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Original Research Article

"A COMPARITIVE STUDY OF POST OPERATIVE ANALGESIC EFFICACY OF ULTRASOUND GUIDED TRANSVERSUS ABDOMINIS PLANE BLOCK VERSUS WOUND INFILTRATION WITH 0.2% ROPIVACAINE IN FEMALES UNDERGOING OPEN GYNAECOLOGICAL SURGERY"

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ABSTRACT:

Background: The relief of pain and suffering is, and always has been, one of the primary concerns of mankind. Failure to relieve pain can lead to severe physiologic responses that are associated with increased morbidity, mortality and costs. Acute pain is an unpleasant sensory and affective experience normally associated with injury.

OBJECTIVES: To assess the post-operative pain relief in patients, who receive transversus abdominis plane block and the local anaesthetic wound infiltration, with 0.2% Ropivacaine, following open gynaecological procedures, using visual analogue scale at rest and on movement.

MATERIAL & METHODS: Study Design: A prospective, randomized, comparative study. **Study area:** Department of Anaesthesia and department of gynaecology in Apollo institute of medical sciences and research, chittoor. **Study Period:** 6 months. **Study population**: Females undergoing open gynaecological procedures, conducted at the department of Gynaecology and Anaesthesia in Apollo institute of medical sciences and research, chittoor. **Sample size:** study consisted a total of 60 cases. **Sampling method:** Simple random method. The patients were selected based on those satisfying the inclusion criteria and gave a written informed consent underwent the following. Detailed preanaesthetic check-up including anticipation of difficult airway was done and patients were counselled regarding sub-arachnoid block, transversus abdominis plane block, local wound infiltration (procedure, risks and benefits) and visual analogue scale which is a line graded from 0-10, where 0=no pain and 10=the worst pain.

Results: there was statistically significant difference in the VAS score at 2 hrs with P value 0.002 and 4 hrs P value <0.001 in the two groups. At 4 hrs postoperative period the mean

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VAS in group A was 0.66 where as in the group B the mean VAS score was 2.8 making it clinically significant in terms of need to provide analgesia in group B patients.

CONCLUSION: The TAP block with local anaesthetic is a more effective and safe technique for postoperative analgesia for lower abdominal gynaecological surgeries, compared to the surgical wound infiltration of the local anaesthetic agent. Also the need of Fentanyl in the 24hrs postoperative period is less in patients receiving TAP block.

Key words: Post-Operative Analgesia, Transversus Abdominis Plane Block, Surgical Wound Infiltration

INTRODUCTION:

The international association for the study of pain defines pain as an "unpleasant sensory and emotional experience associated with acute or potential tissue damage or described in terms of such damage".

The relief of pain and suffering is, and always has been, one of the primary concerns of mankind. Failure to relieve pain can lead to severe physiologic responses that are associated with increased morbidity, mortality and costs. Acute pain is an unpleasant sensory and affective experience normally associated with injury. It arises from activation of the peripheral nervous system and emerges from complex higher level processing.[1]

Poorly controlled pain after abdominal surgery is associated with a variety of unwanted post-operative consequences, including patient suffering, distress, confusion, chest and heart problems, and prolonged hospital stay.[2]

Gynecological procedures performed through abdominal incision are very common and a substantial post-operative discomfort and pain is always anticipated. Any postoperative analgesic technique should meet three criteria viz. effective, universally applicable and safe. With adequate post-operative analgesia, the magnitude of the neuro-endocrine stress response, postoperative pulmonary complications and the incidence of myocardial ischemia can be decreased.

Many options are available for treatment of acute postoperative pain following open gynaecological procedures, mainly comprising of systemic analgesic (opioid and non-opioid) and regional analgesic (neuraxial and peripheral) techniques.

As a part of a multimodal analgesic regimen, opioids used initially to achieve effective analgesia. However, opioids are associated with dose dependent side effects like nausea, vomiting, pruritus, sedation and respiratory depression. Regional blocks of the anterior abdominal wall can significantly help with postoperative analgesia especially when used as a part of multimodal technique. Haemodynamic effects are minimal as spread of local anaesthetic is limited to the abdominal wall.

