Author’s response to reviews

Title: Comparative study of ultrasound-guided paravertebral block versus intravenous tramadol for postoperative pain control in percutaneous nephrolithotomy

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Version: 1 Date: 29 Dec 2017

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RESPONSE TO EDITOR AND REVIEWERS

Comparative study of ultrasound-guided paravertebral block versus intravenous tramadol for postoperative pain control in percutaneous nephrolithotomy

1. Editor comments

Manuscript entitled “Comparative study of ultrasound-guided paravertebral block versus intravenous tramadol for postoperative pain control in percutaneous nephrolithotomy” It is a good job but I have minor comments:

Response: We thank to Editor for valuable comments, and we have added your significant comments in the relevant sections.

1. Key words: some are written with initial capital and some are written with initial small. I recommend key words: Paravertebral block, Tramadol, Postoperative analgesia.

We have changed the key words as recommend in the abstract section.

2. Anaesthesia is written in British spelling except once written “Anesthesia” with American spelling in Table 1.
We have corrected the spelling error.

3. In statistical methods: The authors mentioned that “level of significance for all tests was considered 0.05” please add or less.

We have changed “level of significance for all tests was considered 0.05” with “the level of statistical significance was 0.05 in all tests.”

4. In page 9, line 7, 8: The authors write; “total PCA tramadol consumption was significantly lower in group P than in group T (p < 0.001) I can’t understand this P value. this P value.

We have corrected as p < 0.001.

5. In page 12, line 2: (662 patients; 20 adults, 42 children). The correct is 620 adults.

We have corrected as “620 adults” in page 12.

6. I wonder why authors used 0.5% bupivacaine while the patients need only analgesic concentration 0.25% in combination with general anesthesia.

We agree with your comments. However, in nerve blocks, recommended dose of bupivacaine is 0.25-0.5 %. There are studies using 0.5% bupivacaine or higher dosage ropivacaine before surgery in literature (2,3). A meta-analysis showed that bupivacaine and ropivacaine 0.5% are most commonly used for multiple or single injection of PVB, while levobupivacaine or ropivacaine 0.25% are as bolus and continuous infusion via a paravertebral catheter (4, 5). Additionally, we do not know that the minimum effective doses of bupivacaine for paravertebral block.

1. Berde CB, Strichartz GR. Local anesthetics. Miller.


7. In conclusion: The authors write “no complications was obtained by applying ultrasound-guided PVBs” The correct may be “no additional complications were obtained”.

We apologize for the grammatical error, and have corrected it as recommended.

2. Reviewer 1 comments

I enjoyed reading your perfectly structured manuscript. I agree, that paravertebral block can be used for postoperative analgesia in different kinds of operations and that it is superior to iv analgesia.

However, I think, that some points need to be improved.

Response: The authors thank to reviewers very much for their valuable and helpful comments to improve the manuscript. The following responses have been prepared to address all of the reviewers’ comments.

1. mgkg-1 should be corrected as mg/kg.

We have changed mgkg-1 with mg/kg in abstract and manuscript sections.

2. VAS confuses a bit, you mentioned a scale from 0-100, but all your data is from 0-10.

We apologize this error. We have corrected “Pain scores at rest were evaluated using VAS for pain (0 cm = no pain; 10 cm = worst pain imaginable).”

3. Anesthesia times are not statistically different, and also surgery times are similar. Did you measure time necessary to do the paravertebral block? How can your results end with an operation time of 87.0±36.3 min and an anesthesia duration of 94.8±36.7 min when you did a paravertebral block for 3 levels? Were all blocks performed by the same anesthesiologist? Please explain.

We have added this sentence “All blocks were performed by the same experienced anaestesiologist” in the method section.

The duration of PVB application was average 5 min before surgery. However, we did not record the durations of PVB intervention.

4. Did you ask the surgeons for their satisfaction? Maybe you could insert a comment or a result about that.
No, we did not evaluate patient and surgeon satisfaction. We have added a comment in discussion. “Second, we did not evaluate patient and surgeon satisfaction on the efficacy of PVB on pain. However, we think that pain relief methods and their effectiveness are an important issue in terms of patient and surgeon in the postoperative period.”

5 How much opioids did you use during anesthesia, did total fentanyl consumption differ?

We did not use opioids in the maintenance of anesthesia. For both groups, we can only explain that fentanyl (2 µg/kg) was used during induction to eliminate the stress response to airway.

6 What was your rescue analgesic additional to tramadol? Does your Institution use routine NSAID for multimodal analgesia?

In our institution, we generally prefer NSAIDs as rescue analgesic.

7 "The PCA doses of tramadol consisted of a bolus dose of 0.1 mg/kg-1 every 20 minutes without background infusion." Do you mean there was a lock of 20 min or did both groups receive tramadol every 20 min? Please explain in the Methods section. Since the tramadol doses differ related to the patients weight, you should include data about weight, BMI. Tramadol consumption should be expressed as x ± SD.

