

Peer Review File

Article information: <http://dx.doi.org/10.21037/tau-20-1009>.

Reviewer A

Comment 1: Referencing of phrase is missing on lines 67-68

Reply 1: Thank you for your reminding, I have added the referencing to the phrase.

Changes in the text: We have modified our text as advised (see Page 5, line 172)

Comment 2: I would like a little more development in the explanation of why the operative time is longer in the single use ureteroscope, since there are other publications that indicate the opposite.

Reply 2: Thanks for your suggestion. The potential reason for single-use FURS having a longer operative time may be its lower image quality scores. As is showed in the research of Kam⁽¹⁾, there was a significant difference in the visibility scores between three FURS group (URF-V2, LithoVue, PU3022A). For visibility scores the URF-V2 (4.8, 5% CI 4.0-5.0) outperformed both LithoVue (4.2, 95% CI 4.0-4.5) and PU3022A (3.9, 95% CI 3.44-4.4). Deininger et al via questionnaire to evaluate the image quality of FURS, the questionnaire addressed five subjective: image fidelity, light intensity, gray contrast, color contrast, image definition. The reusable FURS Flex-Xc achieved 5.0 points, compared to single-use FURS LithoVue (3.9 points) and PUSEN (4.1points)⁽²⁾. On account of the type of reusable FURS in each study we included were different, we added a subgroup analysis for single-use digital FURS and reusable FURS, the results showed that there was no significant difference

between single-use digital FURS and reusable FURS. LithoVue, PU3022A, ZebraScope are single-use digital FURS, Polyscope is single-use fiberoptic FURS. In addition, previous study found that the mean operative time was significantly longer in the fiberoptic FURS compared with digital FURS⁽³⁾.

Referencing:

- (1) Kam J, Yuminaga Y, Beattie K, Ling KY, Arianayagam M, Canagasingham B, et al. Single use versus reusable digital flexible ureteroscopes: A prospective comparative study. *International journal of urology : official journal of the Japanese Urological Association*. 2019;26(10):999-1005.
- (2) Deininger S, Haberstock L, Kruck S, Neumann E, da Costa IA, Todenhöfer T, et al. Single-use versus reusable ureterorenoscopes for retrograde intrarenal surgery (RIRS): systematic comparative analysis of physical and optical properties in three different devices. 2018;36(12):2059-63.
- (3) Somani BK, Al-Qahtani SM, de Medina SD, et al. Outcomes of Flexible Ureterorenoscopy and Laser Fragmentation for Renal Stones: Comparison Between Digital and Conventional Ureteroscope. *Urology* 2013 11;825(5)

Changes in the text: We have modified our text as advised (see **Page 9, line 257-261;**

Page 11-12, Line 311-336)

Reviewer B

Comment 1: Introduction:

- Line 52: Flexible “ureteroscopy”
- “With technical and optical improvements, FURS has become a more widespread approach for intrarenal stone removal. Furthermore, in some countries, FURS is used as a first-line treatment modality for renal stones”.

This paragraph is very ambiguous, because, even if it can be as a first line option, it should be specified the stone size according the guidelines or the stone volume.

Reply 1: Thanks for your suggestion. We have made correction according to your comments. According to the Urolithiasis EAU Guidelines on 2020, we have modified our text: With technical and optical improvements, FURS has become a more

widespread approach for intrarenal stone removal. Furthermore, in some countries, FURS is used as a first-line treatment modality for renal stones <20mm”.

Changes in the text: We have modified our text as advised (see Page 4, line 136)

Comment 2: Materials and methods

- “However, studies fulfilling any of the following exclusion criteria were excluded”

Redundant. You can say: studies that... were excluded.

Reply 2: Thanks for your suggestion. We revised these expression as follows:

However, studies that published as conference abstracts or posters; studies that failure to provided one of these outcomes of interest; or studies that including paediatric patients (<18 years old) were excluded.

Changes in the text: We have modified our text as advised (see Page 6, line 184-186)

Comment 3: Discussion:

- From line 211 to 213: There is another article in cadaveric specimens that you could include: [2]

Reply 3: Thanks for your suggestion, I have added the article as a referencing (1).

Referencing: (1) Proietti S, Dragos L, Molina W, Doizi S, Giusti G, Traxer O. Comparison of New Single-Use Digital Flexible Ureteroscope Versus Nondisposable Fiber Optic and Digital Ureteroscope in a Cadaveric Model. J Endourol [Internet]. 2016 Jun 1 [cited 2020 Sep 23];30(6):655–9. Available from: /pmc/articles/PMC4913498/?report=abstract.

Changes in the text: We have modified our text as advised (see Page 13, line 382)

Reviewer C

Comment 1: When reading the manuscript, it was noticeable that the method of retrograde intrarenal surgery (RIRS) was often confused with the instrument used to perform it (FURS). Please make it absolutely clear throughout the document which of the two definitions is meant. In your search routine RIRS was obviously taken into account, so that the 128 manuscripts represent the actual maximum of the search? Or was there an accidental mix-up or omission that could have falsified the search results?

Please clarify this!

Reply 1:

Definition:

Thanks for your suggestion. We are very sorry for our negligence. Considering the suggestion, we have made some explanations as follows.

RIRS: Retrograde intrarenal surgery, a surgical treatment for urinary calculi

FURS: Flexible ureteroscope, an endoscope that used for urinary calculi.

In my search routine RIRS was taken into account to broaden the search range, since there were some researches use RIRS represent the surgery that they used flexible ureteroscope instead of FURS⁽¹⁾. So that the 128 manuscripts represent the actual maximum of the search.

Referencing:

(1) Deininger S, Haberstock L, Kruck S, Neumann E, da Costa IA, Todenhöfer T, et al. Single-use versus reusable ureterorenoscopes for retrograde intrarenal surgery (RIRS): systematic comparative analysis of physical and optical properties in three different devices. 2018;36(12):2059-63.

Changes in the text: No Changes.

Comment 2: Furthermore, any assertions or assessments on your part should be supported by appropriate literature.

Reply 2: Thanks for your suggestion, we have added appropriate literature for some assertions and assessments.

Changes in the text: We have modified our text as advised (see **Page 4, line 136; Page 5, line 154, line 156, line 158; Page 11, line 347; Page 14, line 426, line 431, line431**)

Comment 3: In your illustrations, you should clearly indicate which parameter you are currently viewing and state in detail in the caption which statement you want to make here. Unfortunately, the illustrations were not always easy to understand. Please add the appropriate information here to make the value of your work accessible to a broad readership in this translation journal.

Reply 3: We are very sorry for our negligence of this part, we have added the appropriate information to the illustrations. At the end of our manuscript, we have added figure legends and table legends, giving every table and figure a named. A simple explanation of each tables and figures also included. Furthermore, in table 1, we have added

footnote for abbreviations.

Changes in the text: We have modified our text as advised (see Page 22-23, line 1070-1105)

Reviewer D

Comment 1:

This is a well-written, well-done study. The authors have addressed all questions of heterogeneity and attempted to look at each parameter separately. However, the difference in the studies and certainly the lack of sufficient RCTs makes it difficult to truly interpret the results here. I believe it is too soon for this paper. More RCTs must be done before the claims made here can be substantiated.

Reply 1: Thanks for your suggestion. As is discussed in our article, lacking of sufficient RCTs is one of the limitations of our research, but before more RCTs are done, this article would be a nice work for surgeons to learn more about the advantages and disadvantages of single-use FURS and reusable FURS. We are looking forward further large scale, well performed RCTs to verify our findings.

Changes in the text: No changes.