



Letter to the Editor

A commentary on “Minimally invasive percutaneous nephrolithotomy versus retrograde intrarenal surgery in surgical management of upper urinary stones – A systematic review with meta-analysis” (Int J Surg 2019;71:1–11)



ARTICLE INFO

Keywords:

Upper urinary stone

Minimally invasive nephrolithotomy surgery

Dear Editor,

We read with great interest the recently published meta-analysis by Jiao et al. [1]. The authors compared minimally invasive nephrolithotomy (MPCNL) with retrograde intrarenal surgery (RIRS) for treatment of upper urinary stones, and found that MPCNL had better effectiveness than RIRS, and both the two methods were safe. We do not agree with some of the conclusions drawn in this meta-analysis and some points deserve further discussion.

In the main analysis of the published article, the authors found that MPCNL was more effective on the stone-free rate. The stone-free rate is a time-dependent outcome. The longer is the duration of follow-up after surgery, the higher is the stone-free rate. The authors did not define the duration of follow-up and did not adjust its impact on the outcome. Although the authors found a significant difference on the stone-free rate between MPCNL and RIRS on statistical analysis, the effect was very weak with a RR of 1.11. We reanalyzed the data and adjusted the

duration of follow-up using meta-regression analysis and found no significant difference on the stone-free rates between the two groups (RR = 0.97, 95%CI: 0.84, 1.11). The duration of follow-up was positively associated with the effect (P = 0.04, Fig. 1). We believe further evidences are needed to form a solid conclusion.

We also do not agree with the conclusion the authors made on blood transfusion. After pooling the results of 5 trials, the authors concluded that “there was no remarkable difference between mini-PCNL and RIRS with respect to the blood transfusion”. Although the P-value was statistically insignificant when comparing MPCNL to RIRS, the effect was large (RR = 5) and it was clinical significant. Recently, researchers have commented that clinical significance should be more important than statistical significance [2]. We reanalyzed the data by the Peto method [3] and showed a significantly higher risk of blood transfusion for MPCNL compared to RIRS (RR = 7.62, 95%CI: 1.06, 54.91; p = 0.044).

Based on these results, we do not agree with the authors that MPCNL, when compared with RIRS, showed better effectiveness on the

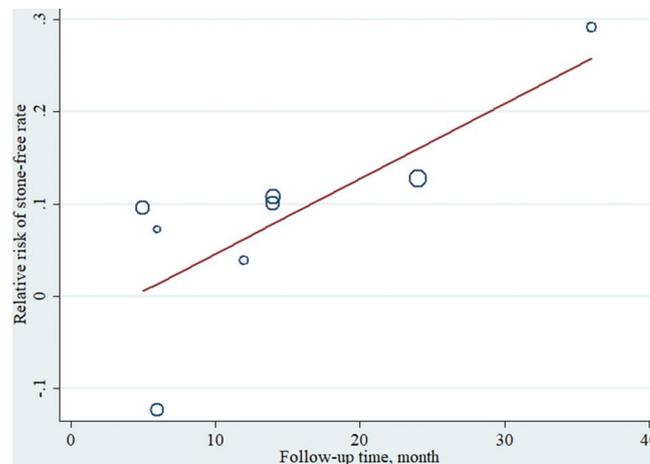


Fig. 1. The relationship between duration of follow-up and effect size (RR) by meta-regression.

DOI of original article: <https://doi.org/10.1016/j.ijjsu.2019.10.031>

<https://doi.org/10.1016/j.ijjsu.2019.10.030>

Received 26 September 2019; Accepted 2 October 2019

Available online 05 November 2019

1743-9191/ © 2019 IJS Publishing Group Ltd. Published by Elsevier Ltd. All rights reserved.

stone-free rate and it did not increase the risk of blood transfusion.

Provenance and peer review

Invited Commentary, internally reviewed.

Ethical approval

None.

Sources of funding

None.

Author contribution

Write the letter: Zheng-Yan Gao.

Trial registry number

None.

Guarantor

Zheng-Yan Gao.

Data statement

This a correspondence and there was no original data involved.

Declaration of competing interest

None.

References

- [1] B. Jiao, Z. Luo, X. Xu, et al., Minimally invasive percutaneous nephrolithotomy versus retrograde intrarenal surgery in surgical management of upper urinary stones - a systematic review with meta-analysis, *Int. J. Surg.* 71 (2019) 1–11.
- [2] V. Amrhein, S. Greenland, B. McShane, Scientists rise up against statistical significance, *Nature* 567 (7748) (2019) 305–307.
- [3] S. Yusuf, R. Peto, J. Lewis, et al., Beta blockade during and after myocardial infarction: an overview of the randomised trials, *Prog. Cardiovasc. Dis.* 27 (5) (1985) 335–371.

Zheng-Yan Gao
*Department of Urology, The Sixth People's Hospital of Yancheng City,
Yancheng, 224000, China*
E-mail address: gaozhengyan07@163.com.