hospital readmissions (Joshi et al., 2016).
- As anesthesia providers, we are dedicated to patient safety, which is why it is so imperative to use our resources, such as the AT, in order to optimize our learning and skills of the techniques pertaining to anesthesia throughout our educational program.

CONCLUSIONS

- Overall, student confidence in performing a PNB in the clinical setting rose 58.7% after attending the AT workshop.
- Incorporation of the AT in an ultrasound guided PNB lab improved SRNA knowledge of the anatomy associated with each block.
- The lab fulfilled the needs of SRNAs by filling knowledge gaps and exposing them to regional techniques earlier on in their clinical training.
- A self-guided lab was created for future SRNAs to continue to utilize the AT and learn and understand the anatomy associated with PNBs at their own pace.

REFERENCES


References


Intrathecal & Epidural Dexmedetomidine (Precedex) for Obstetric Patients

Addison Hohner, BSN, SRNA & Sarah Tobias, BSN, SRNA
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PROBLEM INTRODUCTION

Neuraxial opioids in the obstetrical population provide analgesia for both labor and cesarean deliveries (Armstrong & Fernando, 2016).

Neuraxial opioids are associated with negative side effects such as pruritus, nausea, vomiting and respiratory depression (Armstrong & Fernando, 2016).

Perioperative opioid use has been linked to an increased risk for opioid abuse and addiction with potentially fatal side effects (Falace, 2020).

The negative side effects associated with opioids warrant a search for alternative adjunct medications.

Dexmedetomidine, an alpha-2 agonist, has potent analgesic properties, lowering opioid requirements, while decreasing anxiety and postoperative nausea and vomiting (Bohringer et al., 2020).

Multimodal pain management utilizing opioid free or sparing anesthesia techniques have improved surgical outcomes (Bouyse, Pappas, & Evans, 2018).

Dexmedetomidine has potential use as primary pain management therapy when providing opioid free or sparing anesthesia technique.

PROJECT METHODS

A convenience sample was obtained from a regional medical center in a suburban area in the midwestern United States, consisting of certified registered nurse anesthetists and physician anesthesiologists of the pilot hospital.

Assess baseline use and understanding of dexmedetomidine in neuraxial anesthesia for obstetric patients via electronic anonymous questionnaire.

Present the current literature on dexmedetomidine use in obstetric patients via PowerPoint presentation.

Reassess participants' knowledge and likelihood to adopt the use of dexmedetomidine in neuraxial anesthetics.

IMPACT ON PRACTICE

Improve patient satisfaction

Promote research within the United States on intrathecal dexmedetomidine

Increase provider knowledge of current literature

Boost provider confidence with use of dexmedetomidine as adjunct

Create potential for standardized dosing protocol

CONCLUSIONS

The evidence presented in this literature review supports dexmedetomidine holds promising implications for OSA and OHA practice for OB patients.

Providers demonstrated an increased willingness to use dexmedetomidine as a neuraxial adjunct after receiving an evidenced based review of risks, benefits and optimal dosing recommendations.

Further research encompassing diverse patient populations and with varying amounts of local anesthetic are needed to develop best practice dosing for dexmedetomidine as a neuraxial adjunct.

REFERENCES

Dexametomidine produces analgesia, speeds block onset and duration, and can reduce shivering without opioid side effects

Optimal dosing: spinal 5mcg, epidural 0.5mcg/ml in infusion bag

Most common side effects: Hypotension and Bradycardia; correlate with doses of 7.5mcg or higher

Keywords: obstetrics, neuraxial dexmedetomidine, intrathecal dexmedetomidine, epidural dexmedetomidine, opioid free or sparing anesthesia

LITERATURE REVIEW

• Databases: EBSCO, MEDLINE, Cochrane, CINHAL, and Academic Search Complete databases

• Keywords: obstetrics, neuraxial dexmedetomidine, intrathecal dexmedetomidine, epidural dexmedetomidine, opioid free or sparing anesthesia

50 articles resulted; 23 articles met inclusion criteria

Participant demographics

Pre-presentation survey n=10; Post n = 8

Attrition: 2 participants called away

Characteristics: 

Number of Years in Job

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Frequency of OB Practice

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<td>6-12 weeks/year</td>
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<td>12-24 weeks/year</td>
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<td>&gt;24 weeks/year</td>
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<td>I only work OB</td>
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EVALUATION

Impact

Boost provider confidence with use of dexmedetomidine as adjunct

Create potential for standardized dosing protocol

Improve patient satisfaction

Promote research within the United States on intrathecal dexmedetomidine

Increase provider knowledge of current literature

Evans, 2018).

