ORIGINAL ARTICLE

Comparison of Mean Dose of Tramadol Required Post Operatively in Patients Undergoing Caesarean Section with and without Bupivacaine Infiltration of Surgical Wound

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ABSTRACT

Aim: To compare the mean dose of Tramadol required post operatively in patient undergoing caesarean sections with and without Bupivacaine infiltration.
Study Design: It was a randomized controlled study.
Duration: Six months from January 2013 to June 2013.
Settings: Department of Obstetrics & Gynaecology, Bahawal Victoria Hospital, Bahawalpur.
Methods: A total of 80 women (40 in each group) fulfilling the inclusion/exclusion criteria were enrolled.
Results: In our study, 11(27.5%) in cases and 15(37.5%) in controls were between 20-25 years, 23(57.5%) in Cases and 21(52.5%) in Controls were between 26-30 years, 6(15%) in Cases and 4(10%) in Controls were between 31-35 years, mean+SD was calculated as 26.88+3.68 years, while comparison of mean dose of tramadol required post operatively in patient undergoing caesarean sections with and without bupivacaine infiltration was done which shows that 109.98+5.96 mg in cases and 236.3+11.14mg of Tramadol in controls were recorded which shows a significant difference between both groups, p value was calculated as 0.000.
Conclusion: We concluded that mean dose of Tramadol required postoperatively in patients undergoing caesarean sections with Bupivacaine infiltration is significantly lower than the patients without infiltration.
Keywords: Tramadol, C- section, bupivacaine infiltration

INTRODUCTION

Caesarean delivery is a common surgical procedure with increasing rate[1]. The rate of cesarean section in Pakistan at a tertiary care hospital was reported as 64.7%. Emergency cesarean section was performed in 59.3% and elective cesarean section in 40.7%[2]. Caesarean section commonly induces moderate to severe pain lasting 48 hours[3].

Opioids (narcotic analgesics) are commonly used for relief of postoperative pain after cesarean section, either by intrathecal administration prior to section or parenteral administration post operatively[4]. Wound infiltration with local anesthetics is an alternative and acceptable method for management of post operative pain[5].

Direct local wound infiltration of bupivacaine provide good pain relief after cesarean section and reduces the requirement of parenteral narcotic analgesia with no major side effects.[6] Because of analgesic properties and lack of opioid induced side effects, local anesthetic drugs have become increasingly popular in treatment of surgical pain[7].

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As Tramadol is a narcotic derivative analgesic and large amount is required post operatively to relief pain, this study is planned to observe the effect of Bupivacaine infiltration of wound in management of post-operative pain to reduce the dose of Tramadol and prevent the side effects of these narcotic derivatives..

MATERIAL & METHODS

A total of 80 cases (40 in each group). Two equal groups were formed, Group-A (Study Group) and Group-B (Control Group). All booked cases with age between 20-35 years for elective caesarean section, ASA (American society of Anesthesiologist) classification; Class I (healthy patient; no systemic disease) and Class II (mild systemic disease; medically stable) with singleton pregnancy at term, cesarean section done under spinal anesthesia and willing to participate in the study were included in the study while patients with pre-eclampsia/ eclampsia, history of diabetes mellitus and Gravida >4 were excluded from the study.

Permission from hospital ethical committee was taken, an informed consent of the patients was obtained. Group A (Study group) received 20ml of 0.5% bupivacaine infiltrated into peritoneum,

muscles, subcutaneous tissues and into the skin under direct vision before the closure of the abdominal wall after cesarean section performed. Group B (control group) did not receive Bupivacaine infiltration. In group A intravenous Tramadol was given only on request of patients for pain control. In Group B Intravenous Tramadol with initial dose of 100mg was given and then 50-100mg Tramadol was administered 6-8 hourly as need of patient to relief pain. In both groups if the pain is severe, Tramadol was administered up to 600 mg/24 hours. Total administered dose in first 24 post-operative hours were counted in both groups in milligrams and noted on a predesigned Performa by the researcher.

The data was analyzed using SPSS version 10. Demographic information was recorded. Frequency and percentage was used for qualitative variable like parity. Mean and standard deviation was used for quantitative variables like age, gestational age and amount of Tramadol used in first 24 hours. Student T test was used to compare mean dose in both groups. P-value ≤ 0.05 was considered as significant.

