

Use of rectal Diclofenac as an adjunct to spinal analgesia after caesarean section

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Abstract

Objective: 1) To evaluate the analgesic efficiency of Rectal Diclofenac for post operative pain relief after caesarean section. 2) To evaluate number of doses of analgesics required for post operative pain relief after caesarean section after using rectal diclofenac. **Method:** The study was conducted at Govt Medical College, Akola during Dec 2017 March 2018. 100 females posted for elective and emergency caesarean section of ASA Grade I and II were selected for study. Of those 50 were allocated in study group and 50 in control group. Study group given rectal diclofenac suppository and control group were given rectal glycerine suppository postoperatively. Pain was assessed with visual analogue scale (VAS) at different postoperative interval. Analysis was done by using SPSS. **Results:** Both groups were comparable in demographic data. The mean time of first dose of analgesia required was 7.8 hrs in study group and 3.48 hrs in control group, means rectal suppository increases the duration of analgesia. The number of analgesia doses required during 48 hrs postoperatively were 2.88 while in control group 4.34. while in study group only 10% patient woke up at night due to pain and in control group 48% patient woke up. **Conclusion:** This study concludes that rectal diclofenac suppository is effective and safe for postoperative pain relief in post caesarean section patients. Quality of analgesia achieved was better with diclofenac. It has got long duration of action postoperatively. It can be administered easily by noninvasive route without any side effect.

Key Words: Analgesia, Diclofenac, postoperative pain.

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INTRODUCTION

There is progressive increase in caesarean deliveries across the world; in developed as well developing countries.¹ In India in tertiary care hospital on an average 36.41% deliveries occur by caesarean.² All patients are anxious about their operative procedures because of fears of operative and postoperative pain. Various methods are used to relieve the pain like use of opioids, use of NSAIDs, regional blocks. Opioids are most commonly used drugs for postoperative pain relief. But these drugs

cause side effects like nausea, vomiting, excessive sedation, respiratory depression which are dangerous.³ Diclofenac is a potent non-steroidal anti-inflammatory agent (NSAID) which has both analgesic and anti-inflammatory properties.⁴ The present study was undertaken to evaluate the analgesic efficiency of rectal diclofenac for postoperative pain relief after caesarean section.

MATERIALS AND METHODS

The present study was conducted at Government Medical College, Akola. Total 100 female undergoing elective or emergency lower segment caesarean section of ASA Grade I and II were selected for study. After obtaining written and informed consent females were enrolled in the study.

Exclusion Criteria

1. Patients with local sepsis.
2. Patient with known allergy to local anaesthetics or non-steroidal anti-inflammatory drugs. (NSAIDs)

3. Patients with bleeding disorders.
4. Patients with severe spinal deformities and neurological diseases.

Patient belonging to ASA grade I and II for lower section caesarean section were selected who were to be operated under spinal anaesthesia. Patient were allocated in two groups. Study groups were allocated 50 females and control group were allocated with 50 females by simple random technique. At the end of operation after vaginal cleaning study group patients (Group I) received Diclofenac sodium suppository 100mg rectally while control group patients (Group II) received Glycerine suppository rectally. At this time blood pressure, pulse rate, respiratory rate and visual analogue score for pain was recorded. Then pain was assessed using standard 10cm visual analogue scale at rest and at movement at 1, 2, 4, 6, 9, 12, 24 and 48 hours. Duration of analgesia was assessed till the demand of 1st dose of analgesic. Usually 1st dose is administered when VAS is 5 to 6. Within above period, number of doses of analgesics required for

post-operative pain relief was also assessed. At same time nausea, vomiting, sedation, respiratory depression assessed.

Statistical Analysis: All values are reported as mean ± SD. Unpaired two-tailed Student ‘t’ test was used to assess the significance of the differences in values of the parameters in cases and controls. Differences were considered statistically significant at a probability value P<0.05. All statistical analyses were performed with IBM SPSS Statistics version 19.0 (IBM Corporation, Somers, NY) {6}.

