Post-caesarean analgesia
Contemporary challenges & barriers to providing optimal post-caesarean analgesia
Obstetric Anaesthesia SIG Meeting
“Obstetric anaesthesia... delivering what matters”
International Convention Centre, Sydney
May 5-6, 2018
#OBSIG18
ShowGizmo Q 1
with respect to OB anaesthetic practice

1. Consultant public
2. Consultant public and private
3. Consultant private
4. GP anaesthetist
5. Trainee
ShowGizmo Q 2
as an OB anaesthetist, do you consider yourself

1. Expert
2. Proficient
3. Occasional – comfortable
4. Occasional – mostly terrified
C Section rates:

• Caesarean section (CS) is the most commonly performed major operation for women worldwide (22.9 million in 2012)

• World Health Organization (WHO) recommends that the maximum rate of caesarean birth should be no more than about 15 per cent (and should only be performed when there is a medical indication)
Where C-Section Rates Are Too High, And Too Low

The Atlantic calls Brazil’s high C-section rate — 82 percent in the country’s private hospitals — an “epidemic,” driven in part by doctors that push interventions like labor-inducing drugs and painful episiotomies that can make C-sections feel like a welcome alternative. But Brazil isn’t the only place in the world where the rates are too high, while elsewhere in the world access to C-sections is woefully scant.

Cesarean sections rates by country*

*Data for each country is from most recent year available

Source: World Health Organization

THE HUFFINGTON POST
ShowGizmo Q3
Are current C Section rates in A & NZ:

1. Increasing
2. Decreasing
3. Stable
Australia: 1993: 19%  2013: ~ 33%
NZ: 1993: 14.7%  2016: 25.5%

Figure 1. Rates of caesarean section by age band in Australia, 2005–13. From the AIHW Australia’s Mothers and Babies series.7
Figure 3.25: Number of caesarean sections for selected women per 1,000 selected women, age standardised, by Statistical Area Level 3 (SA3), 2012-2014: Australia map
Figure 3 Proportion of births by caesarean section operation by hospital sector (1998–2007)

Source: AIHW Australia’s mothers and babies 1998 to 2007 (multiple)\textsuperscript{18–20}
Figure 3.24: Number of caesarean sections for selected women per 1,000 selected women, age standardised, by state and territory and patient funding status, 2012–2014

The data for Figure 3.24 are available at www.safetyandquality.gov.au/atlas.
Possible reasons for increase (now stabilising)

- ↑ obesity & related comorbidities eg diabetes, HTN
- ↑ maternal age
- ↑ C Sections = ↑ Repeat C Sections
- ↓ appetite for risk (e.g. breech delivery, twins, forceps delivery, VBAC)
- ↑ use of fetal monitoring
- ↑ use of ultrasound fetal surveillance
- ↑ IOL
- maternal choice
Forget ‘too posh to push’ – doctors are behind the rise in c-sections
Challenges in post-CS analgesia:

• Elective vs emergency; normal vs high risk
• Patients unlike usual post-surgical – have to mind a newborn baby and manage breastfeeding and large numbers of visitors.
• Keen to mobilise, may not want pumps, IV lines
• Fatigued – labour, disrupted sleep
• Psychological factors: disappointment (non-planned Caesar); ‘baby blues’; family/social issues
• Pre-birth: pain syndromes, substance abuse, psychiatric issues, comorbidities
Challenges in post-CS analgesia:

- Often managed on ward by midwives not surgically trained nurses
- VTE thromboprophylaxis
- Concerns re: analgesia medications and breastmilk and effects on neonate
- Other non-surgical pain
- Constipation and ileus not well tolerated
- **Marked variation in degree of pain experienced**
Contemporary barriers to providing optimal post-caesarean analgesia
Safety Information
Trans-Tasman Early Warning System - Alert
Communication
Use of tramadol during breastfeeding
7 July 2017
### Information for consumers and caregivers

- Small amounts of tramadol are found in breast milk and the effect this has on infants and newborns is not fully known.
- Your specialist doctor (obstetrician), midwife or general practitioner (GP) may prescribe tramadol for you whilst you are breastfeeding. They will have considered the benefits and risks of harm to you and your baby and decided this is the right medicine for you. They will discuss and explain this to you.
- Tramadol is sometimes used to help manage pain after a caesarean section.
- Watch your baby closely for signs of breathing problems if you are taking tramadol and breastfeeding. These signs include slow or shallow breathing, difficulty or noisy breathing, more than usual sleepiness, trouble breastfeeding or limppness.
- Seek immediate medical attention if you notice your baby is having trouble breathing or are worried about your baby.
- Breast milk is the perfect food for your baby and breastfeeding is perfect for you too.
- If you have any questions, talk to your specialist doctor (obstetrician), midwife, general practitioner (GP) or pharmacist.