Dexametomidine, an alpha-2 agonist, has potent analgesic properties, lowering opioid requirements, while decreasing anxiety and postoperative nausea and vomiting (Bohringer et al., 2020).

- Bradycardia; correlate with doses of 7.5mcg or higher
- Hypotension and shivering without opioid

The negative side effects associated with opioids warrant a search for alternative adjunct medications.
Development of a Protocol to Manage Postdural Puncture Headache

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PROBLEM INTRODUCTION

In 2019, over 3.7 million births occurred in the United States, in Illinois, over 140,000 births occurred (US DHHS, 2020)

Accidental dural puncture (ADP) with epidural placement carries of 0.5-4% in the United States (ASA, 2020)

After ADP, 45.85% of patients will develop a postdural puncture headache (PDPH) (ASA, 2020)

Symptoms of PDPH may range from mild to debilitating and develop within five days of ADP (Valia & Prozesky, 2016)

Numerous provider-specific techniques and non-standardized treatment options yield a variety of patient outcomes

PROJECT METHODS

Project Aim: To develop and introduce a standardized evidence-based treatment protocol for PDPH

A non-experimental, convenience sample, survey design was utilized

Review of current literature and evidence-based treatment options

Specialized algorithm development for pilot facility presented after educational PowerPoint presentation

Anonymous ten-question pre and post presentation survey administered for evaluation

IMPACT ON PRACTICE

• Prior to project implementation, the host facility lacked a standardized approach to PDPH treatment and anesthesia providers employed a variety of different treatment modalities for PDPH patients.

• Post presentation survey results demonstrated improved correct response rate

• A standardized, evidence-based protocol will provide anesthesia providers a pathway of preventative therapies, an algorithm for symptom management, and treatment options should a PDPH occur.

LITERATURE REVIEW

Conservative treatment

• Encourage bedrest, PO or IV hydration, abdominal binder

• Redose Q4hr

• Acetaminophen & NSAIDs

• Sumatriptan, 25mg IV immediately following delivery of infant

• Gabapentin, 200-300mg PO after delivery, followed by 100-300mg PO Q12h

• Neostigmine 20mcg/kg

• Neuraxial blockade

• Bupivacaine, 0.25%

• Dexamethasone with 4mg bupivacaine

• Lidocaine: OR mix (1:1 or 1:3, lidocaine: bupivacaine) with 4mg dexamethasone per nerve

• Total volume 1.5-3ml/nerve

• Intrathecal opioids

• Butalbital: 325mg

• Acetaminophen, 40mg

• Caffeine

• Redose Q4hr

ALGORITHM FOR PDPH MANAGEMENT

EVALUATION

• The evaluation survey consisted of demographic information, multiple-choice, and true or false questions.

• Convenience sample included nine anesthesia providers (n=9), with anywhere from 0 - 20 years of professional experience

• Results of the study indicated the educational presentation increased provider knowledge of PDPH pathophysiology, symptoms, management, and treatment.

• A general question and answer period was also permitted to the participants following the presentation.

CONCLUSIONS

This project provided a standardized readily accessible protocol with a myriad of treatment options for PDPH

Applicable for parturients through the postpartum period

Algorithm provides uniform approach for patients suffering from PDPH

The inclusion of this protocol can have a significant positive impact on patient outcomes and anesthesia practice

REFERENCES

1=See breastfeeding recommendations (Table 1)
2=Pharmacological and regional block interventions may be performed prior to or after 24hrs
3=EBP efficacy improves if performed after a minimum of 24hrs with greatest efficacy rates after 48hrs from ADP
General Anesthesia (GA) -
• GA for hip arthroplasty may lead to an enhanced incidence of overall death, respiratory failure, and ICU admission (Chu et al., 2013).
• Enhanced risk for overall complications and nonhome discharge when GA is utilized (Warren et al., 2020).
• Can be associated with difficult airway management, dental damage, aspiration, and allergic drug reaction.

