Author’s response to reviews

Title: Which is the Best Treatment of Pediatric Upper Urinary Tract Stones among Extracorporeal Shockwave Lithotripsy, Percutaneous Nephrolithotomy and Retrograde Intrarenal Surgery: A Systematic Review

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Author’s response to reviews:

Dear PhD. Robin,

Thank you for your letter of reviewers’ comments concerning our manuscript entitled “Which Is the Best Treatment Modality for Pediatric Upper Urinary Tract Stone among Extracorporeal Shockwave Lithotripsy, Percutaneous Nephrolithotomy and Retrograde Intrarenal Surgery: A Systematic Review and Meta-Analysis”. I am very pleased to learn that our manuscript may be acceptable for publication in BMC Urology with major revision. We have studied the comments carefully and have made correction which we hope to meet the approval. As to the language, we do have asked Prof. Deyi Luo to help us with the revision again (highlight text). He used to study in University of British Columbia as a visiting scholar. If you think the revision is still not fluent enough in English, we would make a revision with a more professional help.

We look forward to hearing from you.

With kind regards,

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Responds to the Reviewer #1

Thanks for your favorable comments. Firstly, the spelling and grammatical errors has been corrected to meet your approval (highlight text). Secondly, the heterogeneity among included studies in this study, as the main limitation, has been mentioned in discussion part (Discussion section, line 312, page 15). Finally, the low number of relevant studies limited to execute a sufficient analysis.

Responds to the Reviewer #2

Thanks for your kindly comments. We have made some corrections as follow:

1. The sentence has been overwritten (Background section, line 69, page 4).
2. The sentence has been overwritten (Background section, line 78, page 4).
3. The sentence has been overwritten (Background section, line 82, page 4).
4. The discussion of management for distal ureteral stones has been deleted (Basiri et al).
5. The sentence has been overwritten (Discussion section, line 260, page 12).
6. ALARA principles mandated that maximum effective dose should not exceed 50 mSv in any 1-year period, and an average dose less than 20 mSv per year over any 5-year period. We have made a correction (Discussion section, line 284, page 13).

Responds to the Reviewer #3

Thanks for your valuable advices and contributions. We have made some corrections as follow:

1. The spelling and grammatical errors have been corrected (highlight text). If you think the revision is still not fluent enough in English, we would make a revision with a more professional help.
2. The potential biological effects of SWL have been expounded in discussion part (Discussion section, line 247-256, page 12).
3. The URS in line 164 has been corrected.
4. All included studies give the complete SF rates except one (study 22) which gives the SF plus CIRF. (Results section, line 158, page 8)

5. The stone burdens are not similar in these comparative studies. We have mentioned this limitation in discussion part (Discussion section, line 313, page 15). And we also made a subgroup analysis according to stone size $\leq 2$ cm to increase the comparability of these procedures.

6. Although SWL is mainly performed under ultrasonographic guidance, some studies (Ref 17, 18 and 21) also perform SWL using fluoroscopic guidance. Nevertheless, the impact of USG-guided SWL was described in discussion part (Discussion section, line 290, page 14).

7. At the last of discussion, we have mentioned the complexity of urinary stone management (Discussion section, line 322, page 15) according to your useful suggestion.

8. We have modified the title to be “Which Is the Best Management of Pediatric Upper Urinary Tract Stone among Extracorporeal Shockwave Lithotripsy, Percutaneous Nephrolithotomy and Retrograde Intrarenal Surgery: A Systematic Review”.

9. Thanks to your valuable advice. We have done a comparison involving EQs among these treatments (Results section, line 194, page 9). As the EQ of RIRS is almost less than 50%, RIRS patients need more sessions to reach stone free (Discussion section, line 298, page 14).

10. In this paper, we want to talk about the development of RIRS, especially FURS (Background section, line 83, page 4). Nowadays, this technique has become more advanced than first generation, with smaller diameter, more excellent optical property, and relative wider range of motion.

Responds to the Reviewer #4

Thanks for your helpful advices. These corrections have been made to meet your approval as follow:

1. The spelling and grammatical errors have been corrected (highlight text). If you think the revision is still not fluent enough in English, we would make a revision with a more professional help.

2. This sentence has been overwritten (Background section, line 59, page 3).

3. This sentence has been overwritten (Background section, line 92, page 5). Besides, we have added the comparison results of effectiveness quotients among these treatments (Results section, line 194, page 9).
4. Firstly, the pooled data were calculated using fixed effects model. As low number of included studies, the sensitivity analysis was not performed. If there is heterogeneity, the pooled data were calculated with random effects model to generate the most conservative estimate. And the subgroup analysis was also conducted to reduce the heterogeneity of results.

5. It is a valuable advice. However, it was impossible to conduct a network meta-analysis since there was no enough relevant RCTs.

6. Firstly, we want readers to be clear about all the study indicators (SFR, complication rate, retreatment rate, effectiveness quotient, etc.), so we use the indicators as the subheadings. Then, we conduct a subgroup analysis according to stone size $\leq 2$ cm to increase the comparability of these procedures. In addition, “PCNL vs SWL”, “RIRS vs SWL” and “PCNL vs RIRS” are used as the subheadings in subgroup analysis results.

7. We want to provide information as much as possible. And the figures have the information about author, the pooled data, the data of each study, the result of heterogeneity, and 95% CI. If it is necessary, we could make a revision with providing side-by-side tabular form to summarize results.

8. We have declared the selection bias of non-randomized studies in discussion part (Discussion section, line 310, page 15).