Post Caesarean Analgesia – An Update

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Post caesarean analgesia – No Conflicts of Interests

Agenda

• Neuraxial opioids
• Multimodal therapy
• Plan B
• What do we do?
• How do we do?
• Take Home Messages

34th SSAI Congress
bridging Basic Science and Clinical Practice
Post caesarean analgesia – an update

It is important!

• No magic bullet
• Increasing C-section rate
• Do good
• Mother-child
• Development of chronic pain (0.3% - 8%)

Intrathecal Morphine – effect

**Figure 5.8** Mean 24-hour PCA morphine use after doses of intrathecal morphine from 0 to 0.5 mg in parturients after cesarean delivery. Data are mean (standard error). Reprinted with permission from Palmer CM, et al. Dose-response relationship of intrathecal morphine for post-cesarean analgesia. *Anesthesiology.* 1999;90(2):437–444.

Intrathecral Morphine – side-effects

Figure 5.9 Mean 24-hour pruritus scores in parturients after doses of intrathecal morphine from 0 to 0.5 mg. Reprinted with permission from Palmer CM, et al. Dose-response relationship of intrathecal morphine for post-cesarean analgesia. Anesthesiology. 1999;90(2):437–444.

Palmer CM et al. Anesthesiology 1999;90:437-44

Intrathecal Sufentanil & Fentanyl

1.5 mg Epidural Morphine:
• Decreasing pruritus severity (at 6, 12, and 24 hrs)
• Less frequent incidence of nausea and vomiting (at 6 hrs)

Opioids – IV, tablets or?

- **IV vs. IT morphine**
  - Easy, but not necessarily better...

- **Oral oxycodone = IV morphine**
  - Or maybe even better

- **Oral oxycodone = IT morphine**
  - When part of multimodal analgesic package

- **Oral analgesia**
  - At fixed time interval + on-demand

Non Steroidal Anti-Inflammatory Drugs 1

- Effective against visceral pain from uterine incision
- Drug?
  - Diclofenac, Ibuprofen, Naproxen, Ketorolac, Celecoxib or …
- Dose?
  - X1, x2, x3. Fixed time interval or on-demand?
- Administration?
  - IV, oral, rectal, subcutaneous?
Post caesarean analgesia – Multimodal Therapy

**Non Steroidal Anti-Inflammatory Drugs 2**

- **Drug and dose?**
  - Supp. Diclofenac 50mgx3, or 100mgx2

- **Diclofenac?**
  - Increased cardiovascular risk
  - Ibuprofen is an alternative

- **Side effects**
  - GI bleeding, atone uterus

- **Administration?**
  - IV, oral, rectal, subcutaneous installation?
  - Fixed time interval better than on demand

3. Schmidt et al. Ugeskr Laeger. 2016 Dec 26;178(52)
Post caesarean analgesia – Multimodal Therapy

Paracetamol

- PCM + NSAID
  - Better than PCM alone
  - Better than NSAID alone?
- PCM post CS – no effect?
- PCM post CS – no side effects

Mean cumulative consumption of morphine by PCA in groups MDP, MD, MP, and M.

Gabapentin

**Gabapentin Improves Postcesarean Delivery Pain Management: A Randomized, Placebo-Controlled Trial**

Albert Moore, MD,* Joseph Costello, MD,* Paul Wieczorek, MD,* Vibhuti Shah, MD,† Anna Taddio, PhD,§ and Jose C. A. Carvalho, MD, PhD*†


**A Single Preoperative Dose of Gabapentin Does Not Improve Postcesarean Delivery Pain Management: A Randomized, Double-Blind, Placebo-Controlled Dose-Finding Trial**

Jonathan Short, MB, BS, FRCA,* Kristi Downey, MSc,* Paul Bernstein, MD, FRCPC,† Vibhuti Shah, MD, MSc, FRCPC,† and Jose C. A. Carvalho, MD, PhD, FANZCA, FRCPC*†

*Anesth Analg 2012;115:1336-42.

