Following evidence-based recommendations for perioperative pain management after Caesarean Section is associated with better outcomes: analysis of registry data

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After Caesarean Section only 20% of a cohort of 5182 women received 3 recommended treatments for pain. However, this was associated with better pain-related patient reported outcomes.

These elements should be straightforward & inexpensive to integrate into routine care after CS.

Questions we wished to address:

1. Do women undergoing Caesarean Section in the clinical routine receive evidence-based care ?
2. If they did, would this be associated with improved pain-related Patient Reported Outcomes (PROs) ?

Methods

PAIN OUT, an international perioperative pain registry and network provided tools for collecting data about pain related patient reported outcomes and management on the first day after Caesarean Section**.**

We reviewed literature, including guidelines, addressing perioperative pain management of CS and surgery, in general. From these, we selected elements with communality. We assessed whether CARE consisted of **(1) regional anaesthesia with a neuraxial opioid OR general anaesthesia with wound infiltration or TAP block, (2) a full daily dose of a non-opioid analgesic and (3) if pain was assessed by a member of staff. Credit for care was given ONLY if ALL 3 elements were administered (=FULL), otherwise, it was MISSING.** We used linear mixed models to evaluate the effect of implementing the CARE elements with a Pain Composite Score, evaluating pain intensity, its interference with function and side-effects, as the dependent variable.

Results

Between 2010 and 2020, 5182 women from 21 hospitals and 15 countries, qualified for inclusion. Of these: 85.4 % (n=4428) underwent surgery with Regional Anesthesia (RA); 12.4% (n = 641) were operated with General Anesthesia (GA) ; 2.2% (n=113) RA and GA.
Women provided assessment of the pain outcomes **23:00 (19:05-26:06) hours after surgery**.

Question 1: Do women undergoing Caesarean Section in the clinical routine receive evidence-based care? As a general rule, NO

	Recommendations:
A	Intrathecal morphine is the gold standard for post-cesarean pain, providing excellent and prolonged postoperative analgesia. [1,2]
B	Scheduled, full daily doses of paracetamol & NSAID, as a key component of multimodal analgesia after CSection, is strongly recommended, based on high-quality procedure-specific evidence. [2]
C	Use opioids for rescue or when other recommended strategies are not possible. [2]

	In our sample:
A	Of women receiving neuraxial opioids, fentanyl was administered to 63%, alone or in combination with morphine. Morphine or sufentanil, as sole opioids, were administered to 18% and 10% of women, respectively.
B	▪87% of women received at least one non-opioid. ▪80% of these women did not receive a full daily dose of the non-opioid.
C	39% of women reporting worst pain ≥ 7/10 NRS received an opioid.

Question 2: Was administering the 3 elements associated with improved pain related PROs? Yes, this was a small to medium effect size

FULL care in the complete cohort was associated with significantly better outcomes in the Pain Composite Score compared to women receiving MISSING care (β_z =-0.36 [95% CI -0.49 to -0.23, p **< 0.001**). The same applied to the RA group (β_z =-0.36 [95% CI -0.51 to -0.22, p **< 0.001**).
In the RA group, administration of neuraxial morphine was associated with a lower Pain Composite Score, a small effect size.

We assessed **dichotomized** patient reported outcomes in FULL vs MISSING care groups.
Time in severe pain ≥50% on POD1 was reported by 27.5% in FULL vs 54% of women in MISSING care.
Anxiety & **helplessness due to pain ≥4/10** were reported by 24-27% vs 50% of women in FULL vs MISSING.
Satisfaction ≤6/10 was reported by 14% in FULL vs 35% in MISSING.
'**Would have liked to receive more pain treatment**' was reported by 25% in FULL vs 46% in MISSING.
However, a high proportion of women reported poor outcomes in BOTH groups. Further work is needed seeking for strategies to improve this.

References

[1] Sutton & Carvalho B. Optimal Pain Management After Cesarean Delivery. Anesthesiol Clin. 2017 Mar;35(1):107-24
[2] Roofthooft et al PROSPECT guideline for elective caesarean section. Anaesthesia. 2021 May;76(5):665-80.