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Assessment of anaesthetic management on Patients pain scores for intraoperative in post-anaesthesia care unit after caesarean section

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Abstract
The primary objective of the study is to determine whether there is an association between post-CS patient's PACU pain score and need for first rescue analgesia on intraoperative factors while using technique of anaesthesia [general anaesthesia (GA) or regional anaesthesia (RA)], intraoperative use of different types of intravenous (IV) opioids, surgical time, type of incision and patient grading using American Society of Anaesthesiologists (ASA).
The PACU parameters for data collection included NRS at time zero, then at 30, 45 and 60 min and time to first rescue analgesia and time taken to reach the score of <4 after rescue analgesia and occurrence of any side effects.
This study showed that in patients undergoing CS under RA, the need for rescue analgesia was less compared to patients operated under GA in the initial 30 min in PACU. In addition, patients who were operated under GA and received IV morphine as intraoperative analgesia had better pain scores compared to patients receiving nalbuphine or tramadol.

Keywords: anaesthetic management, pain scores, intraoperative, caesarean section

Introduction
Caesarean section (CS), also known as C-section or caesarean delivery, is the use of surgery to deliver babies. A caesarean section is often necessary when a vaginal delivery would put the baby or mother at risk. This may include obstructed labour, twin pregnancy, high blood pressure in the mother, breech birth, or problems with the placenta or umbilical cord. A caesarean delivery may be performed based upon the shape of the mother's pelvis or history of a previous C-section. A trial of vaginal birth after C-section may be possible. The World Health Organization recommends that Caesarean section be performed only when medically necessary. Some C-sections are performed without a medical reason, upon request by someone, usually the mother [1].
A C-section typically takes 45 minutes to an hour. It may be done with a spinal block, where the woman is awake or under general anesthesia. A urinary catheter is used to drain the bladder and the kin of the abdomen is then cleaned with an antiseptic. An incision of about 15 cm (6 inches) is then typically made through the mother's lower abdomen. The uterus is then opened with a second incision and the baby delivered. The incisions are then stitched closed. A woman can typically begin breastfeeding as soon as she is awake and out of the operating room. Often, several days are required in the hospital to recover sufficiently to return home [1].
C-sections result in a small overall increase in poor outcomes in low-risk pregnancies. They also typically take longer to heal from, about six weeks, than vaginal birth. The increased risks include breathing problems in the baby and amniotic fluid embolism and postpartum bleeding in the mother. Established guidelines recommend that caesarean sections not be used before 39 weeks of pregnancy without a medical reason. The method of delivery does not appear to have an effect on subsequent sexual function [2].
In 2012, about 23 million C-sections were done globally. The international healthcare community has previously considered the rate of 10% and 15% to be ideal for caesarean sections. Some evidence finds a higher rate of 19% may result in better outcomes. More than 45 countries globally have C-section rates less than 7.5%, while more than 50 have rates greater than 27%. Efforts are being made to both improve access to and reduce the use of C-section. In the United States as of 2017, about 32% of deliveries are by C-section. The surgery has been performed at least as far back as 715 BC following the death of the mother with the baby occasionally surviving. Descriptions of mothers surviving date back to the 1500s. With the introduction of antiseptics and anesthesia in the 1800s survival of both the mother and baby became common [3].
Both general and regional anaesthesia (spinal, epidural or combined spinal and epidural anaesthesia) are acceptable for use during Caesarean section. Evidence does not show a difference between regional anaesthesia and general anaesthesia with respect to major outcomes in the mother or baby. Regional anaesthesia may be preferred as it allows the mother to be awake and interact immediately with her baby. Compared to general anaesthesia, regional anaesthesia is better at preventing persistent postoperative pain 3 to 8 months after caesarean section. Other advantages of regional anesthesia may include the absence of typical risks of general Anesthesia: pulmonary aspiration (which has a relatively high incidence in patients undergoing Anesthesia in late pregnancy) of gastric contents and esophageal intubation. However, one

trial found no difference in satisfaction when general anaesthesia was compared with either spinal anaesthesia [4].

