

Implementing Enhanced Recovery after Surgery in Obstetrics: A Lesson from the Nationwide Lockdown

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ABSTRACT

Enhanced recovery after surgery (ERAS) has proven benefits to the patients and the health system at large. Implementing ERAS in obstetrics has the potential to decongest the maternity ward by reducing postoperative hospital stay with safe maternal and neonatal outcomes. Extrapolating outcomes from studies in a similar setting and from our experience, we hereby discuss the possibility of implementing modified ERAS in obstetrics adapted to our resource-limited setting. Contextual-based consensus on modifications and implementation has to come from all stakeholders for a successful program.

Keywords: Cesarean section, ERAS, Obstetrics.

Journal of South Asian Federation of Obstetrics and Gynaecology (2021): 10.5005/jp-journals-10006-1860

INTRODUCTION

Cesarean section (CS) is the most common obstetric surgery performed worldwide. The increasing trend and disparity in CS rate range from highest in Latin America at 43% to lowest at 4% in the sub-Saharan region.¹ The CS rate for Bhutan stands at 18%.² The low- and middle-income countries, the Himalayan kingdom of Bhutan, mandates free health care to all their citizens. The maternity ward at the Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) with a capacity of 36 beds bears the maximum burden of obstetric referral. The hospital CS rate stands over 32%.³ The existing manpower of five obstetricians, six residents, and 12 nurses on shift duty barely meets the minimum skilled health-care workers requirement.⁴

CLINICAL SETTING

With the second nationwide lockdown due to COVID-19 pandemic, two consultants and two residents were deployed on 24 hours shift for 2 weeks to manage the patient load in the ward. This has inadvertently compromised the quality of obstetric care and led to few adverse fetal and neonatal outcomes.

During normal days, mothers scheduled for elective CS are admitted one day prior to the day of surgery. They are kept fasting overnight from 10 pm. Prophylactic antibiotic, Cefazolin 2 gm is administered intravenously 30 to 60 minutes before skin incision. CS is performed under spinal anesthesia administered by nurse anesthetist or anesthesiologist. Intraoperative management of nausea and vomiting, euolemia, and normothermia is left at the discretion of the anesthetist team. Early essential newborn care is carried out routinely unless contraindicated. Postoperatively, the mother is kept nil orally for 6 hours. Maintenance IV fluid is given for 24 hours. Usually, intramuscular diclofenac sodium 50 mg at 8 hourly is given for 24 hours. Day 1 postoperative care encompasses routine vital parameters, pain, enteral, bowel, urinary functions, and neonatal assessment. Parenteral analgesics is converted to oral ibuprofen and ranitidine or paracetamol. Urinary catheter is removed and mothers are encouraged to ambulate. Day 2 assessment includes complete blood count in addition to day 1 component. Surgical wound inspection and dressing is done on

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How to cite this article: Tshering S, Dorji N, Lhaden K. Implementing Enhanced Recovery after Surgery in Obstetrics: A Lesson from the Nationwide Lockdown. *J South Asian Feder Obst Gynae* 2021;13(1):58–60.

Source of support: Nil

Conflict of interest: None

day 3, and the mother is discharged on oral analgesics. Written and verbal advice on postpartum care and follow-up plan is given to the mother before discharge.

As per the hospital protocol during the nationwide lockdown, all clinically indicated admissions routed through the teleconsultation services are mandated to undergo reverse transcription-polymerase chain reaction COVID-19 testing prior to admission with a single attendant. The daily bed status had to be adjusted based on the information from the teleconsultant. The verbal consensus among the consultants and residents on duty was reached on early discharge in low-risk mothers undergoing both emergency and elective CS. The ad hoc criteria for low-risk mothers was set: term pregnancies without medical or obstetric conditions and intraoperative complications. Preset hospital protocol on discharge criteria was used: absence of fever at least for 24 hours, independent ambulation, normal dietary, bowel, urinary functions, and a healthy surgical wound. The vitals and complete blood count are within the normal range and a normal neonate who is breastfeeding well. Exclusion criteria were those with any postoperative complications, residing away from the capital, or those not having adequate social network or family support.

A “focused and modified ERAS” was implemented based on enhanced recovery after surgery (ERAS) in the obstetrics pathway. A brief preoperative counseling was done on enhanced recovery and

the possibility of early discharge in low-risk mothers undergoing CS. Modifications entailed additional analgesia with paracetamol infusion and local infiltration of the wound with bupivacaine, subcuticular sutures in wound closure, early initiation of feeding, and urinary catheter removal. Sips of clear water was allowed at 2 hours. The postoperative mothers were put off IV fluids and allowed a normal diet at 6 hours. The urinary catheter was removed 12 hours approximately after the surgery and encouraged to ambulate. Analgesics were converted from parenteral to oral route at 24 hours. Upon satisfying the criteria of low risk and discharge, an option of discharge on postoperative days 2 or 3 was discussed with the mother and party. Mothers were encouraged to report any postpartum issues using the teleconsultation numbers provided by the mother and child health-care unit and the gynecology outpatient department.

