ORIGINAL ARTICLE

Comparative Study on The Effect of Paracetamol, Diclofenac and their Combination in Post Operative Pain Relief of Cesarean Section

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Abstract

To evaluate whether the post operative pain can be managed by a single agent or a combination. A prospective non randomised study of 150 patients undergoing caesarean section over 5 months were divided into three groups. Group I received paracetmol 1g i.v 6hourly, group II received Diclofenac 75mg i.m 8hourly and group III a combination of both.The pain relief was seen in 32%,30%and 88% in group I,II and III respectively after 24 hours and was 40%,50% and 92% after 48hours respectfully. Balanced analgesia with a combination of NSAIDS and acetaminophen forms the preferred method for post-operative pain of cesarean section.

Key Words

Balanced Analgesia, Post Operative Pain, Cesarean Section

Introduction

Pain signals damage or disease of the tissue. The post operative pain is due to the trauma of surgery. The intensity of postoperative pain depends on many local and clinical factors like site of surgery, type of surgery, and age factor (1). It is imperative to decrease the post operative pain as it leads to early discharge from hospital and reduce the onset of chronic pain syndromes. A multimodal approach for management of postoperative pain has come into existence (2). Balanced multimodal analgesia uses two or more agents that act by different mechanisms to achieve a superior analgesic effect without having side effects rather than increasing the dose of a single agent to achieve better efficacy as it leads to higher side effects (3).This study was undertaken to evaluate whether the post operative pain can be managed by a single agent or a combination.

Material and Methods

This study was a prospective non - randomized study conducted in the Department of the Obstetrics and Gynaecology, Dayanand Medical College and Hospital, Ludhiana from May 2012 to September 2012 after taking approval from ethical committee.

A total of 150 patients with term pregnancy were recruited for elective Lower segment caesarean section (LSCS). Informed consent was taken. Patients excluded from the study were previous caesarean section or surgery,

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Table 1. Drug Efficacy

Group	24 hrs (Efficacy %)	48 hrs (Efficacy %)
Group I	32	40
Group II	30	50
Group III	88	92

Table.3 Management of Postoperative pain

Non opioids	**Aspirin, NSAIDs Paracetamol**
Weelk Opioids	**Codeine, Dextropropoxyphene, Tramadol**
Strong Opioids	**Morphine, Pethidine**

chorioamnionitis, drug allergy, bleeding tendency, medical disorders like asthma, gastric ulcers.

Patients were divided into three groups of 50 patients each. Group I received paracetamol 1g i.v. 6 hrly, group II received diclofenac 75 mg i.m. 8 hrly and group III a combination of both. Both the drugs were started 30 min before the end of surgery till 48 hrs after surgery. Patients were assessed for pain relief by visual analogue scale (VAS) of zero to ten after 1 hr, 6 hrs, 12 hrs, 24 hrs and 48 hrs of surgery. Zero meant no pain and ten meant severe pain. Patient satisfaction level was also noted. The adverse effects like nausea, vomiting and bleeding tendency was noted.

Results

The mean age of all the groups was 28 years with a mean parity of one. The mean gestational age of all groups at the time of caesarean section was 38.4 weeks. The mean weight of all patients was 65.3kg.

The Pain relief (VAS=0) was assessed as drug efficacy. The percentage of patients with complete pain relief after 24 and 48 hours are shown in table I

Patient satisfaction level was 30%, 25%, 90% in group I, II and III respectively.

Adverse Effects: A majority of patients had nausea(36%) and vomiting(42%) in all the groups and none showed any bleeding tendency.

Discussion

Postoperative pain relief is important as the postoperative period has to be comfortable. It should decrease pain without causing any side effects and thereby increasing physical activity. It can be relieved with either a peripherally acting agent e.g. NSAIDs or a centrally acting agent e.g. opioids. The perception of pain depends on patients own perception of pain, site of surgery (4). Thoracic and upper abdominal surgery is more painful (2). The postoperative pain is classified as:

Table 2. Adverse Effects of Pain

Respiratory	Breathing problems, infection
CVS	Increased BP, tachycardia, myocardial infarction
Thromboembolic	Decreased physical activity and thrombus formation
GI	Gastric statsis or ulcer
Musculoskeletal	Prolonged confinement, decreased mobility
Psychological	anger, resentment

Mild: hernia, laparoscopy

Moderate: hysterectomy, cesarean section

Severe: Thoracotomy, aortic surgery, knee replacement

The pain is generally under treated due to fear of respiratory depression, vomiting and over sedation of the patient (5). Pain should not be undertreated as it has the following consequences (*Table 2*) (6).

The treating physician should do counseling of the patient preoperatively. Pre-operative assessment regarding age, sex, weight, and drug history should be mentioned. Extremes of ages and obese, females are more susceptible to pain. Drug history should include any history of opioid treatment. Effects of drugs vary with the route of drug delivery and the length of action of the drugs should not be overestimated.

WHO has devised an analgesic ladder which can help in the management of postoperative pain (*Table 3*) (7).

With the advent of multimodal analgesia, a combination of NSAIDS and paracetamol should be given 30 min before the end of surgery till 48 hours after surgery. After 48 hours, tissue healing takes place and pain decreases

leading to restoration of the use of oral drugs. In our study, Group I received paracetamol (acetaminophen). The efficacy was 32.2% and 50% at the end of 24 hours and 48 hours respectively which was similar to group II (30.6% and 50% respectively.) In a study, Brodner et al, showed the analgesic efficacy of intravenous paracetamol to non- opioids to be same (8). Group III had better efficacy, 88% and 92% after 24 hours and 48 hours respectively (statistically significant) because of better efficacy in combination. This is a multimodal approach using both the agents with different mechanisms of action to achieve superior efficacy and decrease the need of opioids. In a study by Hyllested et al documented the analgesic combination better than acetaminophen as regards the pain score, supplemental analgesia and pain relief (9). In another study, the combination analgesia forms the preferred method after gynaecologic oncology surgeries (10).

Group I did not experience any side effects so it is preferable to use acetaminophen in high risk patients. None of the patients had GI side effects as it does not decrease prostaglandins or act on stomach mucosa. Group II experienced nausea and vomiting due to the direct action of the NSAIDs on the gut mucosa and inhibition of PG leading to gastric acid production (11). It also depends on the dose and duration of the NSAIDs. It is imperative to add proton pump inhibitors.NSAIDs should be avoided in patients with renal compromise and hemorrhage as it decreases the renal flow, asthma and liver disorders as it precipitates bleeding tendencies due to its antiplatelet action (2). It should be used with caution in third trimester of pregnancy as it causes premature closure of ductus arteriosus and affects the fetal renal physiology. It interacts with quinolones and increasing the risk of CNS effects.

Conclusion

Balanced analgesia with a combination of NSAIDS and acetaminophen forms the preferred method for post-operative pain of caesarean section.

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