

Peer Review File

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Reviewer A

Urinary retention is a frequently encountered urological problem after certain surgeries. Urinary catheterizations are frequently preferred to eliminate these problems. In addition, both catheterizations have certain advantages and disadvantages. I think the subject is important and the study will contribute to the literature. However, there are some points that I do not understand and my suggestions;

1.Comment: In the abstract, it should be stated that the articles published between which dates are searched.

Reply: Thank you very much for your valuable suggestions.

Changes in the text: we have made corresponding revisions. (See Page 1, line 33)

2.Comment: The introduction should be shortened, too much detail is given. For example; The paragraph describing suprapubic catheterization is unnecessary. these details should be used in the discussion section.

Reply: Thank you for your valuable suggestions, and we have revised it according to your friendly suggestions.

Changes in the text: we have made corresponding revisions. (See Page 3-4, line 70-92)

3.Comment: Instead of "we conducted" statements such as "it was conducted in this study" should be used. The entire article should be checked from this perspective.

Reply: Thank you for your valuable suggestions, and we have revised it according to your friendly suggestions.

Changes in the text: we have made corresponding revisions. (See Page 1, line 28 and Page 8, line 250)

4.Comment:6 page at line 173, “No restrictions were imposed on language or regions, and the search period was from the inception of the databases to November 2022.” How was it done without language and time limitations? How were the articles examined in such a wide range of dates? Which languages were taken in terms of language, will there be no limitations in terms of languages that were not received? Time and language limitations are important when searching. It should be clarified and explained by the authors.

Reply: Thank you very much for your comments, and we apologize for the lack of detail in our description. The search period was from the inception of the database to November 2022, and there was no restriction on the region where the articles are published. The language of the search is limited to English and Chinese. English is the most widely used language at present, and Chinese is not a language barrier for us, so in addition to searching the English databases, we also searched Chinese databases for a wide search of literature.

Changes in the text: we have made corresponding revisions. (See Page 5, line 147-149).

5.Comment: The findings and discussion are very clear and well organized.

Reply: Thank you very much for your recognition of our research.

Reviewer B

I do not think the findings are particularly novel, which is a weakness of the paper. I also think the structuring of the paper could use quite a bit of work with reduction of unnecessary detail in the introduction and conclusion, and more detail added on heterogeneity of outcomes in included studies as well as addressing any heterogeneity in the definition of retention for the methods section (see below for comments).

Introduction:

- The introduction is wordy and has two paragraphs dedicated to the discussion of postpartum urinary retention which is not relevant to this paper on post-operative urinary retention after gynecologic surgery. I would recommend removal of these paragraphs (lines 70-92). I would also recommend not discussing suprapubic catheterization in the introduction as this is irrelevant to the paper's topic (lines 116-127)

Reply: Thank you very much for your friendly and constructive comments, and we have revised the formats in the manuscript according to your suggestions.

Changes in the text: We have deleted lines 70-92, and 116-127 from the previous manuscript according to your suggestion. (See Page 3-4, line 70-92)

- Overall, I would recommend a more concise introduction with a focus on what is missing from the data and less on pathophysiologic underpinnings of urinary retention in different clinical scenarios.

Reply: Thank you very much for your friendly and constructive comments, which make our revisions more targeted.

Methods:

- I recommend greater detail regarding the heterogeneity of outcomes in the RCTs discussed and how this was accounted for, as well as heterogeneity in the definition of urinary retention.

Reply: Thanks to your valuable suggestions. We have added some description regarding the heterogeneity and the different definitions in urinary retention in the Methods section.

Changes in the text: we have made corresponding revisions. (See Page 6, line 154-158 and Page 7, line 196-207)

- Line 249: I question whether vaginal delivery should be considered “postoperative urinary retention after gynecologic surgery” especially in light of epidural use

Reply: We thank you for your suggestion. According to our knowledge, gynecological procedure includes routine and special procedures. Special procedures include assisted vaginal delivery, which involves specialized anesthesiologists and obstetricians and gynecologists. We reviewed the 2 included studies on vaginal delivery, which did not mention whether epidural analgesia was used. We included postoperative urinary retention because it was also very important and we did not find a reasonable basis for exclusion. We excluded these 2 articles and performed a statistical analysis again, and they did not change our findings. We will pay special attention to studies involving spontaneous births in future, considering that the case you cite is very relevant, and thank you again for pointing out our shortcomings.

- Line 315: What does anterior vaginal catheterization refer to?

