Prevalence and Association of Postpartum Pain According to the Anesthetic Technique Used: a Retrospective Study

Sobral D, Siaulys M, Oliveira JG, Formiga JP, Andraus L, Rosa ACRC, Mathias L.

Background:

Postpartum pain is a highly prevalent condition that may negatively affect maternal recovery, breastfeeding, mother–infant bonding, and overall quality of life. Although both cesarean delivery and vaginal birth are associated with postpartum pain, differences in pain intensity and contributing factors according to delivery mode and anesthetic technique remain insufficiently explored in large cohorts.

Objectives:

to compare the prevalence and intensity of immediate postpartum pain between cesarean delivery and vaginal birth, and to evaluate associations between pain severity and obstetric factors (episiotomy and perineal lacerations) in vaginal deliveries.

Methods

- This retrospective observational study analyzed medical records of women aged ≥18 years who underwent term vaginal delivery or cesarean section under neuraxial anesthesia or labor analgesia between January 2022 and January 2023 at a tertiary private maternity hospital.
- Pain intensity was assessed using the numeric rating scale (NRS, 0–10) during the first postpartum ward evaluation and categorized as none, mild (1–3), moderate (4–6), or severe (7–10).
- Demographic, obstetric, and clinical variables were collected.
- Comparative analyses between delivery modes and obstetric factors were performed using nonparametric tests, with a significance level of $p < 0.05$.

Results

- A total of 8,061 women were included (6,117 cesarean deliveries and 1,944 vaginal births).
- Overall postpartum pain prevalence: 94.5%.
- No significant difference in pain incidence between cesarean and vaginal delivery (95.3% vs. 94.4%, p=0.08).
- Pain intensity distribution differed significantly between groups (p< 0.0001):

  Cesarean delivery: No pain: 4.6%, mild pain: 15.5%, moderate pain: 64.2%, and severe pain: 15.6%.

  Vaginal delivery: No pain: 5.6%, mild pain: 25.7%, moderate pain: 49.1%, and severe pain: 19.6%.

  Perineal lacerations were strongly associated with increased pain severity,

  Dose–response relationship according to laceration degree (p< 0.0001).

  Episiotomy was not significantly associated with increased pain intensity.

Conclusions

- Postpartum pain is highly prevalent regardless of delivery mode, but its intensity profile differs significantly between cesarean and vaginal births.

- Multimodal neuraxial analgesia appears effective in reducing severe pain after cesarean delivery, whereas perineal trauma is the main determinant of severe pain following vaginal birth.

- These findings highlight the need for individualized postpartum analgesic strategies, particularly for women with significant perineal injury, to improve maternal recovery and quality of life.