Fighting the Opioid Epidemic: Implementation of an Obstetrics ERAS Pathway at Pennsylvania Hospital

Pennsylvania NSQIP Meeting

Pennsylvania Hospital Obstetric ERAS Working Group
Stephanie Ewing, MD; Aasta Mehta, MD; Erica Delaney, CNM; Harish Sehdev, MD; Jourdan Triebwasser, MD; Olivia Harris, MD; Jared Tepper, MD
Outline

- Background
  - Opioid Epidemic
  - Opioid Prescribing in Obstetrics
  - Opioid Use Disorder after Surgery
  - Enhanced Recovery After Surgery (ERAS) in Obstetrics
- Implementation of ERAS in Pennsylvania Hospital Obstetrics
The Opioid Epidemic

- Nationwide:
  - 70,200 drug overdose deaths in 2017 (6x higher than in 1999) -> 68% involved an opioid
- Pennsylvania is one of the 5 states with highest rates of opioid overdose deaths
  - 37.9/100,000 deaths
- Of the 1,217 overdoses in Philadelphia in 2017, 1,074 involved opioids
- Women more likely to become abusers than men

CDC
Neonatal Abstinence Syndrome

- Increasing Incidence
  - HCUP study: 28 states w. available data showed 300% increase in NAS (1.5/1000 births - 6.0/1000 births) between 1999-2013

- Long-Term Effects
  - Fill et al. (2018): infants born with NAS were significantly more likely to have developmental delay, speech or language impairment

- Cost of Care (hospitalizations)
  - $1.5 billion in 2012
Opioid Prescribing in Obstetrics

- Cesarean delivery is the most common major surgical procedure performed in the U.S.

- Opioids are commonly prescribed in excess after cesarean delivery
  - Madsen et al: 5-80 pills
    - 19% adhere to published recommendations, 47% base discharge rx on inpatient use, 81% unaware that diversion is the primary source of these drugs, 17% counsel patients on proper disposal
  - Osmundson et al: patients use about half of opioid rx at discharge
    - Median 30 tabs -> 75% had unused tabs, median 10/patient -> extrapolated to 2,540 tabs total
      - 63% stored unused tabs in unlocked location in their home; 6% disposed of pills appropriately
    - In-hospital opioid use corresponded with higher rates of opioid use post-discharge
Persistent Opioid Use after Surgery

- Risk for new persistent opioid use after surgery
  - 5.9% of patients qualified as new persistent opioid users after minor procedures, 6.5% after major procedures

- Limited data in obstetric population
  - Approx. 1/300 opioid-naive women who fill opioid rx after cesarean become persistent opioid users in the year after delivery


The incidence of new persistent opioid use was similar between the 2 groups (minor surgery, 5.9% vs major surgery, 6.5%; odds ratio, 1.12; SE, 0.06; 95% CI, 1.011.24). By comparison, the incidence in the nonoperative control group was only 0.4%.
ERAS in Obstetrics

- Popular in Europe and the UK
- In the U.S.
  - Multimodal, stepwise approach to pain control postpartum supported by ACOG
  - Holland et al: Opioid use after C/S may not even be necessary at all
    - Eliminated routine ordering of PO opioids after CD in patients already on ERAS protocol
    - Inpatient opioid use: 68% pre-intervention -> 45% post-intervention (with NO CHANGE in pain scores or satisfaction)
    - Opioid rx at discharge: 91% pre-intervention -> 40% post-intervention
ERAS in Obstetrics

- ERAS Society Recommendations for Cesarean Delivery - Part 1
  - Antenatal
    - Education and counseling
    - Optimization of medical comorbidities
  - Preoperative
    - Antacids/H2 blockers
    - No more NPO at midnight

ERAS in Obstetrics

- ERAS Society Recommendations for Cesarean Delivery - Part 2
  - Intraoperative
    - Antimicrobial ppx and skin prep
    - Anesthesia - Regional anesthesia (spinal, epidural, combined spinal-epidural) preferred
      - Transversus abdominis plane (TAP) blocks controversial
    - Surgical Technique
      - Surgical incision: minimally invasive Joel Cohen incision, blunt expansion of hysterotomy
      - Closure of subcutaneous tissue ≥ 2cm in thickness
    - Other
      - Perioperative normothermia with use of warmed IV fluids and forced air warming
      - Maintenance of euvolemia
  - Postoperative - Part 3
    - Recommendations not released yet
Fighting the Opioid Epidemic in Obstetrics
QI Project at Pennsylvania Hospital

- **Goals**
  - Decrease (Eliminate!) in-hospital and post-discharge opioid use
  - Increase the rate of proper storage and/or disposal of unused opioids

- **Components**
  - Phase 1
    - Implementation of ERAS pathway
    - Education about opioid storage/disposal
  - Phase 2
    - Standardized counseling about expectations and management regarding postoperative discomfort
  - Eventually: Individualized opioid rx based on in-hospital use
QI Project at Pennsylvania Hospital

- **Rationale**
  - ERAS decreases rate of postoperative complications and in-hospital opioid use in many surgical subspecialties but is not well-studied in Obstetrics
  - Increased post-discharge opioid use following cesarean delivery is associated with higher in-hospital opioid use
Current Pathway at Pennsylvania Hospital

- **Pre-operative**
  - No standardized pre-op patient education or counseling
  - Strict NPO after midnight, no pre-op analgesia or antacids/H2 blockers

- **Intra-operative**
  - Intrathecal morphine with spinal or epidural

- **Post-operative**
  - Analgesia: Toradol prn → Ibuprofen prn, Tylenol prn (mild), Percocet prn (moderate), Dilaudid IV prn (severe)
  - PCA ordered for GETA without spinal or epidural

- **Discharge**
  - Rx for ibuprofen, senna, iron if needed, and 20 tabs of percocet/oxycodone
  - No instructions about disposal
Enhanced Recovery after Cesarean Pathway (Phase 1)

- **Preoperative**
  - Famotidine IV, Bicitra PO, Scopolamine patch, and Tylenol PO
  - Carbohydrate drink up to 2 hours pre-op (but no small meal after midnight)

- **Intraoperative**
  - Continue routine intrathecal morphine with spinal or epidural
  - Bair hugger
  - TAP block or incisional infiltration if GETA and unable to receive intrathecal morphine

- **Postoperative**
  - Analgesia: scheduled meds
    - Toradol -> Ibuprofen scheduled, Tylenol PO scheduled, Oxycodone or Hydromorphone PO prn

- **Discharge**
  - No changes to meds
  - Provide instructions about proper disposal of excess opioids
Enhanced Recovery after Cesarean Pathway (Phase 2)

- Preoperative
  - Standardized antenatal counseling by providers regarding expectations surrounding postoperative discomfort and management of discomfort
  - Possible use of patient engagement mobile application
Data Collection and Evaluation of Success

- Who? All patients who have had cesarean!

Data collection

- ~4 months

Phase 1: Inpatient ERAS Implementation

- ~4 months

Data collection

- ~4 months

Phase 2: Standardized Counseling

- ~4 months

Data collection

- ~4 months

- Data collection

- Inpatient RedCAP survey -> follow-up RedCAP surveys at 2 weeks and 6 weeks post-discharge
- Chart review

- Outcomes

- Inpatient average daily opioid usage, patient satisfaction and pain scores, post-discharge opioid usage and satisfaction, rate of proper disposal/storage of leftover opioids
The opioid epidemic is a serious problem and it’s time to make an impact in the Obstetrics arena to reduce opioid usage and possible dependence/abuse for young women.
Acknowledgements

- Dr. Allen Bar
- Stephanie Diem
- John Regan
Thanks!