

Translational Research Urology

Home Page: www.transresurology.com

Editorial

Ultrasound-Guided Paravertebral Block compare to the Intravenous Tramadol for Pain Control in Percutaneous Nephrolithotomy

Vahid Shokohideh¹, Rahil Mashhadi^{2*}

¹Department of Medicine, Jiroft University of Medical Sciences, Tehran, Iran

²Urology Research Center, Tehran University of Medical Sciences, Tehran, Iran

HIGHLIGHTS

- Percutaneous nephrolithotomy (PCNL) is the standard stone treatment method.
- Intravenous tramadol is good candidate for pain control in percutaneous nephrolithotomy.
- Post-operative PCNL pain can cease by non-steroidal anti-inflammatory drugs (NSAIDs) or opioids.

ARTICLE INFO

Document type: Editorial

Receive Date: 09 June 2019

Accept Date: 30 July 2019

Available online: 17 August 2019

DOI: 10.22034/AU.2020.228227.1016

©2019Transresurology. All right reserved.

ABSTRACT

Percutaneous nephrolithotomy (PCNL) is a standard treatment method for large choroidal stones with a shorter hospital stay than surgical procedures. After PCNL, a nephrostomy tube is placed for better discharge urine, prevent bleeding, and allow for further possible operations, which is can be the major cause of pain and discomfort for the patient. Paravertebral block (PVB) is a successful, non-complicating local anesthetic that is used in many surgical procedures to manage pain. It is suggested that the use of PVB in reducing pain after PCNL has had good results. In the previous study, the important problem of post-PCNL pain reduction has been properly managed by the PVB method and its high efficacy contrary to tramadol has been demonstrated. Evaluation of the PVB method is a good choice in this regard, but the question arises as to why Tramadol is selected as a method compared to PVB.

Keywords: Pain Control; Percutaneous Nephrolithotomy; Nephrolithotomy

Editorial: Percutaneous nephrolithotomy (PCNL) is a standard treatment method for large choroidal stones (over 2 and a half centimeters) with a shorter hospital stay than surgical procedures (1, 2). After PCNL, a nephrostomy tube is placed for better discharge urine, prevent bleeding, and allow for further possible operations, which is can be the major cause of pain and discomfort for the patient. The resulting pain, in addition to the patient's discomfort and dissatisfaction, can lead to cardiovascular and cardiovascular problems for the patient (3, 4). Therefore, it is important to employ appropriate methods to reduce pain and managing the pain after PCNL in the best way.

The effective treatment of postoperative pain can reduce complications, hospital stay, recovery time, and costs (5). The most common treatment to reduce post-operative PCNL pain is the use of non-steroidal anti-inflammatory drugs (NSAIDs) or opioids that can be linked with some side effects (6, 7).

*Corresponding Author: Rahil Mashhadi

Email: rh_mashhadi@yahoo.com

Address: Urology Research Center (URC), Sina Hospital, Hassan Abad Sq., Tehran, Iran

Therefore, alternative approaches such as the use of topical pain reduction can be a good alternative to opioids and NSAIDs. Paravertebral block (PVB) is a successful, non-complicating local anesthetic that is used in many surgical procedures to manage pain (8-10). It is suggested that the use of PVB in reducing pain after PCNL has had good results (5).

In the research by Hatipoglu et al., the important problem of post-PCNL pain reduction has been properly managed by the PVB method and its high efficacy contrary to opioids (tramadol) has been demonstrated (11). Evaluation of the PVB method is a good choice in this regard, which is appreciated by the authors, but the question arises as to why tramadol is selected as a method compared to PVB. Also, given the adverse effects of tramadol (such as nausea, seizure, and serotonin syndrome) and its significant interactions with other drugs, several issues remain unclear in this study. Because tramadol reduces pain through reuptake inhibition of serotonin and norepinephrine and can have similar effects to antidepressants such as Venlafaxine (12). Two major side effects of tramadol, seizures, and serotonin syndrome, are increased when tramadol and antidepressants are used concomitantly (13). Thus, because Hatipoglu et al., did not address these exclusion factors, the ambiguity of tramadol use would be more pronounced, and the authors would feel strongly left blank if the authors included these in the study.

Authors' contributions

VSH was responsible for the study conception and design. RM wrote the manuscript.

Acknowledgments

Special thanks to Urology Research Center (URC), Tehran University of Medical Sciences.

Conflict of interest

The authors declare, there is no conflict of interest.

Funding

There is no funding for this article.

Ethical statement

Not Applicable.

Data availability

Not Applicable.

