

## Peer Review File

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### Reviewer A

Major

#### **Comment 1:**

There are many nomograms that predict URS results. Therefore, the following expressions are not appropriate “However, nomograms used to predict the outcomes of ULT are still scarce.” in Page5 line3-4.

Please describe the novelty of this nomogram.

**Reply 1:** Thank you so much for your careful check. We have deleted the inappropriate expression. It had been widely accepted that the general characteristics of the population affected the predictive accuracy of the nomogram. We constructed a nomogram that could distinguish high-risk patients who would have residual stone fragments based on the Chinese population to achieve better application ability. Besides, our nomogram found that urinary tract infections associated factors may play an important role in increasing the risk of stone-residual fragments. The above unique features can be the novelties of our nomogram. More descriptions have been included in the revised manuscript.

**Changes in the text:** Page 5 line 3, Page 13 line 4-11.

#### **Comment 2:**

Please clarify the definition of residual stone. Are the postoperative evaluation images CT or KUB? Is stone free no stone fragmentation? Also, I don't understand the meaning of the following part, “The cases that were found with residual stone fragments in the subsequent removal procedure of double-J stents were also included in the residual stone category.” in Page6 line21-22.

**Reply 2:** Since we did not express it clearly, we are sorry for your misunderstanding. In fact, residual stone was clinically defined as the absence of postoperative stone fragments bigger than 2 mm, which can be checked radiologically and nephroscopically. We have revised the text to address your concern and hope that it is now clearer.

**Changes in the text:** Page 6 line 15-18.

#### **Comment 3:**

It is important to note the targeted stones (renal, ureteral, or both) and the treatment method (rigid or flexible URS). Please clearly state which type of surgery (rigid or flexible URS) for which type of stone (kidney, ureter, or therapy). Please refer to this article (Transl Androl Urol. 2022,11(8):1071-1073)

**Reply 3:** Thanks for your kind suggestions, which are valuable for improving the accuracy of the manuscript. To further note the targeted stones and the treatment methods, more detailed statement of the surgical procedures has been added in the Methods part. Certainly, the suggested article provides enough understanding

about the predictors of residual stone after ureteroscopy for urolithiasis and we have added related articles in the reference part.

**Changes in the text:** Page 7 line 5-8. Reference 36

Minor

**Comment 1:**

The term ureteroscopy (URS) is the more common, not ureteroscope lithotripsy (ULT).

**Reply 1:** Thanks a lot for the reviewer's comments. We have changed ureteroscope lithotripsy (ULT) to ureteroscopy (URS) as suggested.

**Changes in the text:** Everywhere the word appears.

**Comment 2:**

Are fragmented stone pieces retrieved with a basket catheter?

**Reply 2:** We feel sorry for the inconvenience brought to the reviewer. Actually, the fragments stone pieces would be retrieved with a basket catheter when we conducted stent removal. We have revised the text and added related statement to address your concern.

**Changes in the text:** Page 7 line 15-17, Page 7 line 21.

**Comment 3:**

Flexible URS is important for the treatment of upper ureteral stones in some cases. What type of stones did you use flexible scope in this study?

**Reply 3:** We think this is an excellent suggestion. We tended to utilize flexible ureteroscope and ureteral access sheaths to deal with upper ureteral calculi or renal calculi. We have added the use of flexible URS in the methods part.

**Changes in the text:** Page 7 line 15-17.

**Comment 4:**

Please correct the content listed in the results as there is some content of method.

**Reply 4:** We are very sorry for our negligence and we have deleted some redundant descriptions in the results part.

**Changes in the text:** Page 9 line13-18.

**Reviewer B**

I commend the authors for looking this gap in the literature. Stone free rates after ureteroscopy have historically been overestimated and your results are closer to real world stone free rates.

There are gaps in your methodology, and I found it difficult to fully understand your protocol. Some of your conclusions do not align with your data or are overstated based on the limitations of the study. As your manuscript is currently written, I do not see how it adds to the literature or improves on other nomograms that have been previously published. Some suggestions include increasing the

number of participants and using CT for all postoperative imaging to confirm stone free rates.