Neuraxial Anesthesia (NA) –
• Statistically decreased in-hospital mortality (p= 0.004) and shorter LOS (p=0.0001) for NA was demonstrated (Van Waerbeke et al., 2017).
• Reduced zero to 30-day mortality for NA compared to GA in patients with intermediate to high cardiac risk (Guay et al., 2016).
• May reduce the risk for postoperative cognitive dysfunction (Edipoglu & Celik, 2019).
• Reduced LOS and overall cost was found (Chakladar & White, 2010).
• Blunts the body’s sympathetic stress response to surgery and may offer superior pain control, supporting Enhanced Recovery After Surgery (ERAS) protocols (Oseka & Pecka, 2018).
• NA took no longer than GA to perform and demonstrated shorter surgical duration periods by up to 11 minutes (Johnson et al., 2016).
• NA & peripheral nerve blockade (PNB) should be utilized in a multimodal approach to prevent chronic post-surgical pain development (Fergoso et al., 2019).

Anesthesia providers should strategize nalgesia plans with the goal of reducing opioid consumption when feasible.
• Knowledgeable anesthesia providers should strive to provide the more superior anesthetic choice for this patient population.
• ICAROS recommends NA as the supreme anesthetic technique for total hip and knee arthroplasty (Memtsoudis et al., 2019).
• NYSORA & ASRA recommend NA and PNB for total joint arthroplasty.

Despite an initial plan to pursue total NA where applicable, reluctance towards the change process was evident concerning surgeon buy-in.
• Another implementation barrier was due to the small sample size and lack of a larger pool for verifiable data.
• Limited size and power of the study as this critical access hospital does not perform total joint procedures on a daily basis.
• Overall, the change process was deemed relevant for the institution, which will continue pushing for neuraxial anesthesia for total joint arthroplasty.
**Problem Introduction**

- Labor epidural analgesia is the most common method used to control pain associated with labor and vaginal delivery in the United States (Borne, 2015; Onuoha, 2017).
- Accidental dural puncture (ADP) is a potential complication associated with epidural placement (Rajagopalan et al., 2019; Peralta et al., 2015; Yul et al., 2019).
- Continuous spinal analgesia (CSA) is not a common technique used in managing labor pain.
- This lack of experience can limit options for the management of labor pain after difficult epidural placement resulting in ADP (Prada et al., 2019; Velickovic et al., 2017).
- A tertiary care medical facility in central Illinois lacks an evidenced-based protocol and educational resources for the management of ADP with CSA after failed epidural catheter placement.

**Literature Review**

- The risk for ADP was related to increasing depth to the epidural space, which increased by about 19% for every 1 cm of tissue the needle must penetrate (Hollister et al., 2012).
- 3 independent risk factors correlated with difficult epidural placement: difficult intervertebral space palpation, spinal deformity, and inability to flex the back (Guglielminotti et al., 2013).
- Advantages of using CSA in laboring patients, such as the 10% reduced risk of a second ADP, easy catheter insertion, the establishment of rapid analgesia, reduction of post-dural puncture headache (PDPH), and epidural patch requirement (Heesen et al., 2020; Izquierdo et al., 2019; Moaveni, 2020).
- Medication errors are a concern during CSA management, epidural dose into the intrathecal space can produce high spinal anesthesia resulting in hypotension and respiratory collapse requiring mechanical ventilation (Cohn et al., 2016; Delhaas & Huygen, 2019).

**Project Methods**

- Development of ADP management with intrathecal catheter protocol.
- Onsite and online educational presentation to anesthesia providers on protocol utilization.
- Laminated reference tool were issued to anesthesia providers and attached to all epidural carts.

**Impact on Practice**

- Evidence recommends placement of a continuous spinal catheter over re-siting an epidural catheter after ADP in certain types of parturients (See Box 1 & 2).
- The cognitive aid developed, has the potential to reduce anesthesia provider hesitancy in using CSA and improve patient satisfaction.

**Conclusions**

- A standardized reference tool is now available on all epidural carts for continuous catheter administration following ADP in laboring patients.
- Increased provider anesthesia arsenal and knowledge of CSA technique.
Assessment of Gastric Content with Point of Care Ultrasound

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PROBLEM INTRODUCTION

➢ Pulmonary aspiration of gastric content is physiologically deleterious and potentially a fatal complication of anesthesia (Neilipovitz and Crosby, 2007).

➢ Financially burdensome (Society of Critical Care Medicine, n.d.).

➢ Risk factors for aspiration: full stomach, diabetes, chronic kidney disease, obesity, pregnancy, gastroparesis, surgical procedure type, and certain medications (Nason, 2016) & (Sharma, Jacob, Mahankali, and Ravindra, 2018).