Transversus abdominis plane(TAP) block is a regional anaesthetic technique which blocks the abdominal neural afferents by introducing local anaesthetic into the neuro-fascial plane between the internal oblique and the transversus abdominis muscle. The increasing use of TAP block, as a form of pain relief after abdominal surgery warrants evaluation of its

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effectiveness as an adjunctive technique to routine care and, when compared with other analgesic techniques.[3]

The TAP block via the "Triangle of Petit" was described by Rafi in 2001.[4] In 2004, McDonnell et al[5]. presented preliminary work on TAP blocks in cadavers and in healthy volunteers at the scientific meeting of the American Society of Anaesthesiologist in 2007. Hebbard P et al.[6] first described ultrasound guided approach for TAP block in 2007. Walter et al[7] described a technique in 2008 where TAP blocks could be done with ultrasound imaging making the procedure even more safe and effective.

With the increasing use of ultrasound, the block even more came into limelight and the use of ultrasound has only increased the chances of more precise and accurate localization of the tip of needle and drug injected.

Local anaesthetic infiltration along the surgical wounds through subcutaneous planes also provides adequate analgesia without much of side effects. Both these techniques reduce the post-operative need of opioid analgesia and exposure to their side effects. The way for improving postoperative pain management should include procedure specific guidelines, early prediction of the pain and introducing new effective drugs and drug delivery systems.

AIM: To compare the analgesic efficacy of two methods of delivering local anaesthetic agent, 0.2% Ropivacaine i.e., infiltration in the transversus abdominis plane through ultrasound and surgical site wound infiltration, in patients undergoing open gynaecological surgeries.

OBJECTIVES:

- To assess the post-operative pain relief in patients, who receive transversus abdominis plane block and the local anaesthetic wound infiltration, with 0.2% Ropivacaine, following open gynaecological procedures, using visual analogue scale at rest and on movement.
- To assess the requirement of Fentanyl in 24hrs post-operative period, between the two groups.
- To assess the sedation score in the two groups.
- To assess the incidence of side effects such as nausea, vomiting and any other complications in 24hrs post-operative period.

MATERIAL & METHODS:

Study Design: A prospective, randomized, comparative study.

Study area: Department of Anaesthesia and department of gynaecology in Apollo institute of medical sciences and research, chittoor.

Study Period: 6 months.

Study population: Females undergoing open gynaecological procedures, conducted at the department of Gynaecology and Anaesthesia in Apollo institute of medical sciences and research, chittoor.

Sample size: study consisted a total of 60 cases.

Sampling method: Simple random method.

Inclusion criteria:

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- Females undergoing open gynaecological procedures.
- ASA I-II.
- Age 30 – 60 years.

Exclusion criteria:

• Patients who are not willing to participate in the study.
• Patients who are allergic to Ropivacaine.
• Contraindication to regional block (coagulation defect, local infection at the site of injection or patient refusal).
• Patients with documented history of opioid sensitivity, drug abuse and allergy to NSAID's.

Ethical consideration: Institutional Ethical committee permission was taken prior to the commencement of the study.

Study tools and Data collection procedure:

Randomization was done using closed envelope method.

Group A: Patients who would undergo ultrasound guided bilateral transversus abdominis plane block with 20ml of 0.2% Ropivacaine, on each side.

Group B: Patients who would receive wound infiltration of 0.2% Ropivacaine 30ml.

The patients were selected based on those satisfying the inclusion criteria and gave a written informed consent underwent the following. Detailed preanaesthetic check-up including anticipation of difficult airway was done and patients were counselled regarding sub-arachnoid block, transversus abdominis plane block, local wound infiltration (procedure, risks and benefits) and visual analogue scale which is a line graded from 0-10, where 0=no pain and 10=the worst pain.

Patients were pre-medicated with Tab.Ranitidine 150mg, Tab..Alprax 0.5mg night before surgery. On the day of surgery before shifting to the operation theatre, an 18gauge peripheral venous cannula inserted and patient preloaded with 500ml of ringer lactate. In the pre-operative room, baseline readings of heart rate, systolic blood pressure, diastolic blood pressure, mean arterial pressure, oxygen saturation were measured. Consent was checked. Monitors such as Non-invasive blood pressure, Pulse oximetry, ECG were connected. Airway equipments like oral airways, laryngeal mask airway size 3 and 4, different laryngoscope blades and cuffed endotracheal tubes sized 6mm-7mm, suction catheters, difficult airway cart and emergency drugs were kept ready.

