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Original Research Article.

Analysis of Analgesic Efficacy of the Non-Opioid Analgesics in Patients Following Abdominal Hysterectomy at a Tertiary Care Centre

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ABSTRACT

Background: Women undergoing procedures or surgeries related to infertility experience pain, which is often treated with opioid medication. Hence; the present study was undertaken for assessing analgesic efficacy of the non- opioid analgesic in patients following abdominal hysterectomy at a tertiary care center.

Materials and Methods: A total of 30 patients scheduled to undergo abdominal hysterectomy were enrolled in the present study. All the patients underwent abdominal hysterectomy under the hands of skilled clinicians. All the patients were divided broadly into three study groups: Group 1: Patients were given placebo Group 2: Patients were given metamizol 1 g, and Group 3: Patients were given paracetamol 1 g. The drugs were dissolved in 100 mL normal saline and given via IV infusion over 15 minutes. Patients in the placebo group received only 100 mL of normal saline. All the postoperative data in all the patients was recorded. All the results were analyzed by SPSS software.

Results: In the present study, a total of 30 patients were analyzed. Mean age of the patients of the study group 1, 2 and 3 was 42.8 years, 40.1 years and 43.8 years respective. Mean BMI of the patients of the study group, 2 and 3 was 27, 25.9 and 26.1 Kg/m^2 respectively. In the present study, while comparing the Frequency of Patient controlled analgesia bolus demands among the four study groups, non-significant results were obtained.

Conclusion: Both metamizol and paracetamol can be used with equal efficacy in patients following abdominal hysterectomy.

Keywords: Analgesia, Non- Opioid, Efficacy.

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INTRODUCTION

Women undergoing procedures or surgeries related to infertility experience pain, which is often treated with opioid medication. This creates some important clinical considerations. For patients who are opioid naive, exposure to these addictive medications may be a trigger for persistent use.[1, 2] The concept of fast-track or ambulatory surgery appeared in the early 1990s to facilitate early recovery and discharge from the hospital and early resumption of normal daily activities after elective surgical procedures as well to reduce the health-care costs. Day care surgeries have led to cost containment in the United States to the tune of 15%–30%, while in the United Kingdom, 40% saving in the cost has been observed. Premedication with 150 mg of oral dextromethorphan has been shown to reduce PCA morphine requirements in early postoperative period after abdominal hysterectomy procedures. Also, in patients undergoing laparoscopic cholecystectomy or inguinal hernia repair surgeries, use of 90 mg oral dextromethorphan improved patients well-being and reduced analgesic consumption, pain intensity, sedation, and hyperalgesia.[3- 5] Hence; under the light of above mentioned data, the present study was undertaken for assessing analgesic efficacy of the non- opioid analgesic in patients following abdominal hysterectomy at a tertiary care center.

MATERIALS AND METHODS

The present study was planned in the Department of Anaesthesia, Rajshree Medical Research Institute & Hospital, Bareilly, Uttar Pradesh (India) and it included assessment of efficacy of the non-opioid analgesic in patients following abdominal hysterectomy at a tertiary care center.

Ethical approval was obtained from institution ethical committee and written consent was obtained after explaining in detail the entire research protocol. A total of 30 patients scheduled to undergo abdominal hysterectomy were enrolled in the present study.

Inclusion Criteria

- Patients within the age group of 30 to 50 years
- Patients with negative history of any other systemic illness,
- Patients with negative history of any known drug allergy

Preoperative assessment of all the patients was done. All the patients underwent abdominal hysterectomy under the hands of skilled clinicians. All the patients were divided broadly into three study groups:

Group 1: Patients were given placebo

Group 2: Patients were given metamizol 1 g, and

Group 3: Patients were given paracetamol 1 g

The drugs were dissolved in 100 mL normal saline and given via IV infusion over 15 minutes. Patients in the placebo group received only 100 mL of normal saline. In all groups, 10 minutes before extubation 2 mg piritramide was injected. All the postoperative data in all the patients was recorded. All the results were analyzed by SPSS software. Chi- square test and Mann-Whitney U test were used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

RESULTS

In the present study, a total of 30 patients were analyzed. Mean age of the patients of the study group 1, 2 and 3 was 42.8 years, 40.1 years and 43.8 years respective. Mean BMI of the patients of the study group, 2 and 3 was 27, 25.9 and 26.1 Kg/m^2 respectively. In the present study, while comparing the Frequency of Patient controlled analgesia bolus demands among the four study groups, non-significant results were obtained.

