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Journal of Anesthesia and Clinical Research

Short Communication

Anesthesia Role in Well-Defined Team-Based ERAS Obstetrical Care Model: Enhancing the Process for a Healthy Mother and Healthy Newborn

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DESCRIPTION

Team-based care and collaboration enables a transition into an interprofessional collaborative practice that will move away from single-provider care to team-based care and decisions [1-4]. The team-based approach will help ensure that the patient receives quality, effective, and efficient care especially in focused periods of care such as cesarean delivery. There are two team-based aspects to highlight in this Commentary, the guiding 'holistic' team-based principles and secondly, there are the protocol/procedure driven Enhanced Recovery after Surgery Cesarean Delivery (ERAS-CD) principles [5-8].

The obstetrical-anesthesia 'team-based outcome' goal is directed to the best possible result for mother and fetus/neonate using an evidenced-based process, with clear expectations and accountability for each team member, from pre-op to intra-op to post-op and home.

First, the guiding 'holistic' principles of team-based care can be summarized below with the highlighted principles being more focused to the obstetrical-anesthesia collaboration [8]:

- Care always should be patient centered and focus on the health needs of the patient and respects the patient's values, preferences and goals.
- Accountability is one of the best ways to develop trust with a patient's family. Each team member must continue to improve their knowledge and skill base. This is part of their professional goal.

Second, the ERAS are a tool for process management, creating a focused care process. The ERAS Cesarean Delivery Guideline has taken the evidence-based knowledge that has been created from the cesarean delivery research, has evaluated it critically, and has published recommendations for process-directed maternal care for the pre-, intra-, and postoperative cesarean delivery timing in a 3-part guideline with the use of the ERAS Society principles and process for improved surgical quality and safety for obstetric surgical deliveries that promote enhanced recovery for maternal and neonatal outcomes [5-7].

There are two ERAS-CD anesthesia areas, pre-operative warming and post-operative analgesia that are very important to the overall collaborative success for maternal and neonatal physiological stability. There are two specific topics focused in these two ERAS-CD publications:

- Maternal and fetal hypothermia, more preventive compliance is required for a mother and her fetus while undergoing cesarean delivery; a quality improvement reviews [9].
- Cesarean delivery using an ERAS-CD process for nonopioid anesthesia and analgesia drug/medication management [10].

Cesarean delivery is the most common surgical procedure in developed countries [11-13]. Enhanced recovery (quality and safety) in the surgical CD context requires collaboration, consensus, and appropriate clinical prioritization to allow for the identification of the right patient, in the right clinical situation, with the right informed consent, and the right clinical care team and health system.

The best practice suggestions for maternal temperature management during CD indicate their simplicity (forced air warming; IV fluid warming; ambient OR temperature) supported by the strong evidence (GRADE (evidence-high/recommendation- strong); strength- Class I/evidence- Level C) for the use of the three hypothermia recommendations, from ERAS-CD and ERAC protocols, but the implantation/compliance has been limited [6,14]. Additional issues are likely the additional time, space, and cost factors required. Best practice suggestions are provided for an ERAS-CD process.

PREOPERATIVE SEDATION

Preoperative sedation should not be used for scheduled CD because of the potential for detrimental effects on the pregnant patient and neonate. Preoperative administration of gabapentin for postoperative pain management is not routinely recommended. Although, gabapentin may still be considered as part of a multimodal analgesic routine in patients with chronic pain or pain not relieved by standard treatment protocols [5,15,16].

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Received: 24-Feb-2023, Manuscript No. JACR-23-21926; **Editor assigned:** 27-Feb-2022, PreQC No. JACR-23-21926 (PQ); **Reviewed:** 13-Mar-2023, QC No. JACR-23-21926; **Revised:** 20-Mar-2023, Manuscript No. JACR-23-21926 (R); **Published:** 27-Mar-2023, DOI: 10.35248/2155-6148.23.14.1099

Citation: Wilson RD (2023) Anesthesia Role in Well-Defined Team-Based ERAS Obstetrical Care Model: Enhancing the Process for a Healthy Mother and Healthy Newborn. J Anesth Clin Res. 14:1099

INTRAOPERATIVE ANESTHESIA MANAGEMENT

- Neuraxial anesthesia is the preferred method of anesthesia for CD as part of an enhanced recovery protocol [6,14,17,18].
- There is limited role for general anesthesia in scheduled CD. Although, there are certain conditions and emergency scenarios where general anesthesia is the preferred option.

POSTOPERATIVE MULTIMODAL OPIOID-SPARING ANALGESIA

A Multi-Modal Approach to analgesia (MMA) should be initiated. At least two analgesics are recommended, which, unless contraindicated, should include:

- Neuraxial long-acting opioid (preservative free morphine, 50-150 mcg intrathecal or 1 -3 mg epidural).
- Acetaminophen: PO (975 or 1000 mg) or PR before delivery (20 mg/kg or 1300 mg for >70 kg) or IV after delivery (weight >/=50 kg: 1000 mg every 6 h; weight <50 kg: 15 mg/kg every 6 h)
- NSAIDs (ketorolac 15-30 mg IV or naproxen (500 mg PO) after fascial closure).
- If neuraxial morphine is not administered, consider local anesthetic techniques such as Transversus Abdominis Plane (TAP) block, local anesthetic wound infiltration, or QL block [14,19].

POSTOPERATIVE ANALGESIA PROCESS

- The intensity, frequency, and duration of respiratory monitoring should be based on patient risk factors and perioperative risk assessment.
- MMA that includes scheduled medication delivery (vs. PRN) of NSAIDs and acetaminophen is recommended.
- Use of parenteral/oral opioids should be reserved for patients with breakthrough pain. If the patient chooses to take stronger medications, consider a short course of opioids (morphine or hydromorphone) at the lowest effective dose for the shortest duration.
- Nonpharmacological and pharmacological therapies are important elements of postpartum pain management.
- Codeine is not recommended as first-line therapy to provide pain control. Potential pharmacogenomics and metabolic variability in the patient and newborn can impact efficacy and induce dangerous side effects, including increased risk for newborn overdose. Consider other forms of opioid analgesics [20-22].

CONCLUSION

Collaborative obstetric-anesthesia team-based care using 'holistic' guiding principles with evidence-based treatment driven protocols will provide the patient with the appropriate quality and safety and the healthcare provider with the appropriate role satisfaction in a collaborative and supportive team environment. Focused ERAS-CD element implementation will allow for the prevention of maternal-fetal hypothermia and result in better outcomes for mother and neonate using evidenced-based anesthesia and analgesia. Within a team-based collaborative framework, the anesthesiologists, obstetricians, midwifes, nurses, neonatologists, pharmacists and allied healthcare providers can thrive and be supported through those periods of stressful obstetrical care but they can embrace the healthy outcomes and joy of a healthy mother and healthy newborn.

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