ORIGINAL RESEARCH PAPER

Volume-8 | Issue-1 | January-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

CORRELATION OF POST-OPERATIVE PAIN SCORE FOLLOWING LOCAL ANAESTHETIC INFILTRATION VERSES USG GUIDED TRANSVERSE ABDOMINAL PLANE BLOCK IN PATIENTS UNDERGOING LOWER ABDOMINAL SURGERIES.

Anesthesiology

Dr Kumar Gaurav Consultant Surgery, BMMSH

Dr Gautam Chandra* Consultant surgery, BMMSH *Corresponding Author

Dr Sanjay Kumar verma Senior Consultant Anaesthesiology, BMMSH.

ABSTRACT

INTRODUCTION: USG guided TAP block is used widespread in providing good postoperative analgesia for the first postoperative day. In our study we assessed the efficacy of post operative pain scores following local anaesthetics infiltration verses USG guided TAP block in Patients undergoing abdominal surgeries. The procedure done was total abdominal hysterectomy, ovarian cystectomy, Laparotomy for ectopic pregnancy, appendecitomy, and cystolithotomy.

OBJECTIVE: To assess the efficacy of USG guided TAP block verses local infiltration for post operative analgesia during first 24 hours postoperative in patients undergoing lower abdominal surgeries.

PATIENTS AND METHODS: Three groups of patients were allocated randomly.(A) TAP block, who received bilateral TAP block using 20ml of .25% bupivacaine and (B) LA group who received local anaesthetic infiltration using 2oml of .25% bupivacaine and (C)control group.The routine postoperative pain management protocol of hospital using Inj.Diclofenac (75mg) IV 8 hrly and Inj Tramadol (100mg)IV SOS were administered to all patients. Visual Analogue Score (VAS) for pain assessment was done at 30 min, 1, 2,6,12 and 24 hour postoperatively and was compared among three groups.

RESULTS: Patients receiving Bilateral TAP block showed significantly less VAS score in comparison to other group and showed good postoperative analgesia and less consumption of pain medicine during first 24 hours.

CONCLUSION: Good analgesia effects and significantly less visual analogue score were observed in group of patients receiving bilateral TAP block with significant reduction in post operative analgesia requirement.

KEYWORDS

INTRODUCTION

Different modalities of pain relief is used including medications such as opiods,NSAIDS,Infiltarion of Local anaesthesia,epidural analgesia etc. Multimodal analgesia approach is required for adequate pain relief during part operative period. Side effects such as nasea,vomiting,stress response and commonly associated with use of systemic medications. Studies have shown the efficacy of TAP block, a safe regional analgesia technique in providing good post operative analgesia for first post operative period in lower abdominal surgeries.TAP block is a peripheral nerve block designed to anaesthetise the nerve supplying the anterior abdominal wall(T6—L1).It was first described by Rafian 2001 as a traditional blind landmark technique using the lumber triangle of petit.(18) Local anaesthetic is thus injected between the internal oblique and transverse abdominal muscle fascial plane .Performing TAP block under ultrasound guidance provides better localisation and drug deposition. Local infiltration of local anaesthetic around the surgical wound is also an analgesic technique widely used.(15,16)

METHODS

This study was undertaken in our hospital during June 2015 to July 2016.After taking approval from institutional ethical committee patients between the age group of 25 years to 65 years undergoing lower abdominal surgeries under general anaesthesia were enrolled. Exclusion criteria included patients in ASA 3 category and above, patient's coagulopathies, patients unable to express pain due to cognitive dysfunction etc. and patients already as preoperative analgesia. Three groups of patients were allocated randomanly in three different groups.Group-1 (TAP block) who received bilateral TAP block with 20ml of .25% Bupivacaine , Group -2(LA group) who received local anaesthetics infiltration with 20ml of .25% Bupivacaine and Group -3 (control group),who received invenous analgesia.The routine post operative pain management protocol of hospital with,Inj. paracetamol(1gm), Inj. Diclofenac (75mg)IV 8hrly and Injection Tramadol (100mg) IV SOS were administered to all patients.VAS score were compared within 30 mins. in recovery room, then 1hr,2hr,6hr,12 hr and 24 hr postoperatively.