Table 1: Comparison of Demographic profile

Parameter	Group 1	Group 2	Group 3
Mean age (years)	42.8	40.1	43.8
Mean BMI (Kg/m^2)	27.0	25.9	26.1
Mean weight (Kg)	62.8	63.1	60.4

Table 2: Frequency of PCA bolus demands

Variable	Group 1	Group 2	Group 3	p- value
After 6 hours	5.5	6	5.8	0.15
After 12 hours	7.8	7.2	7.9	0.13
After 24 hours	8	9.2	9.5	0.55

PCA: Patient controlled analgesia,

DISCUSSION

Because of its ability to titrate to individual needs, IV patient-controlled analgesia (PCA) is considered the ‘‘gold standard’’ for delivery of IV opioids for the management of postoperative pain.1 Numerous randomized control studies have been published evaluating efficacy, side effects, and patient satisfaction with PCA.[6, 7]

Data from reproductive procedures are limited, but recent data suggest that opioid exposure following other surgeries confers an increased risk for chronic opioid use. For women who are on chronic opioids or opioid replacement therapy, tolerance to opioids has the potential to make pain management more difficult. Likewise, women who have a history of an opioid use disorder may wish to avoid opioid medications given concerns about the potential relapse. For these reasons, it is important for all patients, but particularly those with a history of opioid use disorder or dependence, to optimize the treatment of pain in the perioperative period with non-opioid analgesics.[8,9]

Hence; under the light of above mentioned data, the present study was undertaken for assessing analgesic efficacy of the non- opioid analgesic in patients following abdominal hysterectomy at a tertiary care center.

In the present study, a total of 30 patients were analyzed. Mean age of the patients of the study group 1, 2 and 3 was 42.8 years, 40.1 years and 43.8 years respective. Mean BMI of the patients of the study group, 2 and 3 was 27, 25.9 and 26.1 Kg/m^2 respectively. Management of post-operative pain is an important concern after surgery. The lower abdominal gynecological surgery is expected to produce moderate to severe post-operative pain. The different classes of analgesics used, exert their effect through different mechanisms. Non-opioid analgesics are favored world-wide as they are devoid of opioid induced side effects and so lesser post-operative monitoring is required. A combination of analgesics from different classes may provide additive analgesic effects than a single drug.[10]

In the present study, while comparing the Frequency of Patient controlled analgesia bolus demands among the four study groups, non-significant results were obtained. Susanne Abdulla et al compared the analgesic efficacy and pain intensity of and patient's satisfaction with non-opioid analgesics while evaluating postoperative piritramide consumption for providing pain relief after abdominal hysterectomy. This was a randomized, double-blinded study. With the patient under general anesthesia, surgery was performed on 120 women using propofol, remifentanil, and muscle relaxant. Four patient groups (n=30 each) were treated over 24 hours with normal saline (NaCl), parecoxib, metamizol, or paracetamol in addition to piritramide using the patient-controlled analgesia (PCA) pump. Postoperatively, patients were asked every 2 hours for the first 6 hours, and afterwards once every 6

hours, to quantify their pain experience at rest on different pain scales, including patient satisfaction. Cumulative piritramide consumption within 24 hours postoperatively was recorded on the display of the PCA pump. The first required amounts of piritramide in the recovery room were similarly high in all groups and the incremental piritramide consumptions after 6, 12 and 24 hours showed no significant difference among the four groups. Also, with cumulative PCA-piritramide consumption no significant difference could be found. In all groups, the highest level of the visual analogue scale (VAS) score was registered upon arrival in the recovery room. However, there was a significant difference only at 6 hours after surgery between the NaCl group and the paracetamol and parecoxib groups. Compared with placebo, there was no significant difference in regard to opioid-sparing effect by administering additional non-opioids, whereas VAS scores were significantly lower in the paracetamol and parecoxib groups at 6 hours after surgery.[11]

Top priorities for successful outcome of such day care procedures are achieving alertness, ambulation, analgesia, and alimentation. Multimodal/balanced analgesia is an increasingly popular approach for this. It utilizes a combination of opioids and nonopioids which act out on different receptors including central and periphery to control pain. Using excess of opioids leads to excessive drowsiness, sedation, nausea and vomiting, pruritus, urinary retention, ileus, constipation, and ventilator depression; hence, using a combination of drugs minimizes these side effects. Hence, planning postoperative pain relief in day care surgeries should involve selection of drugs and there use in a predefined and strict manner based on the availability of evidence and past experiences.[8- 10] Pal A et al compared the efficacy of injectable diclofenac intramuscularly (IM), injection paracetamol intravenously (IV), or a combination of both to provide post-operative analgesia in patients undergoing lower abdominal gynecological surgeries. A total of 90 female patients (American Society of Anesthesiologists I and II), aged 20-50 years, scheduled for elective total abdominal hysterectomy with or without bilateral salpingo-oophorectomy were randomized to receive 75 mg diclofenac IM 8 hourly (Group D) or 1 g paracetamol IV 8 hourly (Group P) or a combination of both 8 hourly (Group PD) for 24 h post-operative period from the start of surgery. The primary outcome measured was the requirement of rescue analgesic (tramadol), the secondary outcomes measured included visual analog score (VAS) for pain, time until first rescue analgesic administration, patient satisfaction score and any side effects. The requirement of rescue analgesic was significantly lower in Groups D and PD compared to Group P. Mean (standard deviation) tramadol requirement during 24 h was 56.67 (62.60) mg, 20.00 (40.68) mg and 20.00 (40.68) mg in the Groups P, D and PD respectively. Less number of patients in Groups D and PD (20% in both the groups) required rescue analgesic compared to Group P (50%). Injection diclofenac IM is more effective than paracetamol IV in terms of rescue analgesic requirement, but the combination of diclofenac IM and paracetamol IV provides no added advantage over diclofenac IM alone.[12]

CONCLUSION

From the above results, it can be concluded that both metamizol and paracetamol can be used with equal efficacy in patients following abdominal hysterectomy. However; further studies are recommended.

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