Abbreviations

PCNL Percutaneous nephrolithotomy
PVB Paravertebral block
NSAIDs Non-steroidal anti-inflammatory drugs

References

1. Akbay EK, Koç G, Filiz ND, Ün S, Akdeniz F, Yilmaz Y. Does a prilocaine 2% injection into the nephrostomy tract have a role in acute pain management after a lower caliceal puncture during a percutaneous nephrolithotomy? A prospective randomized study with 100 patients/PNL operasyonu alt kaliks girişi sonrası traktaya 2 prilokain enjeksiyonunun akut ağrı kontrolündeki etkinliği; 100 hastalık prospektif randomize çalışma. *Turkish Journal of Urology*. 2012;38(2):69.
2. Zanetti SP, Boeri L, Catellani M, Gallioli A, Trinchieri A, Sarica K, et al. Retrograde intrarenal surgery (RIRS), regular and small sized percutaneous nephrolithotomy (PCNL) in daily practice: European Association of Urology Section of Urolithiasis (EULIS) Survey. *Archivio Italiano di Urologia e Andrologia*. 2016;88(3):212-6.
3. Gokten OE, Kilicarslan H, Dogan HS, Turker G, Kordan Y. Efficacy of levobupivacaine infiltration to nephrostomy tract in combination with intravenous paracetamol on postoperative analgesia in percutaneous nephrolithotomy patients. *Journal of endourology*. 2011;25(1):35-9.
4. Yuan H, Zheng S, Liu L, Han P, Wang J, Wei Q. The efficacy and safety of tubeless percutaneous nephrolithotomy: a systematic review and meta-analysis. *Urological research*. 2011;39(5):401-10.
5. Ak K, Gursay S, Duger C, Isbir A, Kaygusuz K, Kol IO, et al. Thoracic paravertebral block for postoperative pain management in percutaneous nephrolithotomy patients: a randomized controlled clinical trial. *Medical Principles and Practice*. 2013;22(3):229-33.
6. Dundar G, Gokcen K, Gokce G, Gultekin EY. The Effect of Local Anesthetic Agent Infiltration Around Nephrostomy Tract On Postoperative Pain Control After Percutaneous Nephrolithotomy: A single-centre, randomised, double-blind, placebocontrolled clinical trial. *Urology journal*. 2018;15(6):306-12.
7. Tüzel E, Kızıltepe G, Akdoğan B. The effect of local anesthetic infiltration around nephrostomy tract on postoperative pain control after percutaneous nephrolithotomy. *Urolithiasis*. 2014;42(4):353-8.
8. Greengrass R, Buckenmaier III CC. Paravertebral anaesthesia/analgesia for ambulatory surgery. *Best Practice & Research Clinical Anaesthesiology*. 2002;16(2):271-83.
9. Jamieson BD, Mariano ER. Thoracic and lumbar paravertebral blocks for outpatient lithotripsy. *Journal of clinical anesthesia*. 2007;19(2):149-51.
10. Klein SM, Bergh A, Steele SM, Georgiade GS, Greengrass RA. Thoracic paravertebral block for breast surgery. *Anesthesia & Analgesia*. 2000;90(6):1402-5.
11. Hatipoglu Z, Gulec E, Turkcan M, Izol V, Aridogan A, Gunes Y, et al. Comparative study of ultrasound-guided paravertebral block versus intravenous tramadol for postoperative pain control in percutaneous nephrolithotomy. *BMC anesthesiology*. 2018;18(1):24.
12. Yalcin I, Aksu F, Bodard S, Chalon S, Belzung C. Antidepressant-like effect of tramadol in the unpredictable chronic mild stress procedure: possible involvement of the noradrenergic system. *Behavioural pharmacology*. 2007;18(7):623-31.
13. Hassamal S, Miotto K, Dale W, Danovitch I. Tramadol: understanding the risk of serotonin syndrome and seizures. *The American journal of medicine*. 2018;131(11):1382.

Author (s) biosketches

Shokohideh V, Professor., Department of Medicine, Jiroft University of Medical Sciences, Tehran, Iran.

Email: va.shokohideh@gmail.com

Mashhadi R, MSc., Urology Research Center, Tehran University of Medical Sciences, Tehran, Iran.

Email: rh_mashhadi@yahoo.com

Copyrights

©2019 The author(s). This is an open access article distributed under the terms of the Creative Commons Attribution, which permits unrestricted use, distribution, and reproduction in any medium, as long as the original authors and source are cited. No permission is required from the authors or the publishers



How to cite this article

Shokohideh V, Mashhadi R. Ultrasound-Guided Paravertebral Block vs. Intravenous Tramadol for Pain Control in Percutaneous Nephrolithotomy. *Translational Research In Urology*. 2019 Jul; 1(1):43-45.

DOI: [10.22034/AU.2020.228227.1016](https://doi.org/10.22034/AU.2020.228227.1016)

URL: http://transresurology.com/article_106627.html