Regional anaesthesia is used in 95% of deliveries, with spinal and combined spinal and epidural anaesthesia being the most commonly used regional techniques in scheduled Caesarean section [5]. Regional anaesthesia during Caesarean section is different from the analgesia (pain relief) used in labor and vaginal delivery. The pain that is experienced because of surgery is greater than that of labor and therefore requires a more intense nerve block.

General anesthesia may be necessary because of specific risks to mother or child. Patients with heavy, uncontrolled bleeding may not tolerate the hemodynamic effects of regional anesthesia. General anesthesia is also preferred in very urgent cases, such as severe fetal distress, when there is no time to perform a regional anesthesia.

The primary objective of the study is to determine whether there is an association between post-CS patient's PACU pain score and need for first rescue analgesia on intraoperative factors while using technique of anaesthesia [general anaesthesia (GA) or regional anaesthesia (RA)], intraoperative use of different types of intravenous (IV) opioids, surgical time, type of incision and patient grading using American Society of Anaesthesiologists (ASA).

Methodology

The study is conducted in Anugrah Narayan Magadh Medical College and Hospital in Surgery department. The approval of ethical committee had been taken along with the consent from the patients were also taken. Total 50 females having are group of 22-40 year were enrolled in to the study.

Inclusion criteria

Females having a pregnancy of at least 26 weeks gestation with a single uncompromised fetus and uncomplicated pregnancy.

Exclusion criteria

Females having foetal distress, toxaemia of pregnancy, CVS/CNS disorders, neuromuscular diseases (e.g. myopathies and neuropathies), hypovolaemia, acid base disturbances and electrolyte imbalance, obese, infection on the back, on anticoagulant therapy and vertebral anomaly.

A thorough and detailed history of present and past medical illness, past history of anaesthetic exposure with concomitant history of drugs taking in pre-operative period was also recorded. Routine investigation including coagulation profile was done. General and systemic examinations of all the patients were done.

The patients having a working labour epidural in place and coming for emergency CS is to initially give a bolus of10 ml of 2% xylocaine followed by titrated doses of 0.5%bupivacaine (maximum 10 ml) till a block of thoracic level between T5 and T6 is achieved as assessed by loss of temperature sensation. These patients in the PACU and in the ward for the next 12 h are given as an infusion of local anaesthetic and fentanyl (bupivacaine 0.1% with fentanyl 2 µg per ml of local anaesthetic solution).

The PACU parameters for data collection included NR Sat time zero, then at 30, 45 and 60 min and time to first rescue analgesia and time taken to reach the score of <4after rescue analgesia and occurrence of any side effects.

Patients were informed regarding the assessment of pain score using numerical rating scale (NRS) from 0 to 10, where 0 is no pain and 10is the worst possible pain. In addition, mild pain was taken as NRS of 0–3, moderate as NRS from 4 to 6 and severe as NRS from 7 to 10. Side effects assessed were sedation, nausea, vomiting, pruritus, respiratory depression and low oxygen saturation of <94%.

Table 1: Demographic Data

Parameter	Observations
Age	20-40 years
Weight	46– 58 kg
ASA I	19
ASA II	21
ASA III	10
General Anaesthesia	8
Regional Anaesthesia	42
Total Cases	50
Duration of Surgery	1 to 1.5 hr: 45 More than 1.5 hr: 5

Table 2: Assessment of Pain with NRS

Interval	Immediate	30 min	45 min	60 min
No pain Cases	35	32	28	26
Mild Pain cases	7	14	14	20
Moderate pain cases	3	1	5	2
Severe Pain Cases	1	2	1	1
Moderate to severe pain cases	4	1	2	1
Total	50	50	50	50

Immediate pain in the recovery can be due to intraoperative factors leading to inadequate pain control when patients are first assessed in the PACU and subsequent pain scores on overall pain management in the PACU. However, researchers examining pain management have focused on specfic stages of patient care [6], which often did not include intraoperative factors which may have an association on pain scores in PACU after abdominal surgery like CS.