Reply: Thank you for your valuable question, we are sorry for the language description error, “anterior vaginal catheterization” should be “anterior colporrhaphy”.

Changes in the text: we have made corresponding revisions. (See Page 10, line 296)

Discussion

- This section is quite long and may benefit from being more concise with reduced detail on general UTI knowledge, for example.

Reply: Thank you very much for your friendly and constructive comments, and we have revised the formats in the manuscript according to your suggestions.

Changes in the text: we have made corresponding revisions. (See Page 12, line 361-363)

Reviewer C

The authors present a systematic review and meta-analysis looking at rates of UTI after gynecological surgery as related to use of CIC versus indwelling urinary catheter.

Introduction:

Would change word choice of “swelling” in paragraph one to “distension” as swelling tends to indicate induration/edema, which I believe is not the case in the scenario described.

Reply: Thank you for your valuable suggestions, and we have revised it according to your friendly suggestions.

Changes in the text: we have made corresponding revisions. (See Page 3, line 64)

Paragraph 2: “mostly recognized” is unfamiliar wording to me, not sure that describes the current status. Perhaps “primarily recognized” or “commonly described” may be a better fit.

Reply: Thank you very much for your suggestion. Considering the logic and organization of the Introduction section, we have decided to remove this section for improvement of readability.

Paragraph 2: I believe “mental changes” may be a typo, may be referring to “maternal changes” here?

Reply: Thank you very much for your suggestion. Considering the logic and organization of the Introduction section, we have decided to remove this section for improvement of readability.

Paragraph 5 re: indwelling catheterization. Would change “Meanwhile, patients should replace” to different tense as this is not an instructional section. “Patients with indwelling catheters may need to replace” etc.

Reply: Thank you for your valuable suggestions, and we have revised it according to your friendly suggestions.

Changes in the text: we have made corresponding revisions. (See Page 9, line 96)

Overall organization of the introduction section can be improved. The paragraph transitions are abrupt and do not clearly state the purpose of each section, making it awkward for the reader to follow. While the content organization makes sense, the grammar causes the reader to feel like the authors are jumping haphazardly from point to point. Perhaps sub-sections with titles may be helpful, i.e., “Mechanisms of Postoperative Urinary Retention”, “Current management strategies”, etc.

Reply: Thank you very much for your suggestion and we have adjusted the overall content of the introduction section.

Changes in the text: we have made corresponding revisions. (See Page 3-4, line 70-92)

Key information regarding current practice trends is missing in the introduction. Why should I care about this study and what are current practitioners doing?

Reply: Thank you for your valuable suggestions, which make our manuscript more readable, objective, and rigorous. In actual clinical practice, retention catheterization was much earlier, and is simple and familiar to most hospital staff. It is therefore used mostly for bladder drainage postoperatively. However, retention catheterization is related to a higher incidence of urinary tract infections, and it is usually not likely to be the best treatment option for patients. Although there are guidelines that recommend intermittent catheterization to reduce a range of complications such as urinary tract infections, and intermittent catheterization is practical for both physicians and caregivers. Unfortunately, however, there is a lack of sufficiently reliable data on this issue, which hinders the development of appropriate bladder management guidelines based on evidence of high-quality. Therefore, we conducted this systematic review to assess the effectiveness and safety of clean intermittent catheterization and transurethral indwelling catheterization in patients with urinary retention after gynecological surgery to provide better evidence-based evidence for clinical treatment.

Changes in the text: We have supplemented these in the introduction. (See Page 4-5, line 116-124)

The methodology for the meta-analysis appears to be sound without any glaring errors.

Reply: Thank you very much for your affirmation.

It is a little confusing that “Recovery of bladder function” and “residual urine volume” are separate categories. As the authors state in the discussion, a significant number of cases utilize low residual volume as return of function. This may have had some impact on the inconsistency in the analysis for recovery of function. The discordant findings between cervical cancer and other surgeries are addressed somewhat in the discussion, but does not provide clear explanation for the divergence.

Reply: Thank you very much for your valuable comments. In the included studies, the basis for determining recovery of bladder function was mainly divided into 2 categories, namely the one based only on whether the residual urine volume was below 100 ml as the criteria for recovery, and the other one based on the results of the urodynamic examination, which took into account not only the residual urine volume, but also included urethral manometry, pressure-flow rate, urinary flow rate, the bladder compliance, and bladder pressure volume. In conclusion, the inconsistency in the basis

of judgment may be an important reason for the moderate heterogeneity of our Meta-analysis results ($I^2=52.3\%$, $P=0.040$).

