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Research Article

**COMPARISON BETWEEN INTRAVENOUS & INTRATHECAL
BETAMETHASONE TO REDUCE THE PAIN AMONG
FEMALES AFTER CESAREAN SECTION****Dr Alina Tariq, Dr Hamza Rashid, Dr Nigum Irshad**
Lahore General Hospital, Lahore**Abstract:**

Objective: Improper relief of the pain after surgery of cesarean section can be the reason of the majority of complications. In this current research work, we assessed the impact of the Intrathecal Betamethasone as an attachment to the bupivacaine on the pain after surgery in the patients who are experiencing Cesarean Section.

Methodology: Total 99 females who were undergoing Cesarean Section were the members of one of the 3 groups. Group-1 was the control group who received the IB Group, the patients of the Group-2 obtained IB plus stabilizer free betamethasone & the patients of Group-3 obtained in vein betamethasone with the IB. After the operation, the administration of the diclofenac in the suppository form carried out as requires for analgesia. A blind observer recorded the diclofenac needs after the surgery, time to 1st administration of analgesia and VAS (Visual Analogue Scores) for pain.

Results: The requirements of the supplemental dose of analgesic with the diclofenac for 1st twenty-four hours were very less in two groups who obtained the betamethasone in comparison with the group of control. The average duration of after surgery analgesia was 336.80 ± 86.0 minutes in the group of Intrathecal & 312.40 ± 106.0 minutes in the group of intravenous in comparison with the 245.40 ± 93.0 minutes in the group of controls. VAS scores were very less at four hours and 6 hours after the operation in groups who obtained betamethasone as compared to the group of controls. The score of pain at six hours after Cesarean Section were high in intravenous group in comparison with intrathecal group. VAS scores were not different at twelve & twenty-four hours after the Cesarean Section between all groups.

Conclusion: Intrathecal Betamethasone decreases the pain and reduced the needed dosage of the diclofenac within twenty-four hours after Cesarean Section.

KEY WORDS: Intrathecal Betamethasone, Analgesic, Dosage, Cesarean Section, Diclofenac, Visual Analogue Scores.

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INTRODUCTION:

Dr. Improper relief in the pain after surgery particularly after CS can enhance the expenses of health care services, delay in the bonding of mother and baby, rise in the duration of the stay in the hospitals and it can reduce the satisfaction of the patients. The recovery can be late due to continuous pain which have the negative influence on the healing, therefore the timely treatment of the pain with the use of analgesics is much important. Different analgesic procedures are in use to provide the relief from pain after the surgery. Multi-modal procedures to analgesia after surgery, with utilization of various medicines acting via various routes have led to very low amount of the side effects and the better analgesia in therapy of the pain after surgery. Other way to develop the analgesia with the help of steroids is the influence on the GABA receptors in spinal & supra-spinal sites.

Various procedures of the administration of steroids are parenteral, local infiltration at site of surgery, as an adjuvant in nerve blocks, & blockade to central-neuraxial nerves. Proofs shows that intrathecal steroids are very effective for the treatment of the pain of chronic nature whereas there are some research works to show the effectualness of the intrathecal steroids for administration of the pain after the surgery up till now. This research work aimed to evaluate the analgesic advantages of the IBM on the relief of pain after surgery of Cesarean Section.

METHODOLOGY:

This study was conducted in the Lahore General Hospital, Lahore, Ethical committee of the hospital gave the permission for this research work and we took the consent of 99 patients who were undergoing Cesarean Section were the part of this research work. The age of the females was from 20 to 40 years.

Patients suffering from any other serious disease or taking medicines were not the part of this research work. VAS scoring was in use for the description of the pain, we described this scale to each patient. The allocation of the patients carried out into three different groups, Group-1 (healthy control) patients obtained saline 0.50 milliliter with the injection of intrathecal of heavy bupivacaine 0.50% milliliter 3 plus 0.50 milliliter of 0.90% saline, Group-2 (IT) patients obtained saline 0.50 milliliters intravenously with injection of intrathecal of heavy bupivacaine 0.50% 3 milliliters plus 0.50 milliliters stabilizer free betamethasone four 4 mg/mL & patients of Group- 3 (IV) obtained betamethasone 0.50 milliliters intravenously (four mg/mL) with injection of intrathecal of heavy bupivacaine 0.50% 3 milliliters plus 0.50 mL of 0.90% saline.

The monitoring of the MAP (Mean Arterial Pressure) & HR (Heart Rate) carried out before and after anesthesia. We recorded the VAS scores at four, six, twelve & twenty-four hours after the injection of intrathecal. We also measured the adverse impacts within twenty-four hours after the surgery. SPSS V.16 was in use for the statistical analysis of the collected information. Kolmogorov-Smirnov method was in use to assess the variable's distribution. Average and SD were in use for the expression of the value. ANOVA method was in use for the comparison of different values. P value of less than 0.050 was the significant one.

RESULTS:

We evaluated the data of total ninety-nine patients. The traits of patients are comparable with respect to reason of surgery, age, and living area of the patient (Table-1). We observed no important disparities in the HR and average ABP between the patients of all 3 groups. There were important disparities in the scores on VAS scale between groups of intrathecal & intravenous with the group of control at four & six hours after surgery.