At the end of surgery, after operative site dressing, an ultrasound guided TAP block was given by the anaesthesiologist to 'Group A' patients using a total volume of 20 ml of 0.2% Ropivacaine on each side.

Ultrasound guided TAP block was given to 'Group A' patients as described by Hebbard et al. After covering the wound with a dressing, the procedure was performed using strict aseptic technique (gown, gloves, facemask and protective sheath for the ultrasound probe). The block was performed using the Sonosite ultrasound machine.

A linear array ultrasound probe (13-6MHz) was positioned in a transverse plane in the midaxillary line in the axial plane halfway between the iliac crest and the costal margin. Views were considered satisfactory if subcutaneous fat, external oblique muscle, internal

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oblique muscle, transversus abdominis muscle, peritoneum and intraperitoneal structures were identified.

To assist with identifying these structures, the probe was moved anteriorly to the rectus sheath and then the fascial planes are followed back out laterally. The final position of the probe was no further anterior than the anterior axillary line. The TAP block was performed only if the views were satisfactory.

A total of 20 ml of study solution of 0.2% Ropivacaine was injected on each side in 5 ml increments after aspiration to avoid intravascular placement. After each 5ml bolus, patients were monitored for an increase in heart rate or signs of local anaesthetic toxicity such as tinnitus, perioral numbness, metallic taste in mouth, slurring of speech and mental status changes. An echolucent lens shaped space between the two muscles was taken as a successful injection.

Group B patients were infiltrated with 30ml of 0.2% Ropivacaine subcutaneously around the surgical wound.

Each patient in both groups were followed up postoperatively at 30mins, 2nd hour, 4th hour, 6th hour,12th hour, 16th hour, 20th hour and 24th hour were monitored for the hemodynamic parameters like heart rate, ECG and noninvasive blood pressure, respiratory rate and oxygen saturation.

The duration of analgesia, as indicated by the onset of pain, pain intensity score at rest and on movement, by using the VAS, (which is a line graded from 0-10, where 0

= no pain and 10 = the worst pain imaginable) was assessed and documented in the immediate postoperative period and at 30mins, 2nd hour, 4th hour, 6th hour, 12th hour, 16th hour, 20th hour and 24th hour.

Patients who complained of pain at rest more than 5 or greater on a 0-10 visual analogue scale were given 30mg increments of inj. ketorolac IV 5 to 7 hours apart. If this regimen did not relieve their pain, they received 1000mg Acetaminophen IV between two Ketorolac doses. Despite this, if patients complained of pain 30 minutes afterward, intravenous Fentanyl 1microgram/kg would be given.

Rescue analgesic: The doses of Ketorolac consumed after the operation, first time of requesting analgesia, frequency of Ketorolac and Fentanyl administration and the total dose consumed by the patient during the period of the study were recorded in all groups. Sedation by Ramsay sedation score (1-6).

Statistical analysis:

Once all the observations had been recorded, the data collected was transferred to a master chart and analyzed. Data analyzed by using SPSS version 23. The VAS score between the two sub groups compared using student ‘s t-test. The statistical analysis for age, weight, duration of surgery, opioid consumption was done by unpaired t-test. The association between different parameters analyzed with Chi-square test. Percentage and frequencies of patients was compared using Chi-square. A P-value <0.05 is considered statistically significant.

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OBSERVATIONS & RESULTS:

Table No 1: Patient demographic distribution

GROUP	MEAN AGE	MEAN WEIGHT
GROUP A	45.6±7.7	57.9±7.18
GROUP B	46.23±9.2	58±7.25
P value	0.056	0.067

The mean age in the TAP group was 45 years and surgical site infiltration group was 46 years. The mean weight in the TAP group was 57 and in the surgical site infiltration group was, 58. There is no significant difference in age and weight of patients between the two groups as the P value is >0.05.

Table No 2: Preoperative hemodynamic and vital signs

GROUP	MEAN HR	MEAN SBP	MEAN DSBP	MAEN SpO_2	MAEN RR
A	78.3	122	76.56	99.4	17.1
B	78.36	120.3	77.56	99.66	17.1
P value	0.96	0.92	0.87	0.98	1

The above table showed that there is no significant difference in the pre- op hemodynamic characteristics of the patients in both the groups, P value was>0.05.

