Reviewer’s report

Title: Risk factors and outcomes of urosepsis in patients with calculous pyonephrosis receiving surgical intervention: a single-center retrospective study

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Reviewer: Chin-Chen Chu

Reviewer's report:

Manuscript (Numbered BANE-D-18-00528) titled: Risk factors and outcomes of urosepsis in patients with calculous pyonephrosis: a single-center retrospective study, has been carefully reviewed. The authors conducted a retrospective study to identify the risk factors and outcomes of urosepsis in patients receiving stone retrieval surgery. Their results demonstrated operation longer than 120 minutes and urgent surgery are risk factors for intra-and postoperative urosepsis. The topic is interesting, however, some major concerns remained. For instance, only a small number of patients were identified in this study, the statistical power is thus very low. Moreover, the definition of criteria for including or excluding patients were not clear. Another major concern is that how can they made the diagnosis the urosepsis during anesthesia and operation? It needs to be precisely defined. Therefore, I do not suggest acceptance of this manuscript for publication in BMC Anesthesiology.

Specific comments:

1. Title: the title should state that the study groups were calculous pyonephrosis patients having surgical treatment, the present title seems to omit this information.

2. Abstract (background section) stated that urosepsis is a relative rare. Is it true? Urosepsis in adults comprises approximately 25% of all sepsis cases.[1-3] I don't think this incidence is rare.

3. Introduction., Line 80-81: urosepsis is prone to be overlooked for a relatively low incidence and better prognosis. I still can't agree this conclusion. Urosepsis, though not so high as pneumonia associated sepsis, is still the one of the leading causes of sepsis.[3] Almost all experienced clinicians pay much attention to this disease.

4. Method

i. Study population: why patients combined severe systemic diseases were excluded? Besides, the definition of severe systemic diseases was not clearly defined. Moreover, in table 1,
there are 93(45.8%) patients preoperatively classified as ASA class III status. According ASA classification of patient status principle, class III patients are those having severe systemic disease. Why they were not excluded?

ii. Why were patients undergoing nephrectomy excluded, if the underlying cause was kidney stone?

iii. How could you recognize patients developed sepsis during the operation? Intraoperatively, many factors may interfere the heart rate, body temperature, blood pressure. How could the authors differentiate these hemodynamic changes were due to sepsis but not due to anesthetic or surgical related problems?

iv. Intraoperative low blood pressure was not defined in method section and table 2. This is one of the major outcomes in this study, and needs to be clearly defined.

v. What is the definition of urgent surgery? Every hospital has its own definition for urgent or emergent surgeries.

5. Results

i. For a retrospective study, a study only including 205 cases and merely 24 urosepsis is too small in size. The representation power from 24 cases is far from sufficient. I suspect that's why only surgical time and urgent surgery were identified as risk factors. Why not extend the study period for more years to gather enough patients for analysis?

ii. Table 3. What is B? Besides, the meaning of Wald value should be explained in statistical analysis section or as a footnote in table 3.

iii. Re-admission within 90 days. How the authors guarantee that patients stay follow up in this hospital? Patients unsatisfied with the medical service might go to another hospital for medical help and re-admitted to another hospital. This is a major limitation for performing database retrospective follow-up study in a single hospital.

6. Discussion

i. How many patients developed urosepsis intraoperatively? How did the authors make the diagnosis during anesthesia and surgery? This needs to be explained.

ii. Page 9, Line 188-190, the authors cite 7 references for patients having PCNL or ureterscopy, but state this is the first clinical study in this population. Were these patients received surgeries other than PCNL or ureterscopy?
References:


Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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