### Information for healthcare professionals

- The use of tramadol during breastfeeding is not recommended because its safety in infants and newborns has not been studied.
- The benefits and risks of harm of treatment with tramadol in both the mother and baby should be considered as well as the benefits and risks of harm of not treating.
- It is also important to consider the benefits and risks of harm of using an alternative analgesic. Non-steroidal anti-inflammatory drugs (NSAIDs) may not be suitable for some women. Women who are ultra-rapid metabolisers of codeine may have higher morphine levels in their breast milk, which may lead to life-threatening or fatal side effects in newborns. Oxycodone may cause respiratory depression in newborns. Consult the data sheets for more information.
- The exposure of the baby to tramadol is low at around 112 microgram/kg/day (2.24% relative to the mother) and around 30 microgram/kg/day (0.64% relative to the mother) for the active metabolite when the mother is taking tramadol 100 mg orally every six hours.
- Exposure is likely to be greater the longer the mother takes tramadol since bioavailability increases over time. Advise parents and caregivers to watch closely for signs of breathing problems in infants and newborns exposed to tramadol through breast milk. These signs include slow or shallow breathing, difficulty or noisy breathing, more than usual sleepiness, trouble breastfeeding or limppness.
Position statement on the use of slow-release opioid preparations in the treatment of acute pain

Mounting evidence highlights the inappropriate use of slow-release opioids for the treatment of acute pain. The recommendations in this statement are in line with the approved indications for slow-release opioids listed by regulatory authorities including the Therapeutic Goods Administration in Australia, Medsafe in New Zealand, and the US Food and Drug Administration.

**Recommendation**

Slow-release opioids are not recommended for use in the management of patients with acute pain.
3 Pressure for early discharge from hospital

Variation from public to private
In uncomplicated cases, may be as short as 2 days
Enhanced recovery after elective caesarean section

Information for women and birth partners
ERACS (Southampton)

- **Elective patients**
- **Preop**: po ranitidine night before surgery
- No solids after 2400, free fluids till 0600
- PREOP drink + po ranitidine and metoclopramide @ 0600 then fasted
- **Postop**: IV fluids till drinking, Early solids offered in recovery. Chewing gum if not feeling like eating
- PR NSAIDS 12 hrly
- Early mobilization by evening of surgery
- Assessed next day and discharged
- **2 – 3 Midwife or support worker home visits** in first 10 days + phone follow up
The available evidence suggests that gum chewing in the immediate postoperative period after a CS is a well tolerated intervention that enhances early recovery of bowel function. However the overall quality of the evidence is low.

Gum chewing offers a safe, simple and inexpensive method for hastening the recovery of intestinal function after caesarean section.
ShowGizmo Q4: Are you using ERACS in your hospital for selected patients?

1. YES
2. NO
4

Incidence of chronic post surgical pain (CPSP)
Incidence and severity of chronic pain after caesarean section: A systematic review with meta-analysis

Weibel, Stephanie; Neubert, Katharina; Jetting, Yvonne; Melssner, Winfried; Wockel, Achim; Roewer, Norbert; Kräcke, Peter

<table>
<thead>
<tr>
<th>Pain ‘localisation’</th>
<th>3 to &lt;6 months incidence (95% CI) $\hat{p}$, $P$</th>
<th>6 to &lt;12 months incidence (95% CI) $\hat{p}$, $P$</th>
<th>≥12 months incidence (95% CI) $\hat{p}$, $P$</th>
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<tbody>
<tr>
<td>Scar</td>
<td>15 (4475) 15.4% (9.9 to 20.9%) $\hat{p} = 97.12%$, $P &lt; 0.001$</td>
<td>14 (3345) 11.5% (8.1 to 15.0%) $\hat{p} = 91.55%$, $P &lt; 0.001$</td>
<td>12 (3451) 11.2% (7.4 to 15.0%) $\hat{p} = 94.96%$, $P &lt; 0.001$</td>
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<td>Any/residual</td>
<td>4 (1466) 19.4% (2.1 to 36.7%) $\hat{p} = 98.86%$, $P &lt; 0.001$</td>
<td>1 (228) N/A</td>
<td>2 (826) 22.1% (19.3 to 25.0%) $\hat{p} = 0%$, $P = 0.753$</td>
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<tr>
<td>Back</td>
<td>4 (1945) 29.8% (10.9 to 48.6%) $\hat{p} = 98.89%$, $P &lt; 0.001$</td>
<td>5 (2085) 38.5% (13.7 to 63.4%) $\hat{p} = 99.46%$, $P &lt; 0.001$</td>
<td>5 (3136) 17.5% (8.5 to 26.5%) $\hat{p} = 97.47%$, $P &lt; 0.001$</td>
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<td>Pelvic</td>
<td>2 (1491) 5.5% (0.0$^a$ to 13.3%) $\hat{p} = 96.51%$, $P &lt; 0.001$</td>
<td>3 (712) 11.0% (2.7 to 19.3%) $\hat{p} = 94.35%$, $P &lt; 0.001$</td>
<td>4 (1717) 9.9% (2.6 to 17.2%) $\hat{p} = 97.09%$, $P &lt; 0.001$</td>
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CI, confidence interval; N/A, not available. $^a$ The 95% CI reached ±1.8 from the effect estimate 5.5%. Formally the lower CI limit was −2.3%. Because it is not possible to have a percentage less than zero in reality, the interpretation is that the 95% CI ranges from 0% to 13.3%.
No post caesarean analgesia regimen is perfect
Popular regimens:

