Retrospective review of perioperative analgesia for caesarean section comparing intrathecal morphine with combined intrathecal morphine and fentanyl

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Introduction

Since the national shortage of diamorphine in the UK, our trust migrated to the use of intrathecal morphine in neuraxial anaesthesia for caesarean section (CS). The Obstetric Anaesthetists' Associations commentary on the use of fentanyl with morphine was circulated amongst colleagues in Autumn 2021 leading to the increased use of combination opioids [1]. We compared if this change led to any differences in the frequency of intraoperative pain, common opioid side effects, time to first oral opioid request, and the total dose of opioid consumed postoperatively within 24 hours.

Methods

Following approval from the audit department, we reviewed scanned electronic notes of all patients undergoing CS under spinal anaesthesia in August and November 2021. Use of combined spinal-epidural technique and incomplete scanned notes with missing data points were excluded (n = 25). Intraoperative pain was determined by administration of intra-operative analgesic adjuncts and documented intra-operative pain or pressure sensations in the anaesthetic chart. Presence of opioid side-effects were determined by the documented need for treatment. Statistical analysis was performed in R.

Results

After exclusions, a total of 158 patients underwent a CS under spinal anaesthesia using morphine (M), or fentanyl and morphine (FM). The M group had 104 patients with 79% of cases receiving 200 mcg of morphine. The FM group had 54 cases, with 80% of patients receiving 15 mcg fentanyl and 100 mcg morphine.

Incidence of intraoperative pain*

Morphine group **Morphine + Fentanyl group**

25% → 5%

*significant difference, p = 0.005

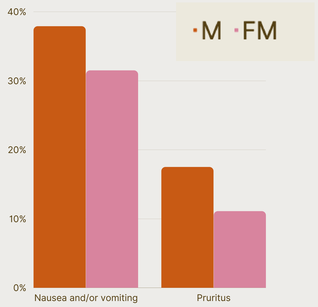


Table 1: Incidence of opioid side effects. M = morphine group, FM = fentanyl and morphine group

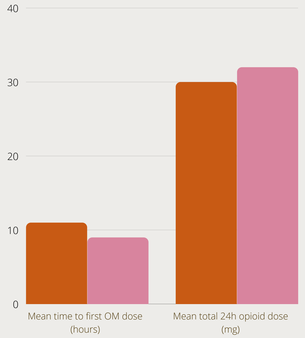


Table 2: Oral morphine sulphate (OM) consumption post-operatively

There were no significant differences between the M and FM groups for common opioid side effects, time to first oral opioid request and total opioid consumption in the first 24 hours

Discussion

The use of combination opioids for CS is a safe effective way of improving intraoperative analgesia. The frequency of intra-operative pain in our department significantly decreased, without significantly increasing the rates of opioid side effects. Importantly despite a lower dose of morphine, post operative analgesia was not compromised. We did not encounter any cases of severe respiratory depression in our study.

There were limitations to our study primarily as data was collected retrospectively; it is possible that part of the effect seen may be attributable to unknown confounding factors. Reassuringly our findings correlate with published research on the topic [2], however large randomised controlled trials are needed to further define this relationship. We also only recorded opioid side effects or intraoperative pain if there was documentation of treatment for these events. This may have reduced their overall incidence, but this effect would've been consistent across groups, therefore unlikely to bias the results.

References:
1. Obstetric Anaesthetists Association 2021. OAA commentary on alternatives to intrathecal and epidural diamorphine for caesarean section analgesia. https://www.oaa-anaes.ac.uk/UI/Content/Content.aspx?ID=4717; 2021.
2. Weigl W, Bieryło A, Wielgus M, Krzemień-Wiczyńska Ś, Kołacz M, Dąbrowski MJ. Perioperative analgesia after intrathecal fentanyl and morphine or morphine alone for cesarean section: A randomized controlled study. *Medicine (Baltimore)*. 2017;96:e8892

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