Stratification was done to control the effect modifiers with reference to age of the patient and parity. T test was used to see the effect of these effect modifiers on outcome variables. P-value ≤ 0.05 was considered as significant.

RESULTS

In this study, age distribution of the patients was done which shows that 11(27.5%) in Cases and 15(37.5%) in Controls were between 20-25 years, 23(57.5%) in Cases and 21(52.5%) in Controls were between 26-30 years, 6(15%) in Cases and 4(10%) in Controls were between 31-35 years, mean technique in the assessment of trauma patient SD was calculated as 26.88±3.68 years (Table 1). Comparison of mean dose of tramadol required post operatively in patient undergoing caesarean sections with and without bupivacaine infiltration was done which shows that 109.98±5.96 mg in cases and 236.3±11.14mg of Tramadol in controls were recorded which shows a significant difference between both groups, p value was calculated as 0.000 (Table 2)..

Table 1: Age Distribution (n=80)

Age in years	Cases (n=40)	Control (n=40)
20-25	11(27.5%)	15(37.5%)
26-30	23(57.5%)	21(52.5%)
31-35	6(15%)	4(10%)

Mean±SD: 26.88±3.68

Table 2: Comparison of Mean Dose of Tramadol Required Post Operatively in Patient Undergoing Caesarean Sections With And Without Bupivacaine Infiltration (n=80)

Cases (n=40)	Control (n=40)	P value
109.98±5.96	236.3±11.14	0.000

DISCUSSION

Postoperative pain management is one of the important issues in surgery, which has significant effect on the health care system. Post operative pain leads to delayed patient ambulation, prolongation of hospitalization, increased atelectasis, vascular thrombosis, and ultimately patient dissatisfaction. Administration of analgesic drugs postoperatively results in pulmonary function improvement by relieving patient's pain, and is accompanied by decreased constipation, reduction in the side effects of vascular thromboembolism and shortening of the convalescence period[8-9].

Direct local wound infiltration of bupivacaine provide good pain relief after cesarean section and reduces the requirement of parenteral narcotic analgesia with no major side effects.6 Because of analgesic properties and lack of opioid induced side effects, local anesthetic drugs have become increasingly popular in treatment of surgical pain[7].

As Tramadol is a narcotic derivative analgesic and large amount is required post operatively to relief pain, this study is planned to observe the effect of Bupivacaine infiltration of wound in management of post-operative pain to reduce the dose of Tramadol and prevent the side effects of these narcotic derivatives.

We planned this study with the view to compare the mean dose of Tramadol required post operatively in patient undergoing caesarean sections with and without Bupivacaine infiltration.

In our study, 11(27.5%) in Cases and 15(37.5%) in Controls were between 20-25 years, 23(57.5%) in Cases and 21(52.5%) in Controls were between 26-30 years, 6(15%) in Cases and 4(10%) in Controls were between 31-35 years, mean±SD was calculated as 26.88±3.68 years, while comparison of mean dose of tramadol required post operatively in patient undergoing caesarean sections with and without bupivacaine infiltration was done which shows that 109.98±5.96 mg in cases and 236.3±11.14mg of Tramadol in controls were recorded which shows a significant difference between both groups, p value was calculated as 0.000.

The findings of the current study are comparable with a local study[6] where 98.00±26.65 amount of tramadol was used in study group and 225.00±46.57 in control group.

Another study[10] by Anthony Akinloye Bamigboye and colleagues assessed the effects of local anesthetic agent wound infiltration and/or abdominal nerve blocks on pain after CS and the mother's well-being and interaction with her baby and concluded that local anesthetic infiltration and abdominal nerve blocks as adjuncts to regional analgesia and general anesthesia are of benefit in CS by reducing opioid consumption.

In general, we concluded that local anesthesia is of benefit in women having a CS because it reduces opioid consumption. It can be recommended as part of the multimodal approach to pain relief.

However, the hypothesis of the study that "Mean dose of Tramadol required is different in patients undergoing caesarean section with and without Bupivacaine infiltration of wound" is justified, while the limitation of the study was that we did not analyzed any complication of wound infiltration which should be evaluated in next trials.

CONCLUSION

We concluded that mean dose of Tramadol required post operatively in patients undergoing caesarean sections with Bupivacaine infiltration of surgical wound is significantly lower than the patients without infiltration.

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