➢ Point of care ultrasound (POCUS) can assess gastric content (Perlas et al., 2011).

➢ Community hospital in Jacksonville, Illinois requested research on gastric POCUS and airway management implications.

PROJECT METHODS

A fifteen-minute educational PowerPoint presentation and a hands-on tutorial was developed and provided to the anesthesia providers.

The anesthesia department’s ultrasound was used with the author as a live model to provide the anesthesia providers an opportunity to observe and practice gastric scanning.

A baseline survey was obtained prior to the educational intervention to assess the knowledge base and opinions regarding POCUS.

LITERATURE REVIEW

➢ Perlas Scale – Antral Grades 0, 1, and 2 (Perlas et al., 2011).

➢ Rapid – 3 minutes and 35 seconds per scan (Cieslak et al., 2020).

➢ Easily learnable – proficiency within 33 instructed scans (Arzola et al., 2013).

➢ Full stomach identified in 3.5-4.5% of all fasted patients presenting for elective surgery. (Perlas et al., 2011) & (Van de Putte et al., 2017).

➢ Full stomach identified in 5.7% of fasted obese patients presenting for elective surgery (Van de Putte and Perlas, 2014).

➢ Full stomach identified in 56% of emergency patients (Bouvet et al. 2017).

➢ Routine scanning not recommended. Scan when indicated (Van de Putte et al., 2017).

➢ Changing the paradigm – empty stomach discovered in 26.5% of pediatric patients presenting for pyloromyotomy. 61.8% following blind oro gastric succioning (Gagey et al., 2016).

IMPACT ON PRACTICE

➢ Gastric POCUS can guide airway management decision making.


➢ Patient Safety – Aspiration events may be reduced.

➢ Patient satisfaction may be improved.

➢ Paradigm Shifting – Rethinking traditional guidelines and management approaches.

CONCLUSIONS

➢ Gastric POCUS provides accurate and valuable information.

➢ Gastric POCUS should be embraced by all anesthesia departments.

➢ Only scan when indicated. Routine scanning not recommended.

➢ Exercise Prudent Judgement – courts may continue to defer to ASA preoperative fasting guidelines.

The Future is POCUS!

Survey Results

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<td>Pre Test</td>
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<td>3.5%</td>
</tr>
<tr>
<td>Post Test</td>
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All providers found the PowerPoint and hands-on tutorial informative.

Limitation – small practice with low turnout.

The providers look forward to incorporating gastric POCUS into their practice.

SOUTHERN ILLINOIS UNIVERSITY
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Perioperative Tube Feeding Guidelines for the Pediatric Burn Patient

Jordan Swanberg, RN, BSN, CCRN, TNS, SRNA
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PROBLEM INTRODUCTION

• After the human body suffers a burn injury, the nutritional requirements it needs to repair itself are substantial (Cork et al., 2019)
• Unfortunately, for the pediatric burn patient, they not only require consistent nutritional support, but they also need numerous surgeries to fix their injuries (Cork et al., 2019)
• Each time the patient goes to surgery their tube feedings are interrupted for at least 8 hours, leading to impaired wound healing, caloric deficits, weight loss, and increased length of stay (Sunderman et al., 2019)
• This problem demands a consensus on how to properly manage nutritional feedings throughout the entire perioperative time-period

LITERATURE REVIEW

• Burn Injuries are the fifth leading cause of death among pediatric patients (ABA, 2018)
• Type and severity needs to be established
• Stress response after a burn injury can increase metabolic demand by up to 200% (Elliot et al., 2020)
• Nutritional needs must match the patient’s high metabolic demand to prevent unwanted side-effects
• Needs to go as uninterrupted as possible
• This can be achieved if the patient has a confirmed post-pyloric feeding tube
• The literature suggests that letting the tube feedings continuously run throughout the perioperative process places the patient at no greater risk of aspiration (Sunderman et al., 2019)
• Patients that received continuous tube feedings met or exceeded daily nutritional goals in far greater rates when compared to the patient’s who had their tube feeding interrupted (Friedrich et al., 2020)
• This led to better patient outcomes postoperatively

PROJECT METHODS

Problem and need for a quality improvement project was identified at a level 1 trauma center
Extensive Literature Review was conducted
Evidence-Based Protocol was created on how to properly manage tube feeding throughout the perioperative time-period
IRB and project committee approval was obtained prior to the implementation of the quality improvement project
Protocol was implemented to the hospital via a PowerPoint presentation
Anonymous post-presentation survey was obtained to get providers feedback on the protocol