Changes in the text: We have added relevant content to the Discussion according to your suggestion. (See Page 13-14, line 416-426)

Other meta-analysis looking at this question are mentioned in the discussion. How does this study differentiate itself from prior studies of this kind?

Reply: Thank you for your valuable suggestions. Among the previous 2 meta-analyses, 1 meta-analysis included 2 RCT studies comparing intermittent catheterization and indwelling catheterization (1 cesarean section, 1 joint replacement), and the other meta-analysis included 4 RCTs comparing intermittent versus indwelling catheterization (1 cesarean section and 3 joint replacements). Due to differences in the type of surgery and gender, as well as the limited number of studies, there is some heterogeneity in the pooled results merging of these two meta-analyses, which limits the promotion of the findings. In our meta-analysis, the population is limited to patients after gynecological surgery, and we searched a larger scope of database, included a larger number of studies, and provided stronger evidence.

Changes in the text: We have added relevant content to the Discussion according to your suggestion. (See Page 11, line 340-358)

Overall discussion is also a bit wordy. A lot of detail on UTI, for example, that seems to be not necessary in this level of article.

Reply: Thank you for your valuable suggestions, which make our manuscript more readable, objective, and rigorous. We have removed some content about the pathogenesis of UTI in the manuscript.

Changes in the text: we have made corresponding revisions. (See Page12, line 361-363)

The authors discuss the psychological impact of having an indwelling catheter. I am curious if there is any data on the psychology of having to perform CIC? In practice, it seems like it may be more difficult to convince patients to self cath than to just place a catheter.

Reply: Thank you for your meaningful comments. Unfortunately, although we conducted a comprehensive search, it was difficult to obtain data on the psychology of having to perform CIC, and only descriptive textual information was obtained. Some scholars have found that the number of urinary retention patients with who choose indwelling catheterization gradually decreases (17.8% to 2%) from the early stage to the late stage of recovery, while the number of patients who use intermittent catheterization gradually increases (21.6% to 37.7%). When patients initially required

CIC, most of them described feelings of worry, shock, fear, and depression, and deemed it as an invasive and daunting procedure. However, if nurses can provide sufficient professional information, intensive training, active support and regular follow-up, patient will be more willing to receive the procedure and build a sense of "self-empowerment", which tends to be associated with less depression and greater adaptive behavior in patients.

Overall study is interesting and suggests underutilization of CIC in these postoperative patients. However, there would be greater impact in discussion if current utilization trends were addressed.

Reply: Thank you very much for your affirmation of our study, and we also hope that the reliable evidence in this study can provide slight support for the clinical application of intermittent catheterization.

Reviewer D

1. Reporting Checklist

The table 2 in PRISMA checklist is ONLY related to the information in the abstract. Please check and revise the whole table 2. If it is not applicable in abstract, please fill with "N/A".

OTHER			
Funding	11	Specify the primary source of funding for the review.	Page 16/ line 528 Funding
Registration	12	Provide the register name and registration number.	Page 5/ line 154-155 Methods/ Para 1

Reply: Thank you very much for your reminder, and we have revised it.

2. Main text

Please remove this sentence as it is the same meaning as the above one, and please cite the (19) to the end of the introduction.

203 provide more powerful evidence for the clinical management of this condition. We
204 present this article in accordance with the PRISMA reporting checklist (available at
205 <https://tau.amegroups.com/article/view/10.21037/tau-23-220/rc>. (19)
206 ←
207 **#Methods** ←
208 (This research was conducted in accordance with the guidelines of the Preferred
209 Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (19).) remove

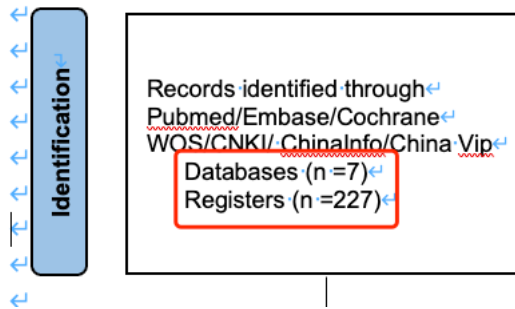
Reply: Thank you very much for your comments, and we have revised it.

3. Figure 1

a) The data in figure 1 is not the same as main text, please revise.

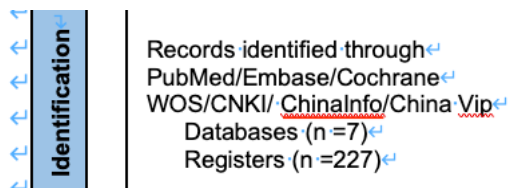
##Literature screening results

A total of 227 articles were retrieved from the seven described databases, of which 43



Reply: Thank you very much for your comments, and we have revised Figure 1.

b) Please unify the name of database.