RESULTS

Table 1: Distribution of patients according to surgical procedure

Lower segment caesarean section	Study Group (I)	Control group (II)
Emergency	17(34%)	19(38%)
Elective	33(66%)	31(62%)
Total	50(100%)	50(100%)

Table 2: Pain VAS score at 0, 1, 2, 4, 6 and 9 hrs

Pain score	At 0 hrs		At 1 hrs		At 2 hrs		At 4 hrs		At 6 hrs		At 9 hrs	
	Grp I	Grp II	Grp I	Grp II	Grp I	Grp II	Grp I	Grp II	Grp I	Grp II	Grp I	Grp II
0	2	-	-	-	-	-	-	-	-	-	-	-
1	22	2	11	-	2	-	-	-	-	-	-	-
2	21	48	32	5	21	-	7	26	1	23	15	-
3	4	-	7	45	22	4	21	-	9	27	14	21
4	1	-	-	-	3	45	17	-	17	-	4	14
5	-	-	-	-	2	1	4	15	18	-	14	8
6	-	-	-	-	-	-	1	9	4	-	3	7
7	-	-	-	-	-	-	-	-	1	-	-	-

Table 3: Requirement of 1st dose of analgesia in both the Groups

Time hrs	Study group	Control group
2-3	-	-
3-4	-	26 (52%)
4-5	2 (4%)	24 (48%)
5-6	-	-
6-7	13 (26%)	-
7-8	7 (14%)	-
8-9	9 (18%)	-
9-10	15 (30%)	-
10-11	1 (2%)	-
11-12	3 (6%)	-
Mean	7.8±1.74	3.4±0.5

Table 4: Number of analgesic doses required during 48 hrs.

No of doses	Study group	Control group
0	-	-
1	-	-
2	11 (22%)	-
3	34 (68%)	-
4	5 (10%)	33 (66%)
5	-	17 (34%)

Age range of the patients were 18 to 32 years. In study Group (Group I) mean age with SD was 22.64 ±2.79 while in control group (Group II) it was 22.42± 2.85 years. Table (1) shows distribution of patients according to surgical procedure. 33 (66%) in study group and 31 (62%) in control group underwent emergency LSCS. By applying Chi square test there was no statistically significant difference between two groups. (X²= 0.1736, P > 0.05) Table (2) shows pain VAS score at 0, 1, 2, 4, 6 and 9 hrs and table (3) shows requirement of 1st dose of analgesia in both the Groups. At 0 hr in both the groups no patient had pain score more than 4. So both groups were comparable. At 1 hr there was no patient who had pain score more than 4 but from study group those who had pain score 4 at 0 hr were shifted to pain score less than 4. That shows the effect of diclofenac suppository on pain. At the end of 2 hr in study group only 4 (8%) patient had pain score more than 4 while in control group 28 (56%) patients had pain score more than 4. Those who have score more than 5 received analgesic dose. So in

study group only 2 received analgesic dose while in control group 27 received analgesic dose. At the end of 4 hrs from study group only 5 (10%) patients had pain score more than 4 at rest, while in control group 24 (48%) patient had pain score more than 4 at rest. That means 14(28%) patients from study group and 24 (48%) patients from control group received dose of analgesia. At 6 hrs most of the patients had already received analgesic doses and so pain score at rest and movement in this group had pain score less than 5. At 9 hrs in most of the patients had already received analgesic doses and so pain score at rest and movement in this group had pain score less than 5 compared to study group. In study group only 2 (4%) patients required analgesia within 4 to 5 hrs and almost 96% requires analgesia after 6 to 7 hrs. in control group 26 (52%) required 1st dose of analgesia within 4 to 5 hrs. This is also statistically highly significant ($X^2= 16.87$, $P < 0.001$) this shows that rectal suppository increases analgesic period and required less number of analgesic doses. Table (4) showing number of analgesic doses required during 48 hrs. In study group most i.e. 45 (90%) required less than 4 doses while in control group all have required more than 4 doses. This shows that rectal suppository decreases the requirement of analgesia doses approximately by 50%. It was statistically highly significant. ($X^2= 13.39$, $P < 0.001$) The mean number of doses of analgesia required during 48hrs were 2.88 ± 0.55 in study group and that of in control group were 4.24 ± 0.46 . It was almost double.

DISCUSSION

In present study first dose of analgesia required was 7.8 hrs + 1.74 in study group and that of control group it was 3.48 + 0.50 which are similar to the finding to the M E Bone⁵ *et.al* in which they found that mean time for analgesia after diclofenac suppository as 7.3hrs. Also A R Dennis⁶ *et.al* in their study found that mean time for first dose of analgesia get increased by 5 hrs in patients

receiving diclofenac suppository. In present study mean number of doses of analgesia required during 48hrs were 2.88 ± 0.55 in study group and that of in control group were 4.24 ± 0.46 . It was almost double. Which are similar to the findings given by Jayne A searles *et.al*⁷, H. Ejnell⁸ *et. al* and R. M Scott⁹ *et. al*.

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