MATERIALS AND METHODS

We searched PubMed and Google Scholar search engine using the keyword ERAS, enhanced recovery, fast track surgery, and CS. Relevant articles were analyzed in terms of population, intervention, comparison, and outcome. The application of “comprehensive” ERAS in CS is divided into three components as per the ERAS Society guidelines; the preoperative, intraoperative, and postoperative strategies⁵⁻⁷ (Fig. 1).

ERAS in CS has centered around the concept of early discharge of a healthy mother and baby. Its successful implementation would offer the patient and the hospital system with numerous benefits, especially in the public sector.⁸ ERAS advocates a win-win situation for both the mother–infant dyad.⁹ Adoption of ERAS would indirectly bring in dual benefit on the limited hospital logistics; decongestion of ward and reduction of waiting period for admission.

Over a week, the implementation of ERAS has allowed us to discharge 12 out of 17 mother–infant dyad deemed fit for early discharge on a postoperative day 2. The remaining five did not wish to go home citing difficult independent ambulation due to pain. Follow-up at one-week postpartum via a telephonic conversation with the mothers has revealed safe maternal and neonatal outcomes. All 12 mothers conveyed self-well-being and a healthy baby.

DISCUSSION

ERAS originally started with colorectal surgeries, which subsequently rolled out to other surgical disciplines. Although the safety of maternal and neonatal outcomes was proven in early discharge in many studies, they have not mentioned ERAS in obstetrics

as a guiding principle.¹⁰ Despite the numerous benefits proven by Brooten et al. as early as the 1990s, not many developing countries have adopted such feasible and acceptable strategies. This randomized controlled trial (RCT) has shown statistically significant benefit in terms of greater maternal satisfaction, lesser hospital charges, and same rates of readmission due to maternal and neonatal complications compared to standard obstetric care.¹¹ The literature review showed that most of the studies originated and propagated in an ideal setting in developed countries.¹² Few studies were carried out in public hospitals in the sub-Saharan and our South Asian region. The RCT using modified yet comprehensive ERAS conducted in Uganda showed favorable outcomes in terms of early discharge and rates of postoperative complications.¹³ Similar outcomes were reported from India.¹⁴ Focused and modified ERAS RCT by Madhumala et al. has clearly demonstrated the benefit of early gut stimulation and postoperative nausea and vomiting although the end point of shorter postoperative hospital stay was not analyzed.¹⁵ Early feeding as a focused postoperative component of ERAS in Pakistan showed favorable maternal outcomes.¹⁶ This multicenter randomized comparative trial was executed in phase-wise manner from protocol development, sensitization of stakeholders, and implementation.

Since private institutions function on a corporate business model, implementing ERAS can be a challenge.¹⁷ Literature review on enhanced recovery in a private hospital setting is exceedingly scanty. There is indirect evidence of profit orientation in private obstetric practice as shown by the high rate of CS.^{18,19} Longer hospital stay following cesarean delivery adds to the hidden cost even in public hospitals.^{20,21} This would probably be amplified in a private hospital setting. Initiating corporate social responsibility built on evidence-based obstetrics in the form of ERAS could be a feasible option.

As ERAS is a multidisciplinary execution, the stakeholders should be sensitized adequately. What we know from this situation-driven experimental setup is the lack of awareness, compliance, and willingness from stakeholders, which may lead to the failure of the program.²² While some of the intraoperative bundle of surgical care was already in place, important strategies like prevention of intraoperative nausea and vomiting from the anesthesiologist’s point of view were not practiced. Postoperative pain management has to be addressed on an individual basis. The blanket cover analgesia with intramuscular diclofenac sodium 50 mg at 8 hourly may be inadequate for some women. Pain management with multimodal analgesia is safe, effective, and feasible intervention.²³

We must reach a common consensus on a modified strategy suited to our own setting and develop our own protocol. Therefore, proper study on ERAS in our own setting deserves special



Fig. 1: Diagram showing flow process in ERAS in obstetrics

consideration. A huge backlog is expected owing to the current COVID-19 situation, and ERAS is a harbinger of hope and success in this period of obstetrician distress.

CONCLUSION

Extrapolating the outcomes from studies done under a similar setting, ERAS in obstetrics can be an effective strategy to shorten the postoperative hospital stay. Contextual-based consensus on modifications and implementation has to come from all stakeholders for a successful program.

ACKNOWLEDGMENTS

We would like to acknowledge all maternity nursing staff, scrub nurses, the anesthetist team, and the mothers who responded to our follow-up phone calls.

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