211 ##Database search

212 The search strategy employed in this study adopted the combination of subject words
 213 and free words for retrieval from seven medical databases: PubMed, Web of Science,
 214 Cochrane library, Embase, China National Knowledge Infrastructure (CNKI), Wanfang
 215 Data, and the Chinese Scientific Journal Database (VIP). The search language is limited

Reply: Figure 1-revised. Your suggestion is greatly appreciated, and we have revised it in the manuscript and added an attachment: Figure 1-revised

4. Table 1

a) Please add the description to the table footnote that how the data are presented in table.

IC	50	50	48.14±8.35	47.85±8.42	Endometri
IC	30	30	65.34±3.08	65.08±3.07	Cervical
IC	36	40	28.11±3.69	28.20±3.35	Vaginal c

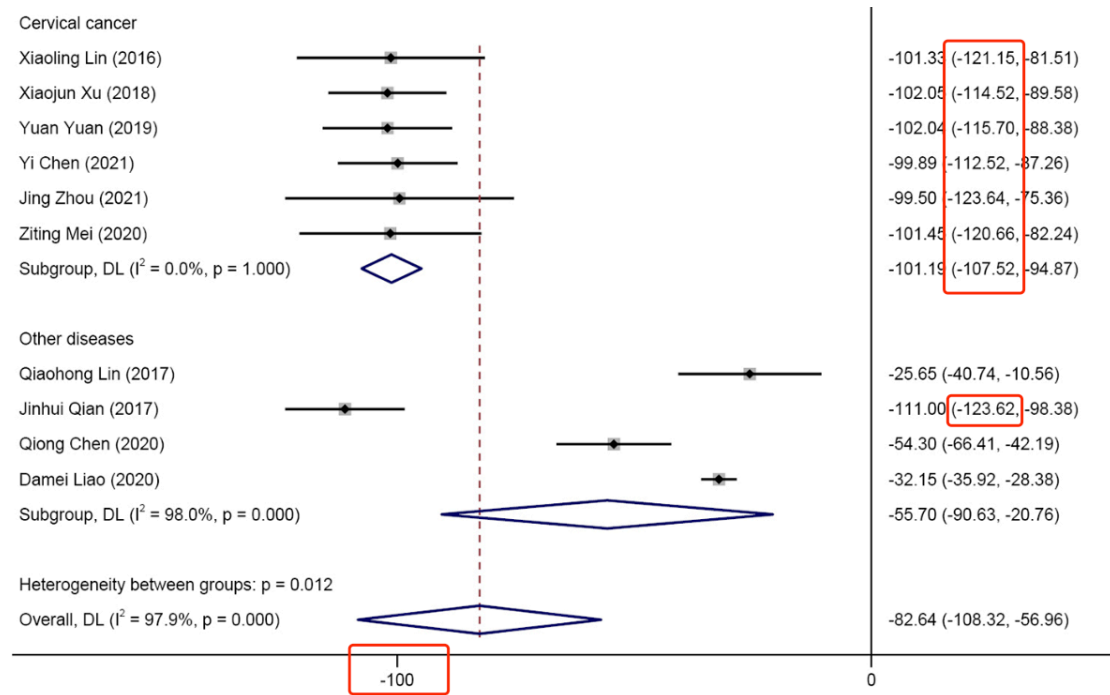
Reply: Thank you very much for your suggestion. We have revised Table 1, and the revision example is shown in the figure below.

Zhan HM [□]	2016 [□]	China [□]	single-center [□]	CIC [□]	TIC [□]	43 [□]	36 [□]	44.45±13.21 [□]	45.61±11.28 [□]	Cervical cancer [□]	14 days [□]
Zhou [□]	2021 [□]	China [□]	single-center [□]	CIC [□]	TIC [□]	30 [□]	30 [□]	No statistical difference [□]		Cervical cancer [□]	12 weeks [□]
Zhu XQ [□]	2021 [□]	China [□]	single-center [□]	CIC [□]	TIC [□]	49 [□]	51 [□]	49.67±10.07 [□]	48.06±9.55 [□]	Cervical cancer [□]	NM [□]