This manuscript is poorly written with typos and odd word choice. They also make claims/conclusions that are not supported by their data or are not true. Their statistical analysis looks thorough at first glance, but by using Akaike cut off for their logistic regression influenced the results of their model. They also failed to explain the discrepancy between the variables that were significant in the univariate analysis (Hounsfield units, stone size and OR time) that did not make it into their model.

Overall, I do not think this manuscript meets the high standards for the journal for publication. This nomogram has less participants than prior studies in this area and does not add to the literature in any way. I do not see how this would have clinical applicability and would supplant the nomograms previously published.

**Reply:** We appreciated the reviewer's insightful suggestions. We will keep your comments in mind and prefer to modify our model in the following works.

#### **Review C:**

**Comment 1:** In the methods, can you please clarify the difference between training and independent groups? Do these differentiate in terms of surgeons' experience?

**Reply 1:** We are sorry for the unclear expression. In fact, cases were divided randomly according to the ratio of 7:3 (70% for training group and 30% for testing group) and there were no significant differences between training and independent testing group in terms of routine treatment procedure and attending physician. Related expression has been added in the Methods part.

**Changes in the text:** Page 5 line 16-17, Page 6 line 21-22.

**Comment 2:** In the methods there is no mention of Ureteric access sheath insertion.

**Reply 2:** We sincerely thank the reviewer for careful reading. The ureteric access sheaths play important roles in improving irrigation flow and maintaining a lower intrarenal pressure with minimal associated morbidity. We have added more detailed description of the use of ureteric access sheaths in the Methods part.

**Changes in the text:** Page 7 line 7-8.

**Comment 3:** Also normally holmium yag laser requires 200  $\mu\text{m}$  fibres, why do you use 400?

Can you describe your setting? Do you perform dusting or fragmentation?

**Reply 3:** We feel sorry for our carelessness. In our resubmitted manuscript, the mistake is revised. Based on your comments, we have made the corrections and added more detailed statement about the machine setting and surgical procedures in the Methods part.

**Changes in the text:** Page 7 line 11-13.

**Comment 4:** You come with interesting results. I'm not sure why size and hounsfield units are not part of your final predictive model and nomogram. In my view, these are more relevant than hypertension and WBC.

**Reply 4:** Thank you for pointing out this problem in our manuscript. We also consider stone size and Hounsfield units are related with stone free rate. We formerly evaluated stone size through according to the ellipsoid volume calculation formula ( $\pi / 6 \times a \times b \times c$ ). But we chose the length of diameters of stones to evaluate stone size later and found the predictive value of transverse diameter of stone. Thus, we modified our model and regarded stone size as an important factor of the nomogram. However, the relationship between Hounsfield units and residual stone rate cannot be confirmed according to our algorithm. Related amendment can be seen in the revised manuscript.

**Changes in the text:** Table 1-2. Figure 2-4. Page 10 line 11-19.

**Comment 5:** Also can you please explain the relation between hypertension and stone free rate?

**Reply 5:** Thank you for pointing this out. Previous studies discussed that hypertension was associated with the incidence of urolithiasis. However, there is no reasonable explanation for the relationship between hypertension and stone free rate in the published literature. We will pay close attention to the research in this question in the future.

**Comment 6:** What are the conclusions of your paper? How can this help to improve our results?

**Reply 6:** Thank you for your question. We successfully constructed a nomogram to evaluate the risk of RSR after URS with superior discrimination, excellent calibration abilities and great clinical benefit. The five factors included in the model were WBC, Hypertension, Transverse diameter of stone, Stone location and Hydronephrosis. The nomogram had high potential application to identify high-risk patients who may suffer from postoperative stone burden in advance. Related presentation has been added in the ORIGINALITY AND CLINICAL IMPACT part.

**Changes in the text:** Page 13 line 20.