Impact of guideline recommendations for post-caesarean analgesia on pain, nausea and pruritus – project protocol

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Introduction

Caesarean section is associated with moderate to severe pain and postoperative analgesia can be challenging. Inadequate postoperative pain relief may prolong the postoperative course and may lead to hyperalgesia and persistent postoperative pain. It can influence patient satisfaction, mother-child bonding and the success of breastfeeding.[1]

At Stavanger University Hospital (SUH), we do not use intrathecal morphine due to the extra need for follow up postoperatively, monitoring respiration and sedation.

In 2019, Society for Obstetric Anesthesia and Perinatology (SOAP) published a consensus statement of monitoring recommendations to encourage the use of intrathecal morphine. Ultra-low dose morphine (0,05 mg) to healthy pregnant women, does not require the same follow up of sedation and respiration.[2] According to SOAP´s consensus statement, institutional guideline for postoperative monitoring is recommended.[2]

In 2020 a PROSPECT guideline for postoperative pain management for elective caesarean section was published, recommending intrathecal morphine 0,05 – 0,1 mg.[1] Ultra-low dose could be as effective with less side effects.[3] After delivery of the baby, they recommend paracetamol, NSAIDs and a single dose of intravenous (iv) dexamethasone in the absence of contraindications,[1] and postoperative pain management with paracetamol, high-dose ibuprofen and administration of opioids when needed.[1,4]

The aim of this study was to compare pain, nausea and pruritus between current pain management with recommended guidelines using ultra-low dose of intrathecal morphine, iv paracetamol, steroids and NSIAD´s, for elective caesarean section, and for emergency caesarean section using current pain management.

Methods

The study will be conducted at SUH and consisted of two parts; first we evaluated current postoperative pain management (control group), and compare it to emergency caesarian section using the same current pain management. Then we evaluated guideline recommended postoperative pain management (intervention group).

Inclusion criteria were healthy parturient, term pregnancy undergoing caesarean section.

Exclusion criteria were patient refusal, maternal heart or lung disease (mild asthma was included), known or suspected obstructive sleep apnoea syndrome, preeclampsia, body mass

index > 40, insulin-dependent diabetes mellitus, contraindications to ibuprofen, dexamethasone or morphine, chronic pain, neurological disease, drug abuse, age < 18, ASA 3 and patients receiving other forms of anaesthesia (epidural or general).

Anaesthesia and postoperative analgesia

Control group: (02.11.20-14.02.21)
The patients received SUH's current treatment.

- Spinal anaesthesia: Hyperbaric Bupivacaine 5 mg/ ml: 9-11 mg and Fentanyl: 10-15 µg
- Postoperative pain management: Paracetamol 1g x 4, Ibuprofen 400 mg x 4, oxycodone 10 mg (< 70 kg) or 20 mg (> 70 kg) x 2 po. Additional oxycodone 2,5 mg iv /5 mg po when needed.

Emergency group: (02.11.20-14.02.21)
The patients received SUH's current treatment.

- Spinal anaesthesia: Hyperbaric Bupivacaine 5 mg/ ml: 9-11 mg and Fentanyl: 10-15 µg
- Postoperative pain management: Paracetamol 1g x 4, Ibuprofen 400 mg x 4, oxycodone 10 mg (< 70 kg) or 20 mg (> 70 kg) x 2 po. Additional oxycodone 2,5 mg iv /5 mg po when needed.

Intervention group: (22.04.21- 05.11.21)
The patients received guideline recommendations:

- Spinal anaesthesia: Hyperbaric Bupivacaine 5 mg/ ml: 9-11 mg. Fentanyl 12,5 µg and morphine 0,05 mg.
  After delivery of the baby: Dexamethasone 8 mg iv, paracetamol 1000 mg iv and parecoxib 40 mg iv.
- Postoperative pain management: Paracetamol 1000 mg x 4 and
  Ibuprofen 600 mg x 4 po. Oxycodone 2,5 mg iv or 5 mg po when needed.

Postoperative follow up in the postoperative care unit (POCU) and in the maternity ward (MW)

Nurses and midwives recorded the level of pain at rest and movement, nausea and pruritus the first 24 hours after spinal anaesthesia.

We recorded four variables:

1) Numeric Rating Scale (NRS) of pain during the first 24 hours after surgery: 0 is no pain and 10 is worst pain imaginable. Measured every 30 min at the POCU and every 2 hours at the MW. The maximum values during stay at POCU and at MW are recorded.
2) Post-Operative Nausea and Vomiting (PONV) at the POCU and at the MW during the first 24 hours after surgery: yes/no at POCU and at MW: yes/no.
3) Pruritus at the POCU and at the MW during the first 24 hours after surgery: yes/no.

4) Additional oxycodone consumption at the POCU and at the MW during the first 24 hours after surgery: Number of mg administered at each unit.

Variables were recorded every 30 min at the POCU, and every 4 h at the MW.

Statistical plan

Pain scores (NRS score) will be compared with independent samples t test if they are normally distributed.
Nausea (yes/no) and pruritus (yes/no) will be compared with chi square test.
Oxycodone consumption (no. of mg administered) will be compared with Mann-Whitney U test.

The results will be analysed using Excel 2016 (Microsoft Corp, Redmond) and IBM SPSS Statistics version 26 (IBM, New York).

Ethics

All participants will give written informed consent. The Regional Committee for Medical and Health Research Ethics (REK no. 194475), the Norwegian Centre for Research Data (NSD no. 995945) and the Institutional Review Board at SUH (ID 1399-2435) have all approved the study.

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Declarations of interests

None

Literature

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