EVALUATION

• A post-presentation survey was presented to the five providers present for the presentation
• The survey consisted of approximately four Likert-style questions and two open-ended questions that helped determine the presentation’s effectiveness
• All participants demonstrated that they would utilize the protocol if hospital policy allowed them to
• One primary barrier to its implementation was getting each department leader to agree with the protocol being used
• Collaboration and cooperation of all members of the care team is necessary for the protocol’s success

IMPACT ON PRACTICE

These patients can meet their nutritional goals even on operative days
Will improve patient outcomes by consistently giving them the nutritional support they require to heal their wounds and decrease their length of stay
Protocol is cost-effective for the hospital and the patient

CONCLUSIONS

• Providers felt the protocol was easy to understand and follow
• Allows for a quick resource on how to optimally manage these patients’ nutritional requirements perioperatively
• Utilization of the protocol will depend on the hospital’s ability to adopt it as policy
• The evidence strongly suggests that patient outcomes are far superior when the feedings can continuously run throughout the perioperative time

Protocol for Perioperative Tube Feeding Management

SOUTHERN ILLINOIS UNIVERSITY
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SCHOOL OF NURSING
ERAS protocols for General Abdominal and Orthopedic Surgery: Preoperative Hydration and Multimodal Management
Kristin Wolff, BSN, SRNA & Sadie Turner, BSN, SRNA
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

Introduction to ERAS:
- Evidence-based, patient-centered, interdisciplinary team-developed protocol (AANA, 2017)
- Utilized to decrease the patient’s stress response to surgery, maintain preoperative physiologic function, and expedite recovery (AANA, 2017)
- Current evidence demonstrates that ERAS protocols lead to better patient outcomes, decrease postoperative complications, facilitate recovery, and allow for earlier discharge (AANA, 2017)
- Studies show that one must employ the preoperative, intraoperative, and postoperative components of the ERAS protocols to achieve maximum benefits (Healthcote et al., 2019)

ERAS Evidence:
- The ERAS protocols for orthopedic and abdominal general surgical cases include consuming a carbohydrate drink 2-3 hours prior to surgery (AANA, 2017)
- The ERAS protocols for orthopedic and abdominal general surgical cases include preoperative fasting guidelines (Gustafsson et al., 2019)
- The ERAS protocols for orthopedic and abdominal general surgical cases include providing a light meal until 6 hours before anesthesia induction (Thiele et al., 2016; Gustafsson et al., 2019)
- Preoperative fasting guidelines are consistent for nearly all surgical procedures (Marcotte et al., 2020)

Project Problem:
- A rural hospital in eastern Illinois, Paris Community Hospital (PCH), utilizes some components of the ERAS protocols, namely the intraoperative portions, but lacks the full utilization
- The purpose is to identify evidence-based ERAS protocols for general abdominal and orthopedic surgery, with emphasis on preoperative hydration, multimodal analgesia, and postoperative multimodal pain management

LITERATURE REVIEW

Preoperative Hydration
- Preoperative fasting guidelines are consistent for nearly all surgical procedures, allowing patients to drink clear liquids (including carbohydrate drinks) until 2 hours before anesthesia induction and eat a light meal until 6 hours before induction (Thiele et al., 2016; Gustafsson et al., 2019)
- The ERAS protocols for orthopedic and abdominal general surgical cases include providing a light meal until 6 hours before anesthesia induction (Thiele et al., 2016; Gustafsson et al., 2019)
- Maintaining a zero-fluid balance is the goal, as fluid excesses and deficits are associated with increased postoperative complications and prolonged hospital stay (Gustafsson et al., 2019)

Multimodal Analgesia
- The American Society of Enhanced Recovery states that multimodal analgesic strategies should include a minimum of two nonopioid analgesics and an epidural or regional nerve block as appropriate (Marcotte et al., 2020)
- Utilizing a multimodal approach, including NSAIDs, acetaminophen, gabapentinoids, corticosteroids, lidocaine, NMDA antagonists, and dexamethasone, can significantly reduce the opioid requirements of the patient (Kaye et al., 2019)
- Utilizing multimodal medications optimizes pain control for the patient, reduces the reliance on opioids, and reduces the length of stay (Frassanito et al., 2020; Feldheiser et al., 2015)