ACCEPTANCE OF AN ANALGESIC SUPPOSITORY FOR POST-OPERATIVE ANALGESIA IN CAESAREAN SECTION

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ABSTRACT

BACKGROUND

The aim of this study is to analyse the acceptance of the rectal route of Diclofenac for postoperative analgesia in post caesarean patients as second dose analgesia after they had been given pre-emptive analgesia with rectal diclofenac. The rectal route of drug administration has many advantages over other alternate routes. Rectal route may not be accepted by most individuals in spite of its well established advantages. In this study, all patients were given prior information regarding the advantages of rectal diclofenac. There are only a few studies regarding the acceptance of the rectal route of drug administration. Awareness of the reasons for not preferring this route may help improve the acceptance of rectal drug delivery in the future.

MATERIALS AND METHODS

An analytical, questionnaire-based study was done on 100 ASA 1 and 2 patients who were undergoing elective caesarean sections under lumbar subarachnoid block. The study was conducted over a period of 6 months in a tertiary care setting. All cases were given preoperative counselling regarding the advantages of rectal diclofenac. Soon after lumbar subarachnoid block was administered in the lateral decubitus position, first dose of diclofenac was administered rectally. At the time patient complained of pain, she was asked about the requirement of further analgesia and if so the preferred route of administration. The number of patients who opted for repeat dose of rectal suppository was noted and the reason for denial of a repeat dose per rectum was recorded.

RESULTS

100 patients were given pre-emptive rectal diclofenac suppository for postoperative pain relief; 7 patients did not require second dose analgesia. Of the remaining 93 patients 21 patients opted for the rectal route, 68 patients opted for oral route and 4 patients opted for intramuscular route. Of the reasons cited for non-acceptance of second dose rectal diclofenac, the commonest cause put forward was lack of privacy.

CONCLUSION

Ensuring privacy, especially in the postoperative period, for the postpartum patient will improve the acceptance of rectal diclofenac. Patient education and information leaflets may also improve acceptance of an alternate route of drug delivery.

KEYWORDS

Analgesic, Suppository, Postoperative Analgesia, Caesarean Section.

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BACKGROUND

Pain is one of the most feared symptoms, which a man is trying to alleviate and conquer since ages. Although effective pain control is essential for optimal care of patients, despite advances in knowledge of pathophysiology, pharmacology and development of more effective techniques for postoperative pain control, many patients continue to experience considerable discomfort postoperatively. Postoperative pain is unique by its transitory nature, which makes it more amenable to treatment.

Diclofenac, being an NSAID is thought to act by inhibiting prostaglandin synthesis.¹

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Hence, its efficacy in post-caesarean analgesia by the reduction of pain from uterine contractions and surgical wound pain.² This analgesic action prevents central sensitisation. A centrally acting anti-nociceptive effect has been postulated.³ An interaction with the central opioid system has also been suggested.⁴ Thus, diclofenac abolishes both visceral and somatic pain.

Drug administration through the rectal route has greater bioavailability.⁵ The rectal route avoids gastric irritation caused by oral drugs.⁶ The present day slow release rectal suppositories help maintain blood levels for a longer time.⁷ The only hitch encountered in the rectal route is its acceptance. This does not pose a great problem when it is pre-emptively used in patients undergoing Caesarean sections, as they are subjected to bladder catheterisation preoperatively and vaginal toilet postoperatively. But acceptance levels of second dose of rectal suppository, even though has many advantages over traditional routes like oral, intravenous, intramuscular is not yet studied. This study was conducted to find out the acceptance of post-operative rectal suppository for analgesia after they have been administered pre-emptive analgesia rectally.

MATERIALS AND METHODS

This was an analytical study conducted in 100 ASA 1 and 2 patients undergoing elective lower segment caesarean section under spinal subarachnoid block. This study was conducted over a period of 6 months after obtaining ethical review board approval and informed consent from each patient. A proforma was made prior to starting the study; 100 patients who consented to be administered diclofenac suppository as pre-emptive analgesia was included in the study. The second dose of rectal diclofenac was meant to be self-administered by the patient when she felt pain (McGill's pain score - 1). Preoperative counselling was given regarding the advantages of the rectal route of administration over other routes to all patients as well as the method of self-placement of rectal suppository. They were assured of the choice of other modes of analgesia for postoperative pain if they found self-administration of rectal diclofenac inconvenient. Patients with history of coexistent illnesses like hypertension, diabetes mellitus, bronchial asthma, allergy to diclofenac or other NSAIDs, patients with lesions in or bleeding from anal canal were excluded from the study.