We have changed in relevant section.

a. “The PCA doses of tramadol consisted of a bolus dose of 0.1 mg/kg with a lockout interval of 20 minutes, no background infusion.”

b. “Total PCA tramadol consumption was 77.7 ± 60.5 in group P and 142.5 ± 61.0 in group T.”

c. – Weight: group P = 73.8 ± 12.7, group T = 74.5 ± 12.7, p value = 0.85.
   – The tramadol doses related to the patients weight: group P = 1.04 ± 0.8 (median = 0.8), group T = 1.98 ± 1.0 (median = 1.7), p value < 0.05

8 You wrote in the Discussions "However, we did not find that PVBs decrease these side effects, probably due to the small sample size of the study." as a comment to PONV. Did you observe PONV? You wrote, that you did not see any difference between the Groups. You should add a table containing the incidences of the complications (Pneumothorax, postoperative atelectasis, Blood trasfusions, ...) and undesired side effects (PONV, decrease in blood pressure, ...).

We have added Table 2 containing the incidences of the complications.
You wrote in the Background "However, nephrostomy tubes causing postoperative pain and prolonged hospitalization can cause Patient dissatisfaction"

How long was hospital stay? How was patients satisfaction? Please add a paragraph into your discussion.

We have added data about length of hospital stay in the method and discussion section and Table I.

Length of hospital stay: group P = 2.8±1.2 and group T = 3.9±2.7, p value = 0.06.

“Coopey et al. claimed that preoperative PVB shortens length of hospital stay after mastectomy plus immediate reconstruction [19]. However, we did not find that PVBs decrease these side effects and length of hospital stay, probably due to the small sample size of the study.”


Please discuss reference 6 also with the results of study 6. What did the authors find, what was different from your findings? It is not very clear.

“In a randomized prospective study, Ak et al. compared a PVB applied through a multilevel injection technique with morphine PCA consumption for PCNL, and they stated that thoracic PVB decreases morphine consumption and pain scores in the postoperative period [6]. These results support those of our study.”

You could also add a knowledge about how much in % did paravertebral block reduce Tramadol consumption compared to no regional analgesia into your discussion.

We have added a knowledge related to tramadol consumption in the discussion section.

“The total tramadol consumption was decreased by 45.5 % in the group P compared with the control group.”

Please add a sentence about your hemodynamical findings, if possible perioperative and postoperative, did you observe decrease in blood pressure measurements, were the patients diagnosed on Hypertension stable?

We have added a result in the discussion section.

“We did not encounter a significant decrease in blood pressure or heart rate with PVB during postoperative period. Moreover,”

Please improve your conclusion sentence, because paravertebral block is understood to provide better analgesia as a single method compared to iv Tramadol,
which is true; but you have to consider, that you have also used iv Tramadol in the paravertebral group.

We thanks to your opinion, and have changed related to sentence.

“In combination with iv tramadol in the postoperative period, ultrasound-guided PVBs with bupivacaine provides more effective analgesia than iv tramadol alone.”

3. Reviwer 2 comments:

Zehra et al. compared effectiveness of ultrasound guided paravertebral block (PVB) and tramadol on postoperative pain in patients who underwent PCNL. The manuscript was well-written and the experiment was well designed. I have several minor comments:

Response: The authors thank to reviewers very much for their valuable and helpful comments to improve the manuscript. The following responses have been prepared to address all of the reviewers' comments.

1. In the method section, the authors claimed that "If patients had a VAS score ≥ 4, intramuscular diclofenac sodium was administered as a rescue analgesic". In the result, "Thirteen patients (50%) had VAS scores < 4 in group P, while twenty-five patients (92.6%) had VAS score ≥ 4 in group T for the study period". If I understood correctly, the other thirteen patients (50%) in group P should have VAS scores ≥ 4. These patients should have been treated with diclofenac sodium. Yet, the authors stated "no additional analgesic was administered to any of the patients in group P" in the discussion. Did I miss anything? Can the authors explain?

We apologize for big mistake. We stated that the need of supplemental analgesia for T 2-4 h. For VAS=4, NSAID was not administered to any patient. NSAID was performed for VAS>4. We know that there is an important spelling, and the following statistical error. We recalculated for 24h, and have corrected as following:

1. In method, “If patients had a VAS score > 4, intramuscular diclofenac sodium was administered as a rescue analgesic.”

2. In result, “During follow-up, two patients (7.7 %) had in group P, while eight patients (29.6%) had VAS score > 4 in group T.”

3. In discussion, “additional analgesic was administered to two patient in group P.”

2. Can the author explain more clearly why "perform an evaluation using the pin-prick test would compromise the observer blindness”?

We apologize for big mistake, and we have removed this sentence. Because, pin-prick test cannot be done already in a sleeping patient.

3. Table 1 of the demographic data was uploaded twice.
Thank you. We have removed.