Table No 3: The heart rate variation at different intervals among the two groups

MEAN HR	0 min	1min	5min	10min	15min	30min
GROUP A	78.3	78	79.6	78.73	75.1	75.83
GROUP B	78.36	76.23	77.77	77.6	77.4	79.2
P Value	0.97	0.8	0.78	0.89	0.67	0.56

The above table showed that there is no significant difference in the pre- op hemodynamic characteristics of the patients in both the groups, P value was>0.05.

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Table No 4: Duration of surgery

GROUP	MEAN DURATION OF SURGERY
A	70.666
B	77
P value	0.2682

The duration of surgery in both the groups were comparable and there was no statistical difference between the two groups with a P value >0.05.

Table No 5: VAS score at rest.

	VAS score	30min	2hr	4hr	6hr	12hr	16hr	24hr
GROUP A	0	29	26	0	0	0	0	0
	1	1	0	0	0	0	0	0
	2	0	1	6	0	0	0	0
	3	0	2	11	2	5	1	7
	4	0	0	4	6	17	14	16
	5	0	1	5	9	5	14	7
	6	0	0	2	7	3	1	0
	7	0	0	2	5	0	0	0
	8	0	0	0	1	0	0	0
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0

	VAS score	30min	2hr	4hr	6hr	12hr	16hr	24hr
GROUP B	0	30	9	0	0	0	0	0
	1	0	4	0	0	0	0	0
	2	0	7	1	0	0	0	0
	3	0	8	3	0	3	2	3
	4	0	2	8	7	20	10	6
	5	0	0	14	9	5	16	18
	6	0	0	3	11	1	2	3
	7	0	0	1	3	1	0	0

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	8	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
p value		>0.05	>0.05	<0.05	<0.05	<0.05	<0.05	<0.05

There was no significant difference in the VAS score at 30mins and at 2 hours between both the groups. At 4th hour in group A only 9 patients (33%) had VAS score of ≥5 whereas in group B 18 patients (66%) had VAS of ≥5 making the difference statistically significant, but then on evaluating them score at 6, 12, 16, 20 hours there was significant difference in the VAS score between both the groups with P value < 0.05.

Table No 6: Mean VAS score on movement

Mean VAS score on movement	**30 min**	**2 hr**	**4 hr**	**6 hr**	**12 hr**	**16 hr**	**24 hr**
GROUP A	0.1	0.3	0.66	6.67	5.43	5.7	5.1
GROUP B	0	1.5	2.8	6.57	5.37	5.77	4.9
P value	>0.05	0.002	<0.001	>0.05	>0.05	>0.05	>0.05

The above table showed that there was statistically significant difference in the VAS score at 2 hrs with P value 0.002 and 4 hrs P value <0.001 in the two groups. At 4 hrs postoperative period the mean VAS in group A was 0.66 where as in the group B the mean VAS score was 2.8 making it clinically significant in terms of need to provide analgesia in group B patients.

The time for first rescue analgesia was 8.73 mean hour in group A and 6.7 mean hour in group B, shows that there is earlier requirement of rescue analgesia group B when compared to group A. Thus the difference between the time for request of 1st rescue analgesia was extremely statistically significant with a P value <0.001.

When compared to group A (mean number of 2.83times n 24hrs) the group B required more number of analgesic doses in 24hrs (mean number of 3.6times in 24hrs). Thus the consumption of Inj. Ketorolac as rescue analgesic was found higher in the group B which was statistically extremely significant with a P value of 0.0001.

Table No 7: Fentanyl administration

		Frequency	**Percentage**
Group A	**No**	29	96.7
	Yes	1	3.3
	Total	30	100

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Group B	**No**	24	80
	Yes	6	20
	Total	30	100

The administration of fentanyl among the two groups in our study. Of 30 patients in Group A only one patient (3.3%) needed fentanyl administration in 24hrs post-operative period whereas among 30 patients in group B, 6 patients needed fentanyl (20%).

Table No 8: RAMSAY SEDATION SCORE

	RSS	Frequency	Percentage
Group A	1	30	100
Group B	1	30	100

The RAMSAY SEDATION SCORE was 1 in both the groups. At no point of time the sedation score was more than one in both the groups.

Table No 9: **SIDE EFFECTS – Nausea and Vomiting**

		Frequency	Percentage
Group A	No	30	100
Group B	No	29	96.7
	Yes	1	3.3

The above table shows that group B had a side effects (nausea and vomiting) of 3 .33% (1 of 30) which was statistically insignificant.