All patients were subjected to thorough preoperative assessment. They were kept nil orally for 6 hours prior to surgery. Baseline pulse rate, blood pressure and respiratory rate were recorded. A wide bore intravenous access was established. Premedication with Injection ranitidine 50 mg and Injection metoclopramide was given 30 minutes before surgery. Lumbar subarachnoid block was administered in the standard method in the lateral decubitus position. Immediately after lumbar subarachnoid block was administered with the patient in the same position, polyethylene glycol based diclofenac suppository 100 mg was moistened with a water soluble lubricant and inserted per rectally.

One hour after administration of spinal subarachnoid block was taken as 'zero hours.' Before shifting the patient at the time of vaginal toilet, it was visually confirmed that the rectal suppository had not come out. Postoperative analgesia was recorded using McGill pain score where the patient reported whenever she got slight pain (McGill score - 1). At the time patient complained of pain, she was asked about the requirement of further analgesia and if so the preferred route of administration which could be either oral, intramuscular or self-administered rectal. The number of patients who opted for repeat dose of self-administered rectal suppository was noted and the reason for denial of a repeat dose per rectum was recorded.

RESULTS

Figure 1. Age Distribution of Patients

Out of the 100 patients, 24 patients (24%) belonged to 20 - 25 years' age group; 63 patients belonged to 26 - 30 years' age group and 13 patients belonged to 31 - 35 years. Of this 74 patients were undergoing repeat caesarean section, whereas 26 were undergoing primary caesarean section.

Figure 2. Body Mass Index Distribution of the Patients

9 patients out of the 100 were below normal BMI (< 18.5), while 18 patients were overweight/obese (BMI ≥ 25); 73 women fell in the normal BMI range (18.5 - 24.9).

Hours of Analgesia

The mean hours of analgesia in the participants was 16.43 hours Standard Deviation ±4.82 hrs. The hours of analgesia experienced ranged from a minimum of 10 hours to a maximum of 24 hours, after which the second dose analgesic had to be administered.

Number of Patients	Mean	Standard Deviation	95% Confidence Interval
100	16.43	4.82	16.43 ± 4.82

Table 1. Hours of Analgesia Obtained

Acceptance of Second Dose of Rectal Analgesia

Out of the 100 patients 7 patients did not demand a second dose of analgesic, as they did not have significant pain.

The remaining 93 patients were given a choice of self-administered rectal diclofenac suppository, oral diclofenac tablet if they had started oral feeds or intramuscular diclofenac preparation.

Of the remaining 93 patients 21 patients opted for the rectal route, 68 patients opted for oral route and 4 patients opted for intramuscular route.

Route of Administration	Rectal	Oral	Intramuscular
Number of patients who opted for repeat analgesia	21	68	4

Table 2. Route of Preference of Second Dose of Analgesic

Figure 3

Out of the 93 patients who needed second dose analgesia, 21 of them (23%) opted for self-administered rectal suppository; 68 patients opted for the oral route, as they had already started taking oral feeds.

Reasons Cited for not Preferring the Rectal Route as Second Dose

Reasons Cited	Number of Patients
Bleeding per vaginum	14
Lack of confidence in successful placement	37
Fear of infection	5
Lack of privacy	43
Oral feeds initiated	28
Faith in intramuscular route	4
Total	131

Table 3. Reasons Cited for Not Preferring the Rectal Route as Second Dose

Some patients (around 40%) cited more than one reason for not preferring self-administered rectal dose as the second dose analgesia. The most common reason (46.2%) cited was lack of privacy, as most of these patients were allotted beds in the general inpatient wards.

