



Assessing the multimodal analgesia approach post caesarean section: diamorphine versus fentanyl and morphine for neuraxial analgesia



Dr. Charlotte Waldon , Dr. Lucy Elliott, Dr. Malinka Vrabtcheva, Dr. Ben Ballisat (Anaesthetic Department, Southmead Hospital, North Bristol NHS Trust)

Introduction

Lower segment caesarean section (LSCS) is one of the most common surgical procedures performed and inadequate postoperative analgesia results in poor patient satisfaction. Reduced pain following LSCS has been shown to enhance recovery through early mobilisation and improved ability to care for the newborn.¹

The anaesthetic department at North Bristol NHS Trust (NBT) have performed a series of Plan-Do-Study-Act (PDSA) cycles from 2015 to 2024. Previous interventions have included promoting dihydrocodeine and the use of surgical transversus abdominis plane (TAP) blocks.

Following the Department of Health and Social Care short supply notification for diamorphine in 2020², NBT switched from using 300mcg diamorphine in neuraxial techniques for LSCS, to using 15mcg fentanyl and 100mcg morphine. The aim of this PDSA cycle was to investigate the effect of this change on post-operative pain and satisfaction scores.

Method

All women having either an elective or emergency LSCS from November 2023 to January 2024 were included in the audit. There were no exclusion criteria other than patient refusal. Women gave verbal consent to participating and the audit was registered with the NBT audit department.

The data collection form completed for each patient had 4 sections:

Section 1: Completed by the anaesthetist at the time of the LSCS
Included patient demographic data, category of LSCS (1-4), mode of anaesthesia (including administration of intrathecal, intravenous or epidural opioids), use of TAP blocks and details of post-operative analgesia, anti-emetics and naloxone.

Section 2: Completed by midwife caring for patient in recovery
Visual Analogue Scores (VAS) for pain at rest and on movement, administration of analgesia, presence of nausea, vomiting or itch and whether any medication had been given for this and whether the patient felt they needed additional medication for these symptoms.

Sections 3+4: Completed by the patient at 12 and 24 hours post-operatively
VAS score for pain, presence of nausea, vomiting or itch and whether medication had been given for this, administration of analgesia, requirement for additional medication for nausea, vomiting or itch for itch and overall patient satisfaction for pain relief (satisfied/neutral/dissatisfied).

Results

- 224, 184, 167, 48 women were audited in 2015, 2017, 2019 and 2023-24 respectively.
- Standards were >95% women satisfied and >95% women with VAS ≤4.
- The majority 92% (44) of the neuraxial interventions 2023-24 consisted of a spinal, with combined intrathecal fentanyl and morphine.
- The incidence of itch and nausea was similar in 2015 (53% itch, 32% nausea), 2017 (58%, 35%), 2019 (59%, 27%). 2023-24 data shows an increased incidence of itch (77%) and nausea (54%). The incidence of vomiting had also increased (25%) compared to 13% in 2019.
- 2023-24 Patient satisfaction at 12 hours post-op was 67%, and at 24 hours was 44%. The % of patients achieving a VAS score ≤4 was 60% at 12 hours, and 27% at 24 hours.

		VAS ≤4 (%)	VAS ≥7 (%)	Satisfaction (%)
Recovery	2015	N/A	N/A	N/A
	2017	87	2	95
	2019	93	3	98
	2023-24	92	0	N/A
12 hours	2015	35	23	83
	2017	65	13	82
	2019	66	13	88
	2023-24	60	10	67
24 hours	2015	55	18	90
	2017	58	11	79
	2019	71	5	93
	2023-24	27	46	44

Discussion

Our results show that since the conversion from neuraxial administration of diamorphine to fentanyl and morphine, patients having a LSCS are experiencing more side effects and there has been a significant decrease in analgesia satisfaction against the agreed standards.

Surgical TAP blocks are now being administered as standard for all patients in our trust having a LSCS under spinal. Results following this change in 2019 showed improvement but not all standards were being met. However, since the enforced change of neuraxial opioid administration in LSCS there has been an even greater reduction in patient satisfaction scores. They have decreased from 88% to 67% at 12 hours, and from 90% to 44% at 24 hours. Additionally, the percentage of VAS scores ≤4 has reduced from 66% to 60% at 12 hours, and 71% to 27% at 24 hours.

In the absence of any additional changes to neuraxial protocol, we are confident in deducing the neuraxial opioid switch can account for these results.

One limitation to these results is the reduced number of patients audited in this PDSA cycle compared to other cycles (48 versus >100). This can be explained by the transition from paper notes to online notes in NBT between audit cycles. This resulted in barriers to staff in using paper data collection forms in addition to the online system. Future cycles should aim to have an online data collection form to account for this.

Following the results of this audit, the pharmacy department at NBT agreed to the use of diamorphine as regular use in obstetrics. The plan is for a further cycle of the audit to be commenced following this change.

References

- Patel SD, Sharawi N, Sultan P. Local anaesthetic techniques for post- caesarean delivery analgesia. Int J Obstet Anesth 2019;40:62-77 (Accessed January 2024)
- Department of Health and Social Care, Supply Disruption Alert, SDA/2020/003, Issued: 26 February 2020, URL: www.cas.mhra.gov.uk/SDA/2020/003 (Accessed January 2024)