**A Perioperative Course of Gabapentin Does Not Produce a Clinically Meaningful Improvement in Analgesia after Cesarean Delivery**

David T. Monks, M.D., David W. Hoppe, M.D., Kristi Downey, M.Sc., Vibhuti Shah, M.D., Paul Bernstein, M.D., Jose C. A. Carvalho, M.D., Ph.D.

*Anesthesiology. 2015;123:320-6*
Other

- Pregabalin
- Dexamethasone
- MgSo4
- Ketamine

El Kenany S et al. IJOA. 2016;26:24-31
Clonidine & Dexmedetomidine

- Clonidine & Dexmedetomidine, IV or intrathecal
  - Effects
    - Prolonged time to first analgesic requirement
    - Reduce postoperative morphine consumption
  - Side effects
    - Sedation (hypotension or bradycardia)
    - Caution...
- TAP block. 1µg/kg. Prolong effect 10hrs

Tradition

Future?
Crespo et al. IJOA 2017, article in press
Post caesarean analgesia – Plan B

Transversus Abdominis Plane (TAP) block

- $TAP_{bupi} > TAP_{placebo}$

- $ITM + TAP_{bupi} = ITM + TAP_{placebo}$

- $TAP_{bupi} < ITM$

R. Champaneria et al. IJOA. 2016;28:45-60

Opioid consumption at 24 hr.
TAP or Wound Infiltration?

Fig. 3. Graphs of mean cumulative morphine consumption in the two groups, in continuous time.


Fig. 2. Kaplan-Meier graph of the proportion of patients in each group who did not require fentanyl over time after cesarean delivery.

Wound infiltration with NSAID

- Infiltration with Diclofenac & Ketorolac
  - Provides improved analgesia compared with
    - Systemic NSAIDs or
    - Local infiltration with local anaesthetic alone
  - Reduces inflammatory mediators in wound exudate
  - More studies are needed ...

P. Lavand’homme et al. Anesthesiology 2007; 106:1220–5
Quadratus Lumborum Block

- \( QL_{\text{bupi}} > QL_{\text{placebo}} \)
  - Pain
  - Opioid consumption


- \( QL_{\text{bupi}} > TAP_{\text{bupi}} \)
  - Visceral pain
  - 12-48 hrs


- ClinicalTrial.gov
  - 6 trials. Multimodal approach
  - QL vs ITM or TAP

K: kidney, lv: liver, ql: quadratus lumborum, p:psoas major, lift: lumbar interfascial triangle
Post caesarean analgesia – an update

DepoFoam®

- Delivery system: multiple microscopic, liposomal particles
- EREM – Extended release of epidural morphine.
- EXPAREL – Bupivacaine liposome injectable suspension
- ClinicalTrial.gov
  - 4 trials
  - TAP/wound infiltration

Tranversus Abdominus Plane Block Performed with EXPAREL for Post Cesarean Section Analgesia: A Case Report
A. Grab et al. ASA Annual Meeting 2014, A1298
What do we actually do?

Colleagues from 14 sites were asked.

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<th>After CS in spinal</th>
<th>Iceland 1 site</th>
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<th>Norway 4 sites</th>
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Post caesarean analgesia – an update

Do better

• Evaluation!
  – How do we do?
    • Instead of ”What do we do?”

• Pain After Delivery – group
  • Recovery Unit?
  • Maternity ward?
  • At home?
Take Home Messages

1. Intrathecal opioids
2. Multimodal therapy
   Tbl NSAID + Tbl PCM and Tbl Opioid
3. Plan B?
3. Re-evaluate

Thanks to previous and present colleagues at the faculty of SSAI Obstetric Anaesthesia for providing me with information about their local post caesarean section analgesia
Thank you

“Mr. Osborne, may I be excused? My brain is full.”