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Quality of recovery following intrathecal morphine versus diamorphine for elective caesarean delivery at a tertiary centre

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Introduction

The effectiveness of intrathecal (IT) morphine for post caesarean delivery (CD) analgesia is well established internationally as part of a multimodal analgesic regimen. Historically, UK obstetric anaesthetic practice has favoured IT diamorphine over morphine. Our institution adopted IT morphine and fentanyl as an adjuvant to 12-14mg hyperbaric bupivicane for elective CD from 2019 due to diamorphine supply issues. Given the differences in lipid solubility of the two drugs, we hypothesised that IT morphine will have prolonged effects, resulting in superior analgesia compared to IT diamorphine at 24 h post CD but at the expense of worse side effects. Morphine could therefore result in a poorer overall quality of recovery.

Methods

We retrospectively analysed audit data for elective CD under an enhanced recovery programme collected over 6 weeks in early 2017 for the IT diamorphine protocol (300-350mcg); n=119 women, and over 8 weeks in early 2020 for IT morphine (125-150mcg) with fentanyl (15mcg); n=100 women. At 24h post-CD, women were interviewed on the ward using the ObsQoR-10 recovery scoring tool (ObsQoR-11 in 2017, data adjusted for comparison), which includes relevant recovery items (i.e. pain, nausea). Number of nights hospital stay was also recorded.

Results

Clinical characteristics of women were similar between groups. IT morphine+fentanyl was associated with lower ObsQoR-10 scores at 24 h compared to IT diamorphine (Median 73 vs. 80.75; P=0.0181) indicating poorer overall recovery (Table 1, Figure 1). Greater ObsQoR pain quality item scores (high scores indicate less pain) was found with morphine+fentanyl compared to diamorphine at 24 h (Median 6 vs. 5; P=0.002). ObsQoR nausea and vomiting quality item scores were worse (lower score) in the morphine/fentanyl group compared to diamorphine (Median 8 vs. 9; P=0.0313). Number of nights hospital stay was similar between groups: 1 night stay 51% (diamorphine) vs. 50% (morphine/fentanyl).

	Diamorphine	Morphine + Fentanyl	P Value
ObsQoR-10	81	73	0.018*
Pain ObsQoR item	5	6	0.002*
NV ObsQoR item	9	8	0.031*
One night stay (%)	51	50	0.88**

Table 1. Mean ObsQoR scores and number of nights stay.
NV = nausea or vomiting; *Mann-Whitney; **Chi-squared

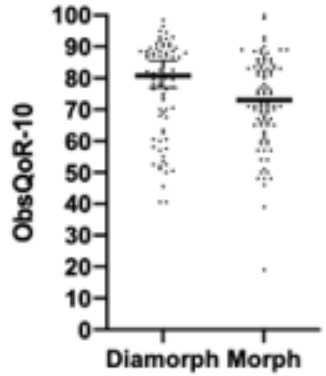


Figure 1. ObsQoR-10 scores

Discussion

Our data supports the hypothesis that IT morphine results in improved analgesia at 24h post-CD compared to diamorphine, but at the expense of worse side effects and overall quality of recovery. This did not however impact length of stay. This is observational data and so can suffer from bias. The morphine data was collected during the COVID-19 pandemic, which could be a confounding factor and is a major limitation. However, we believe IT diamorphine could have advantages over IT morphine for elective CD to promote enhanced recovery programmes. This could challenge standard international practice, but requires higher quality investigation with prospective randomised controlled trials.

References

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