

Conference Abstract

*Medical Student Research Conference
University of Iowa Health Care, Carver College of Medicine, Iowa City, Iowa
September 14, 2018*

Recovery from cesarean delivery at UIHC: a comparison to Enhanced Recovery Protocols

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Keywords: Cesarean delivery, recovery, Enhanced Recovery Protocols

Introduction

Enhanced Recovery After Surgery programs (ERAS) have been used by some specialties for years, and are now becoming popular for gynecologic and obstetrics surgeries. ERAS programs consist of evidence-based interventions during a patient's hospital stay that are intended to promote early return to activities such as eating, ambulation, and voiding and to manage pain. These programs reduce the risk of complications post-operatively and shorten a patient's hospital stay. The University of Iowa Hospitals and Clinics (UIHC) is developing an ERAS protocol

for cesarean deliveries. Our goal was to determine how current practices and outcomes for cesarean deliveries at UIHC compare to established ERAS programs. We also sought to identify which patients would be appropriate candidates for an ERAS protocol at UIHC.

Methods

We collected 115 data elements from the EPIC electronic medical records of 206 patients who had a scheduled cesarean delivery in the year 2017. Patients were excluded if they had a morbidly adherent placenta or multiple gestation, or they delivered before 35

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Please cite this as: Chabal G, Bowdler N, Santillan D. Recovery from cesarean delivery at UIHC: a comparison to Enhanced Recovery Protocols. *Proc Obstet Gynecol.* 2018;8(3):Article 11 [2 p.]. Available from: <http://ir.uiowa.edu/pog/>. Free full text article.

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weeks gestation. We calculated the average time to reach post-operative goals for our sample, and then grouped our sample by gestational age at delivery and indication(s) for cesarean delivery in order to make comparisons to identify which groups would be good candidates for ERAS.

Results

The average times to meet postoperative goals for our sample including first ambulation, urinary catheter removal, first liquid intake, and first solid intake were: 14.63 hours, 19.82 hours, 2.73 hours and 5.59 hours, respectively. Our patients were without oral liquids and solids for over 12 hours before surgery. Comparisons of women who delivered at different gestational ages showed significantly different indications for cesarean delivery, rates of intra-operative complications, blood loss, birth weights, and newborn disposition. Time to meet postoperative goals did not differ between groups except for time to ambulation, which was shorter for women who delivered at earlier gestational ages. Groups separated by indication(s) for surgery differed significantly with respect to gravidity, parity, primary cesarean, secondary cesarean, gestational age at delivery, intraoperative complications, and newborn disposition.

Discussion

The time for UIHC patients to meet post-operative goals is longer than stated in established ERAS protocols. Preoperatively, patients were without oral liquids and solids for longer than recommended by ERAS programs. Some practices at UIHC already

resembled aspects of ERAS, such as active warming during surgery and neuraxial morphine for post-operative analgesia. Many of the differences between groups by gestational age and indication(s) for surgery were expected. However, there were more intraoperative complications, in particular postpartum hemorrhages, in deliveries at earlier gestational ages. This might be explained by the differences in indications for delivery at various gestational ages; women with placenta previas were delivered at 36 weeks gestation whereas repeat cesarean sections were scheduled at 39 weeks gestation.

Conclusions

We hypothesize that the times to meet postoperative goals after cesarean section could be shortened by implementing an ERAS program at UIHC. Based on our comparisons between groups by gestational age and indication(s) for delivery, any patient who meets our inclusion criteria could benefit from ERAS interventions. However, expectations for the neonates delivered at 35-36 weeks may differ from those at 37+ weeks. For example, a goal such as skin to skin contact with their mothers in the operating room may have less success as there is a greater likelihood that these infants would require care in the neonatal intensive care unit shortly after birth.

This presentation received the award for Excellence in Obstetrics and Gynecology Research.