Number of Patients who would opt for per rectal Analgesia as their first Analgesic Dose in Subsequent Surgeries

92 patients were of the opinion that they would opt for per rectal analgesia as their first analgesic dose in subsequent surgeries.

DISCUSSION

The immediate postpartum period is very important for mother child bonding.⁸ This is the time for initiation into breast feeding, early initiation having definite advantages.⁹ So, it is very distressing if it is hampered by postoperative pain. Options for postoperative analgesia are opioids, NSAIDs, advantages of Diclofenac (Breast milk).

Pre-emptive analgesia is a method of antinociceptive treatment before the onset of painful stimuli with an aim to prevent sensitisation of the nervous system to subsequent stimuli that could amplify pain.¹⁰

In a surgical setting, the timing of noxious stimulus is known earlier and therefore it is the ideal setting to practice pre-emptive analgesia. Also, pre-emptive analgesia brings down the postoperative analgesic requirement.^{11,12}

The rectal route of drug absorption is almost similar to the absorption from the upper part of the gastrointestinal tract.¹³ The venous drainage of the lower part of the rectum is unique, in that it bypasses the enterohepatic circulation, thus making more of the active drug available in circulation.

T-max of rectal diclofenac is reached in 1 hour, which is faster than the oral route. Advantage of polyethylene glycol based suppository is that it provides a rapid release of the drug, as its vehicle of transport is water soluble and water miscible.¹⁴

In our study, counselling was given to the expectant mothers before the Caesarean section regarding the advantages of the rectal route of diclofenac administration for postoperative pain relief. Patients who consented to take part in this study were convinced about the longer duration of analgesia obtained by this route, lesser side effects and lesser secretion of the drug through breast milk. The time of placement of the suppository could also have acted as a deciding factor, as no new procedure needed to be undertaken for its placement and the placement was done by the Anaesthesiologist. The method of self-administration in the postoperative period was also discussed with the patients. They were made aware that alternate modes of analgesia of their choice would be available to them, if they found rectal placement difficult.

21 patients (23%) took rectal diclofenac as second dose of analgesic and were very satisfied with the results; 68 patients opted for oral route (73%). The reasons cited by these patients were that they lacked privacy for placement of suppository, as they were admitted in the general inpatient ward; 37 patients cited that they lacked confidence in correct placement of suppository, as they had not done it before which was added on by the incompatible environment for placement; 28 patients had already started oral feeds, which included other oral medications and therefore opted for oral route; 14 patients refused to place rectal suppository as they had bleeding per vaginum, which they might have found messy. Fear of infection was also a deterrent factor cited by 5 patients; 4 patients opted for the invasive and painful intramuscular analgesic route, possibly because they had more faith in this mode of administration. Some patients cited more than 2 reasons for deferring the second dose rectal suppository. Hence, it was not possible to accurately calculate the relative contribution of each of the reasons.

92 patients (92%) who participated in the study opined that they would prefer rectal diclofenac suppository, administered by health care professionals as pre-emptive analgesia for postoperative pain relief for any subsequent surgeries they may undergo. This may again possibly be due to the avoidance of the hassle of self-administration of rectal suppository.

Of the 72 patients, among the 93 who opted for other routes of second dose analgesia 63 patients (87.5%) said that they would have opted for rectal diclofenac as second dose analgesic if it was administered by a health care professional.

Since all the patients were placed in the general inpatient ward, lack of privacy was one of the major reasons for non-acceptance of rectal route for second dose analgesia. Thus, it is seen that hospital environment plays a decisive role in the acceptance of treatment modalities, which is a major contributor to satisfaction levels and wellbeing of the patient.¹⁵

CONCLUSION

Pre-emptive rectal diclofenac suppository is an effective method of tackling post-operative pain. Its acceptance level when administered by a health care professional is high, whereas self-administration of rectal diclofenac suppository as a second dose analgesic is low. The common reasons of non-acceptance are lack of privacy and low confidence regarding the correct placement. Ensuring privacy, especially in the postoperative period for the postpartum patient will improve the acceptance of rectal diclofenac. Patient education and information leaflets may also improve acceptance of an alternate route of drug delivery.

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