Previous literature has shown an association with type of surgical incision and severity of pain [7], however, this study did not observe any statistically significant difference in the severity of pain as assessed by NRS scoring in terms of the type of incision.

When investigating IV analgesics administered in the OR for patients operated under GA, nalbuphine was found to be the most commonly used IV opioid followed by tramadol and morphine. Patients receiving nalbuphine and tramadol had statistically signifcant higher mean pain score on immediate assessment and at 30 min assessment in the PACU compared to patients receiving morphine; however, no difference was found beyond this time. One meta-analysis has shown comparable analgesic efficacy of nalbuphine to other opioids [8].

Pain management does not only vary between hospitals but also between wards within the same hospitals [2, 4]. PACU isa very critical area where pain needs to be assessed and managed properly. A number of studies report not only pain intensity but also pain relief in terms of "escape criteria," which is the need and delivery of rescue analgesia [2]. The

results of this study revealed that all patients having NRS of >4 received rescue analgesia which took 3–15 minutes for NRS to become <4.

Conclusion

This study showed that in patients undergoing CS under RA, the need for rescue analgesia was less compared to patients operated under GA in the initial 30 min in PACU. In addition, patients who were operated under GA and received IV morphine as intraoperative analgesia had better pain scores compared to patients receiving nalbuphineor tramadol.

In future, anaesthesiologists should get more and more intricate with the patient care during the preoperative visit, patient preparation and subsequent postoperative care while actively getting out of their perceived role of being restricted to immediate preoperative and intraoperative care. Our study strengthens this viewpoint and these endeavours may result in greater satisfaction among the patients towards perioperative anaesthesia care.

References

1. Pregnancy Labor and Birth. Office on Women's Health, U.S. Department of Health and Human Services. 1 February 2017. Archived from the original on 28 July 2017. Retrieved 15 July, 2017.
2. Yeniel AO, Petri E. Pregnancy, childbirth, and sexual function: perceptions and facts. International Urogynecology Journal. 2014; 25(1):5-14. doi:10.1007/s00192-013-2118-7. PMID 23812577
3. Moore, Michele C, Costa, Caroline M. de Cesarean Section: Understanding and Celebrating Your Baby's Birth. JHU Press. p. Chapter 2, 2004. ISBN 9780801881336.
4. Afolabi BB, Lesi FE. Regional versus general anaesthesia for Caesarean section. Cochrane Database Syst Rev, 2012. 10:CD004350. doi:10.1002/14651858.CD004350.pub3. PMID 23076903.
5. Bucklin BA, Hawkins JL, Anderson JR, Ullrich FA. Obstetric anesthesia workforce survey: twenty-year update. Anesthesiology. 2005; 103(3):645-53. doi:10.1097/00000542-200509000-00030. PMID 16129992
6. Ravaud P, Keïta H, Porcher R, Durand-Stocco C, Desmonts JM, Mantz J. Randomized clinical trial to assess the effect of an educational programme designed to improve nurses' assessment and recording of postoperative pain. Br J Surg. 2004; 91:692-8.
7. Mimica Z, Pogorelic Z, Perko Z, Srsen D, Stipic R, Dujmovic D. Effect of surgical incision on pain and respiratory function after abdominal surgery: A randomized clinical trial. Hepatogastroenterology. 2007; 54:2216-20.
8. Zeng Z, Lu J, Shu C, Chen Y, Guo T, Wu QP, *et al*. A comparison of nalbuphine with morphine for analgesic effects and safety: Meta-analysis of randomized controlled trials. Sci Rep. 2015; 5:10927.
9. Carr EC. Exploring the effect of postoperative pain on patient outcomes following surgery. Acute Pain. 2000; 3:183-93.