DISCUSSION:

TAP is a regional block, a relatively novel technique with ultrasound guidance. Several studies have been published where the analgesic use of TAP blocks has established that it causes an improvement in pain scores as well as decreases opioid requirement postoperatively. Most of the studies compared the TAP block with placebo. Here we compared the TAP block with local anaesthetic wound infiltration, although both take care of the incision pain which is parietal component of surgical pain. TAP block acts only on the nerves supplying the anterior abdominal wall and there by subdues parietal component of pain only.

In our study we evaluated the postoperative analgesic efficacy of transversus abdominis plane block versus wound infiltration with local anaesthetic agent 0.2% Ropivacaine in females

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undergoing open gynaecological procedures with the primary objective was to assess the post-operative pain relief in patients, using visual analogue scale at rest and on movement.

The TAP block provides effective analgesia with opioid-sparing effects. Disadvantages include the need for a bilateral block for midline incisions and the absence of effectiveness for visceral pain.

The effect of the block is dependent on the technique used and patient anatomy. Støving et al. studied the effect of TAP block in healthy volunteers. They found huge inter-individual variability in objective sensory block and duration of effect. The TAP block is a volume block and is performed by injecting local anaesthetic solutions in the transverse abdominis plane without specific reference to the nerves responsible for the innervations of the abdomen wall.

The age of patients in both groups was spread over a wide range. But, while considering patients for the study, we made sure that extremes of age were not included for the reason that they may exhibit altered pharmacological profiles for the administered drugs, both local anaesthetic and opioid. However, mean age in both groups A and B was comparably similar, with values of 44.46 and 46.23 yrs respectively.

Ropivacaine (0.2%) at a dose of 20 ml was used in our study; the total dose injected being 80 mg in Group A and 60mg in Group B. TAP block relies on the local anaesthetic spread rather than concentration and therefore it is more volume dependant. Hence, we chose the above concentration, volume and dosage.

This dose is well within the recommended safe dose range for Ropivacaine. Nevertheless, the potential for systemic toxicity must be borne in mind. Evidences suggest that in order to ensure that there is a complete sensory blockade of the abdominal wall, 20 ml solution is sufficient as it spreads from the iliac crest to the costal margin and ensures a complete sensory blockade of the abdominal wall.

In our sudy we used 0.2% Ropivacaine, as various studies suggest that the concentration 0.2% Ropivacine is enough to produce similar analgesic effect as that of 0.5% and 0.75%. Abdul Jalil et al.[8] in their prospective, randomized, double blind study on 56 patients scheduled for appendectomy under general anaesthesia. They received TAP block with Ropivacaine 0.2% in one group and Ropivacaine 0.5% in the other group at the end of the surgery. They found that both concentrations provided comparable postoperative analgesia.

TAP block provided superior analgesic effect, without significant differences in the hemodynamics and the duration of analgesia was prolonged in TAP block group. The results of our study is very much comparable to the study by **Sivapurapu 2013** [62] in which he compared, TAP block on 26 cases with 0.25% Bupivacaine 20 ml each side with wound infiltration on 26 cases with 0.25% bupivacaine 20 ml in gynaecological surgeries. He found that the VAS pain score at rest and VAS pain score on movement were significantly lesser in the TAP block group with p value < 0.001.

Atim *et al*. in their prospective research which was like our study evaluated the efficacy of ultrasound-guided TAP block and Bupivacaine wound infiltration in patients undergoing hysterectomy. They recorded that pain scores of the group with TAP block were found to be

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lower than those of the infiltration group in the 6th and 24th hr and suggested that TAP bolck was more effective than wound infiltration in postoperative pain management.

In a similar study by **Petersen 2013[13]** wherein he compared TAP block on 29 cases 0.75% Ropivacaine, 25 ml each side with wound infiltration of 0.375% Ropivacaine 40ml on 30 cases and found that the VAS pain score at rest and VAS pain score on movement were significantly lesser in the TAP block group with p value < 0.001 which is comparable with our study. In a study by **Skjelsager 2013[12]** they compared TAP on 23 cases with 0.75% Ropivacaine, 40 ml total with wound infiltration of 0.75% Ropivacaine 40ml on 25 cases. They found that the VAS pain score at rest and VAS pain score on movement were significantly lesser in the TAP block group with P value < 0.001. This is comparable with our study which also shows that the VAS score is significantly less in the TAP block both at rest and on movement.