Table-I: Demographic And Surgery Data

Demographic Data		Control Group	Intrathecal Group	Intravenous Group
		Mean \pm SD	Mean \pm SD	Mean \pm SD
Age* (year)	Mean \pm SD	26.50 \pm 5.00	25.20 \pm 5.00	25.00 \pm 4.00
Surgical	Elective	11.00 \pm 33.30	3.00 \pm 39.40	15.00 \pm 45.50
Caused %)	Urgency	22.00 \pm 66.70	20.00 \pm 60.60	18.00 \pm 54.50
Area (n %)	Urban	12.00 \pm 36.40	14.00 \pm 42.40	14.00 \pm 42.40
	Rural	21.00 \pm 63.60	19.00 \pm 57.60	19.00 \pm 57.60

The scores on VAS scale were lower in these hours in both groups as compared to controls (Table-2). We observed no disparity in pain scores on VAS scale at twelve and twenty-four hours after surgery between all three groups (Table-2).

Table-II: Visual Analogue Score At Various Time Points Postoperatively

Visual Analog Score	Control Group	Intrathecal Group	Intravenous Group	p value
	Mean \pm SD	Mean \pm SD	Mean \pm SD	
VAS 4	6.00 \pm 2.00	3.18 \pm 1.20	4.00 \pm 1.30	p<0.0001
VAS 6	7.70 \pm SD	2.50 \pm 1.00	4.00 \pm 1.80	p<0.0001
VAS 12	2.40 \pm 2.20	2.00 \pm 1.60	2.40 \pm 1.70	0.5000
VAS 24	2.20 \pm 2.20	1.50 \pm 1.50	1.60 \pm 1.50	0.2000

According to Kruskal-wallis test, the total consumption of the diclofenac in IT & IV groups was lower as compared to group of controls (Table-3).

The total analgesia duration in the group of control was much lower as compared to the IT & IV groups (Table-3). The rate of occurrence of the side effects intra-operatively & in the duration of next twenty-four hours were comparable in all present three groups. Total 20 patients suffered from vomiting & nausea intra-operatively. There were 25.0% patients in IT group who stated the nausea & vomiting, 15.0% is IV group & 60.0% patients in the group of healthy controls. Total 33.30% patients suffered from headache after twenty-four hours of surgery in the IT group and 26.70% in the IV group and 40.0% patients in the group of controls. This was not much complication about this side effect in the all groups of this research works. Only four patients in the group of IT displayed agitation & plantar feet.

Table-III: Time To Rescue Analgesia And Analgesic Requirement In 24 Hours Postoperatively

Parameters	Control Group	Intrathecal	Intravenous Group	p value
	Mean \pm SD	Mean \pm SD	Mean \pm SD	
Doses of diclofenac requirement in 24 h(mg)	293.90 \pm 82.00	163.30 \pm 82.00	227.20 \pm 103.00	p<0.0001
Time to rescue analgesic (min)	245.40 \pm 93.00	336.80 \pm 86.00	312.40 \pm 106.00	p=0.001*

DISCUSSION:

This research work showed that two milligrams intrathecal betamethasone is effective and secure for the decrease of the pain after surgery of CS. Johansson discovered that local methyl-prednisolone can overpower the transmission of nerve in reedy unmyelinated C-fibers at thirty minutes after the application of this drug. There are reports about the analgesic influences of the effects of corticosteroids after different kinds of the surgery. The administration of the corticosteroids before surgery by oral, intramuscular, epidural & inter-scalene block routes are able to decline the scores of pain as well as very less amount of the adverse side effects. Bani-hashem have described that in fifty patients who underwent orthopedic surgery, the mixture of the intrathecal dexamethasone of eight milligrams to the fifteen milligram bupivacaine significantly increased

the duration of anesthesia as well as decrease in the rates of the complications after anesthesia impact.

Siji stated that five milligrams thoracic epidural dexamethasone decreases the scores of pain after the LC (Laparoscopic Cholecystectomy). Aasboe [stated a single twelve milligram dose of the IM betamethasone thirty minutes prior to the operation and creates analgesic impacts after the ambulatory surgical intervention. Kroin showed that after bilateral incision of foot in rats, level of COX2 protein of lumber spine enhanced at three & six hours after the incision whereas at further times, there was no disparity in this very protein in comparison with the group of controls. This is similar with this research work in which betamethasone decreased the scores of VAS pain at four & six hours after the surgical intervention in the groups of IT & IV. The high solubility of the betamethasone in the water is

much suitable for intrathecal management. This medicine has very low mineralocorticoid activity, with less retention of water & sodium and very high anti-inflammation impact which is much important for the analgesia after surgical intervention. Langmayr stated that betamethasone injection in the patients undergoing surgery of lumbar disc had no serious side effect. Latham in his research work discovered that intrathecal management of 5.70 milligram betamethasone in the spinal cord of sheep did not cause any pathological alteration.

CONCLUSION:

This current research work showed that IBM has the ability to decrease pain and reduction in the needed dosage of the diclofenac within twenty-four hours after CS.

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