RESULTS:

We have taken 236 patients in our study. The mean age for TAP block, Local infiltration and control group were as follows, 44.73± 12.33, 40.4± 11.44,41±12.23.The weight of patients in three group were 54.46±8.3,53.07±7.4,52.4±9.2.Majority of patients were ASA grade I with 68 patients in TAP block,64 patient in Local infiltration,68 were in central group,while 13 patient in TAP block,11 patients in local infiltration and 12 patient in control group were belongs to ASA garde II.(table:1) We have included total abdominal hysterectomy(TAH), ovarian cystectomy, laparotomy for ectopic, appdicetomy and open cystolithotomy. In laparotomy patient midline incision was given.Of 120 patient who underwent TAH,40 were in TAP block,40 were in local infiltration and 40 in control group.Out of 42 patient for ovarian cystectomy,22 were given TAP block,10 were given local infiltration and 10 in control group.Similarly out of 60 patients for laparotomy were included.Of which 26 underwent surgery for ectopic pregnancy and 34 patients were operated for appendicetomy.Of sixty patients 22 were given TAP block,18 local infiltrations and 20 were in control group. Six patients were given TAP block,4 patients were given local infiltrations and 4 patients included in control group in patients who underwent cystlithotomy.(table:2)

All the patient in three group ,VAS score was measured at 30 mins. 1hr, 2hr, 6hr, 12hr and 24 hr.(Table:3.We found the VAS score was significantly lower in TAP block block group compared to other two group.(p-).There were no complication related to the procedure noted in either group during the study period.

Table: 1 Demographic data

Patient data	TAP block	Local infiltration	Control	P value
Age(years)	44.73±12.33	40.4±11.46	41±12.23	
Weight(Kg)	54.46±8.3	53.07±7.4	52.4±9.2	
ASA I	68	64	68	
ASAII	13	11	12	

Table: 2 Operative procedures

TAH	40	40	40	120
Ovarian cystectomy	22	10	10	42
Laparotomy(Ectopic)	10	8	8	26
Laparatomy Appendectomy	12	10	12	34
Open cystolithotomy	6	4	4	14

Table: 3 VAS score

Time	TAP block	Local infiltration	Control group
30min	2	3	5
1	2	4	6
2	3	5	5
6	3	5	5
12	2	4	5
24	2	3	4

DISCUSSION:

Post operative pain management is one of the main concerns of both the surgeons and the patients,Different methods are in practice to have pain free such as local anaesthetic infiltration,epidural,peripheral nerve block and intravenous patient controlled analgesia.(11-14) TAP block, is an effective procedure for reducing pain for different types of lower abdominal surgeries(1).We performed the TAP block under ultrasound guidance,because,it is easy,reliable and safe.We performed the TAP block preoperatively before surgery and it was using mid axillary approach.Studies have shown that this approach ,dermatomes blocked are T12 to L2 (2-5).Studies have reported that there is significant reduction of VAS score with patient who received bilateral TAP block (2).The preoperative TAP block resulted in 63% reduction of intraoperative analgesic requirement and 54% reduction in early postoperative analgesic requirements(3,6-9).In our study we found that there is significant reduction of VAS score for 12 hrs and 24 hrs.Reduction of pain scores by at least 1.3 points in VAS score is considered significant with acute pain (10,11).Similar results were found by Ranjit et al.(17).Our study raise another important clinical question regarding time and cost.Local anaesthetic infiltration performed under direct visualization is simple and quick,Ultrasound guided TAP block is operator dependent and time consuming,thus future research are required to demonstrate the time requirements and cost efficiency of these two methods.

CONCLUSION:

Good analgesia effects and significantly less visual analogue score were observed in group of patients receiving bilateral TAP block with significant reduction in post operative analgesia requirement. Prolongation of TAP block can be done by using adjuncts or continuous catheter infusion. The block was having advantage over local infiltration and is one of the most promising method technique.

REFERENCES:

1. Petersen PL, Mathiesen O, Torup H, Dahl JB. The transversus abdominis plane block: A valuable option for postoperative analgesia? A topical review. Acta Anaesthesiol Scand 2010;54:529-35.
2. Carney J, Finnerty O, Rauf J, Curley G, McDonnell JG, Laffey JG. Ipsilateral transversus abdominis plane block provides effective analgesia after appendectomy in children: A randomized controlled trial. Anesth Analg 2010;111:998-1003.
3. El-Dawlatly AA, Turkistani A, Kettner SC, Machata AM, Delvi MB, Thallaj A, et al. Ultrasound-guided transversus abdominis plane block: Description of a new technique and comparison with conventional systemic analgesia during laparoscopic cholecystectomy. Br J Anaesth 2009;102:763-7.
4. McDonnell JG, O'Donnell B, Curley G, Heffernan A, Power C, Laffey JG. The analgesic efficacy of transversus abdominis plane block after abdominal surgery: A prospective randomized controlled trial. Anesth Analg 2007;104:193-7.
5. Niraj G, Searle A, Mathews M, Misra V, Baban M, Kiani S, et al. Analgesic efficacy of ultrasound-guided transversus abdominis plane block in patients undergoing open appendicectomy. Br J Anaesth 2009;103:601-5.
6. Siddiqui MR, Sajid MS, Uncles DR, Cheek L, Baig MK. A meta-analysis on the clinical effectiveness of transversus abdominis plane block. J Clin Anesth 2011;23:7-14. Ra YS, Kim CH, Lee GY, Han JI. The analgesic effect of the ultrasound-guided transverse abdominis plane block after laparoscopic cholecystectomy. Korean J Anesthesiol 2010;58:362-8.
7. Jensen K, Kehlet H, Lund CM. Post-operative recovery profile after laparoscopic cholecystectomy: A prospective, observational study of a multimodal anaesthetic regime. Acta Anaesthesiol Scand 2007;51:464-71.
8. Petersen PL, Stjernholm P, Kristiansen VB, Torup H, Hansen EG, Mitchell AU, et al. The beneficial effect of transversus abdominis plane block after laparoscopic cholecystectomy in day-case surgery: A randomized clinical trial. Anesth Analg 2012;115:527-33.
9. Ortiz J, Suliburk JW, Wu K, Bailard NS, Mason C, Minard CG, et al. Bilateral transversus abdominis plane block does not decrease postoperative pain after laparoscopic cholecystectomy when compared with local anesthetic infiltration of trocar insertion sites. Reg Anesth Pain Med 2012;37:188-92.
10. Bird SB, Dickson EW: Clinically significant changes in pain along the visual analog scale. Ann Emerg Med. 2001, 38 (6): 639-643. 10.1067/mem.2001.118012.
11. Atim A, Bilgin F, Kilickaya O, Purtuloglu T, Alanbay I, Orhan ME, Kurt E: The efficacy of ultrasound-guided transversus abdominis plane block in patients undergoing hysterectomy. Anaesth Intensive Care. 2011, 39 (4): 630-634.
12. Sivapurapu V, Vasudevan A, Gupta S, Badhe AS: Comparison of analgesic efficacy of transversus abdominis plane block with direct infiltration of local anesthetic into surgical incision in lower abdominal gynecological surgeries. J Anaesthesiol Clin Pharmacol. 2013, 29 (1): 71-75. 10.4103/0970-9185.105807.
13. Coughlin SM, Karanicolas PJ, Emmerton-Coughlin HM, Kanbur B, Kanbur S, Colquhoun PH: Better late than never? Impact of local analgesia timing on postoperative pain in laparoscopic surgery: a systematic review and metaanalysis. Surg Endosc. 2010, 24 (12): 3167-3176. 10.1007/s00464-010-1111-1. A
14. Gupta A: Local anaesthesia for pain relief after laparoscopic cholecystectomy–a systematic review. Best Pract Res Clin Anaesthesiol. 2005, 19 (2): 275-292. 10.1016/j.bpa. 2004.12.007.
15. Liu SS, Wu CL: Effect of postoperative analgesia on major postoperative complications: a systematic update of the evidence. Anesth Analg. 2007, 104 (3): 689-702. 10.1213/01.ane.0000255040.71600.41.
16. Sivapurapu V, Vasudevan A, Gupta S, Badhe AS: Comparison of analgesic efficacy of transversus abdominis plane block with direct infiltration of local anesthetic into surgical incision in lower abdominal gynecological surgeries. J Anaesthesiol Clin Pharmacol. 2013, 29 (1): 71-75. 10.4103/0970-9185.105807.
17. Ranjit S, Shrestha SK. Comparison of ultrasound guided transversus abdominis plane block versus local wound infiltration for post operative analgesia in patients undergoing gynaecological surgery under general anaesthesia. Kathmandu Univ Med J (KUMJ). 2014 Apr-Jun;12(46):93-6.
18. Rafi AN: Abdominal field block: a new approach via the lumbar triangle. Anaesthesia. 2001, 56 (10): 1024-1026.