Our study also shows that TAP Block provides superior analgesia as compared to the surgical wound infiltration in terms of the longer duration for the request of 1st rescue analgesia and the number of rescue analgesic use. But the opioid related side effects with Fentanyl that is nausea and vomiting were less in our study and was statistically insignificant.

TAP block provides superior analgesia compared with wound infiltration as shown by Qingduo Guo et al[13] in their meta-analysis which included nine RCTs with a total of 500 participants. They compared TAP block with wound infiltration for pain relief after surgery. The primary outcomes were pain scores at rest and on movement at 1, 8 and 24 hours postoperatively and cumulative Morphine consumption over 24 hours.

In our study when we evaluated the cumulative analgesic consumption this was significantly lower in the TAP block group as compared to the surgical site infiltration group. Our study is in agreement with a similar study by Atim et al[10] who evaluated ultrasound guided transversus abdominis plane (TAP) block and Bupivacaine infiltration of the skin in patients undergoing hysterectomy. A control group (n = 18) and TAP block group (n = 18) received bilateral TAP blocks with saline and Bupivacaine respectively after surgery. Patients received intravenous Tramadol as rescue analgesic and were assessed for pain and tramadol consumption at 1, 2, 4, 6 and 24 hours. Both the TAP and wound infiltration groups had lower pain scores at rest and on movement than the control group. They also found lower scores in the TAP group than the infiltration group at 6 and 24 hours. Total analgesic consumption was significantly lower in the TAP group.

In our study results are consistent with the results of the studies conducted by Siddiqui et al[14]. showed that TAP block reduced the need for postoperative opioid use and increased the time of first request for analgesia. This is also comparable to the following studies by Skjelsager et.al[9], Sivapurapu et.al[12], Tolchard et.al [15], which showed similar results. In our study TAP block group Paracetamol requirement as a part of multimodal analgesic is lesser (16.7%) as compared to the surgical wound infiltration group (40%).

The requirement of opioid, Fentanyl was lesser (3.3%) in the TAP block group than the surgical site infiltration group (20%). In a similar study conducted by Qingduo Guo[13] et al in patients who received TAP block, there was a notable reduction in the requirement of

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Morphine and Tramadol, respectively. In our study there was no difference in the sedation scores between the two groups.

Thus, summarising the part about hemodynamics in our study, we conclude that TAP block has negligible effects on heart rate and blood pressure and can safely be given even in patients who cannot tolerate haemodynamic instability. The results of the study with respect to haemodynamic changes are very much on the lines of previous notable studies such as the ones conducted by McDonnell et al.[16]

With respect our study in Group A patients there was no any side effect but in GROUP B patients, 1 of 30 patients had nausea and vomiting as side effect which is statistically significant. None of the patients in either group had hypotension, hypertension, bradycardia, hypoventilation, sedation, urinary retention, restlessness, dysphoria, hallucinations or any other side effects. McDonnell et al [16] in their study compared TAP block to a placebo and concluded that fewer patients in the active group reported nausea or received antiemetics; this is probably related to their decreased Morphine requirements.

Most studies have used opioid (Morphine, Fentanyl) as postoperative analgesia which may have shown increased incidence of side effects such as nausea, vomiting, pruritus etc. Ultrasound guided TAP block appears to be safe (injecting local anaesthetic into an intermuscular plane) but case reports have indicated that visceral injury can occur with both ultrasound- and landmark-guided TAP blockade.[17,18] The increased incidence of nausea in the control group may have been because of increased opioid consumption. This is important as nausea can prevent patients from early mobilisation. It may also delay discharge from hospital. TAP blocks may also be useful in patients who are more likely to experience postoperative nausea and vomiting.

CONCLUSION:

The TAP block with local anaesthetic is a more effective and safe technique for postoperative analgesia for lower abdominal gynaecological surgeries, compared to the surgical wound infiltration of the local anaesthetic agent. Also the need of Fentanyl in the 24hrs postoperative period is less in patients receiving TAP block. However, there was no significant difference between the sedation score and the side effects. The procedural simplicity of this block, along with reliable level of analgesia, longer duration as well as good quality of analgesia, with lesser opioid requirement and their side-effects makes the TAP block a good option for lower abdominal gynaecological surgeries.

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