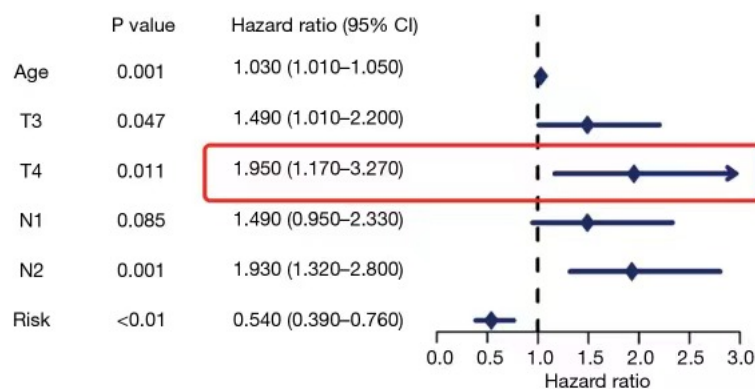
*NM: not mentioned; CIC: clean intermittent catheterization; TIC: transurethral indwelling catheterization; age (mean ± standard deviation)

5. Figure 5

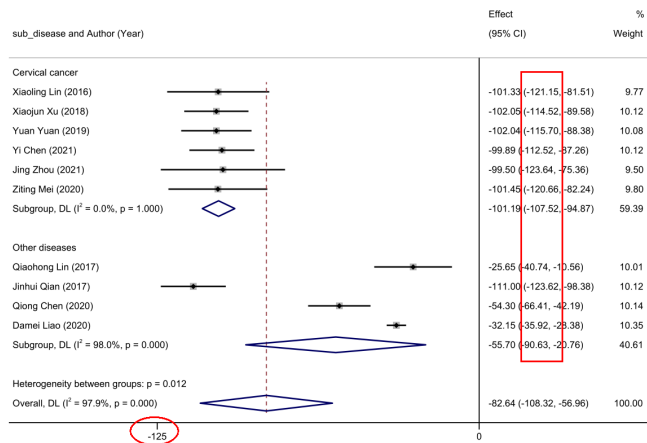
a) To standardize the results, the part that exceeds the horizontal coordinates should be indicated by arrows.



Please see the example below:

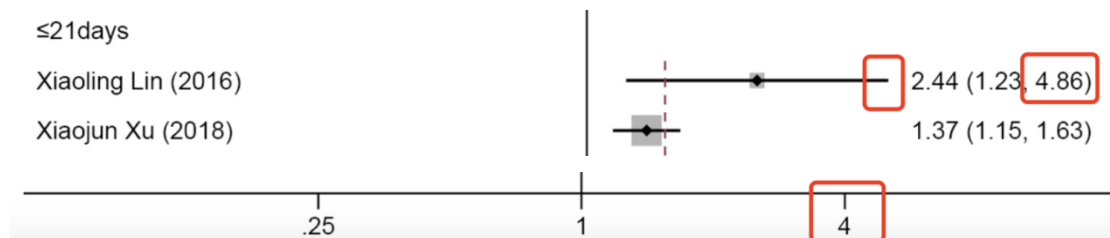


Reply: Thank you very much for your suggestion, and we have revised it in the manuscript and added an attachment (Figure 5-revised). The revision example is shown in the figure below.

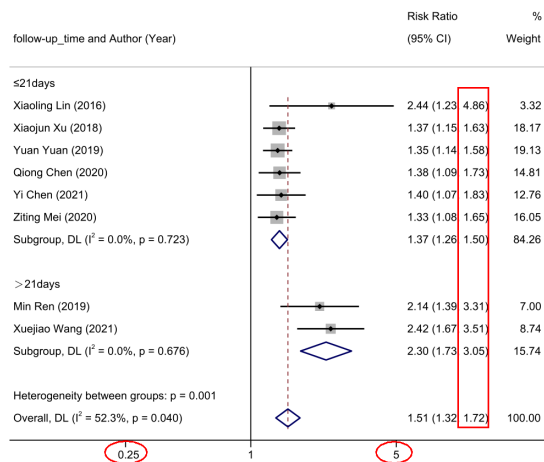


6. Figure 7

a) To standardize the results, the part that exceeds the horizontal coordinates should be indicated by arrows.



Reply: Thank you very much for your suggestion, and we have revised it in the manuscript and added an attachment (Figure 7-revised). The revision example is shown in the figure below.



7. Figure 9

Please check the year, it is not the same as reference list.

Other diseases

Femke E M Mulder (2017)

Reply: Thank you very much for your suggestion, and we have revised it in the manuscript and added an attachment (Figure 9-revised). The revision example is shown in the figure below.

Other diseases

Femke E M Mulder (2018)