- Intrathecal (B+/-F) + multimodal* oral (incl parecoxib intra op)
- Intrathecal (B +F + morphine)
- Intrathecal (B + F) + PCEA pethidine or LA
- Epidural + PCEA pethidine or LA
- Intrathecal (B+F) + PCA + multimodal

- + TAP blocks /LA in wound

*Multimodal is typically regular paracetamol qid or ‘Panadol Osteo’ tds
+ NSAID + oral tramadol &/or oxycodone
ShowGizmo Q 5
What would be your most common anaesthesia technique and order for postop CS analgesia:

1. Spinal anaesthesia (B+F) + multimodal oral incl opioids
2. Spinal anaesthesia (B+F+M) with oral opioids withheld
3. Spinal anaesthesia (B+F+M) with oral opioids prn
4. Spinal anaesthesia (B+F+/-M) + PCA
5. CSE/epidural + PCEA pethidine / LA
Other adjuncts:

• **TAP blocks** have not been shown to be of advantage over IT morphine
  
  *Mcmorrow et al BJA 2011*

• **I-TAP block**: Staker et al Significant opioid sparing
  
  *Anaesthesia 2018 73: 594-609*
• **IT clonidine** (50-75 mcg) added to bupivacaine and fentanyl has been shown by several authors to significantly prolong anaesthesia and postoperative pain relief without apparent neonatal effects or any significant maternal effects except sedation

*(Note off-label use)*

• Gabapentin

• Ketamine
Popular regimens: Problems

• Any multimodal oral regimen is invariably nurse-administered (NAOA)
  Staffing ratios may lead to delays in administering regular and prn meds

• IT morphine: variable duration / side-effects esp pruritus, N,V. occasionally, slow onset.
  Concern re: potential for delayed respiratory depression
  Requires (institutional protocol) monitoring for respiratory depression.
  Obs may be variably performed and documented.
'Intrathecal morphine 200 μg provided better analgesia but with more nausea compared with morphine 100 μg'
Popular regimens: Problems

- PCEA: pethidine Good track record, well validated. Patients often slow to mobilise due to presence of pump. Concerns re: excretion in breastmilk. IDC & IVC typically remain in.

PCEA: LA  Motor block, inadequate analgesia

**Epi catheter problems, eg dislodgement

Care with timing of epi catheter removal if anticoagulated
Popular regimens: Problems

• PCA: N, V, pruritus, sedation

• NSAIDS: May be contra-indicated. Often withheld due to asthma, PIH, pre-eclampsia, low platelets, kidney disease etc
Marked variation in degree of pain experienced

Are there predictors?
Longer surgery
Obesity
Pre-op anxiety /expectation of pain / analgesia needs from previous surgery
Possible reasons for increase

- ↑ obesity & related comorbidities eg diabetes, HTN
- ↑ maternal age
- ↑ C Sections = ↑ Repeat C Sections
Nurse–controlled oral analgesia  NCOA

• Some decades ago, **intermittent IM narcotics** were the standard post-operative analgesia ordered for most surgery

• **Poor pain control** due to delays between demand for analgesia and administration was common, mainly due to staffing and the need for **dual signing**. Analgesia was not always titrated to individual need.
Over the years the pendulum has swung from:

intermittent IM
to IV infusions
to PCA & PCEA + non-narcotic multimodal
to nurse-administered opioids + oral multimodal
We are now almost back to square one
Is it time for PCOA?
Still have not achieved the Holy Grail of perfect post caesarean analgesia

Generally regimens depend on anaesthetist preference, institutional protocols, resources, (nurses, pumps etc), drug availability and cost
Summary:

• Whilst consistency is safe, the downside is not all patients benefit from only using one approach
• Post-caesarean analgesia needs to be individualised
• A decision-making algorithm is helpful, particularly for trainees or the occasional anaesthetist
• An acute pain service or anaesthetist with a special interest in pain available for consultation is useful
Anaesthetists are not always available to manage acute pain issues and generally are not responsible for discharge prescription.
Discharge opioids:

Concerns re: unused opioids from discharge scripts

Osmundson et al American COG annual meeting 2018:
Customised discharge planning for opioids based on in-hospital use and preop screening questions
Customised group received less than half supply (14:30) and used half that of the control group (8:15)
Summary:

• PCOA (which is what patients are on at home) should be considered
• Industry could contribute to further development of PCOA delivery devices which meet regulatory requirements
• A clear written and pictorial plan for step down analgesia should be given to the patient and primary care givers
• Anaesthetists and pharmacist input desirable
• Patient follow-up is essential
• Patient and midwife/nurse education is essential