

## Peer Review File

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### Review Comments

*Comment 1:* The Authors listed six key words for this paper. According to journal's guidelines keywords should be maximum five: I would suggest to delete one keyword.

*Reply 1:* We find that this point is indeed overlooked after carefully studying the journal's guidelines keywords. Therefore, we modify keywords without affecting the topic of our original manuscript, and finally leave the other 4 keywords (Muscle-invasive bladder cancer; radical cystectomy; adjuvant chemotherapy; predictive tool).

*Changes in the text:* We have modified our text as advised (see Page 3, lines 52-53).

*Comment 2:* Abstract contains 317 words. According to journal's guidelines they should be maximum 300. Moreover, OS and CSS abbreviations should be explained.

*Reply 2:* As we all know, a high quality abstract not only includes the basic essential elements, but also highlights the primary objectives, allowing readers to intuitively get the essence of studies. We follow the Submission Checklist for Authors for reporting standards, the Abstract has been revised according to the Checklist without changing

the primary subject. In addition, we also explained the OS and CSS abbreviations and modified them into the Abstract.

*Changes in the text:* We have modified our text as advised (see Pages 2-3, lines 24-51).

**Comment 3:** Background: there is a list of several primary objectives. The primary end point should be one. I would suggest to choose one primary end point and list the others as secondary endpoints.

*Reply 3:* We are very grateful to reviewer for the detailed comment on Background. Admittedly, we found that the description of several objectives for our research may not be rigorous enough after re-reading the last paragraph of Background carefully, which may cause ambiguities among readers. Accordingly, we make the primary objective of a predictive tool for selecting a population that could benefit from postoperative adjuvant chemotherapy, and make other objective as the secondary endpoints as advised. The revised results have been added to the revised manuscript.

*Changes in the text:* We have modified our text as advised (see Page 5, lines 91-96).

**Comment 4:** Materials and Methods: endpoints are described in the “data source” section. I would suggest to add a separated sub-section entitled “Endpoints” in the

Materials and Methods section in describe the various endpoints. In the statistical analysis section is described that the patients were matched 1:1 according the administration of adjuvant chemotherapy. In my opinion patients should be matched according to other clinical-pathological characteristics such as T stage, N stage...

*Reply 4:* We thank the reviewers for their detailed suggestions on the Materials and Methods section. First, as the reviewers mentioned, endpoints are described in the “data source” section, which may not be very suitable for stacking together them. Thence, we add a separated sub-section entitled “Endpoints” in the Materials and Methods section in describe the various endpoint. Second, the primary objective of current study is to construct predictive tool for the reasonable application of adjuvant chemotherapy in patients with muscle-invasive bladder cancer (pT2-4N0-3M0) following radical cystectomy. According to the intervention factors, we determined adjuvant chemotherapy and non-adjuvant chemotherapy as the experimental and control group, respectively. In order to reduce potential confounding effects and the treatment selection bias, propensity score matching (PSM) was used to choose the patient cohorts matched 1:1 according the administration of adjuvant chemotherapy. Besides, the clinical-pathological variables were also included for matching to minimize the impact of distributional difference and confounding. More importantly, a larger independent

cohort or randomized clinical and multicenter trials may further research the subgroup analyses of different clinical-pathological variables to establish predictive tool in the future. It is noteworthy that our current predictive tool could provide a individualized and accurate reference for the reasonable application of adjuvant chemotherapy for pT2-4N0-3M0 BC patients who underwent radical cystectomy in different subgroups.

**Changes in the text:** We have modified our text as advised (see Page 6, lines 121-128).

**Comment 5:** Results: I would suggest to change “univariate and multivariate” to “univariable and multivariable analyses”.

**Reply 5:** We are sorry that the incorrect use of some phrases in our manuscript has caused inconvenience to the reviewers. We have changed “univariate and multivariate” to “univariable and multivariable analyses” as advised. Furthermore, we also consult a professional language checker ([AME Editing Service](#)) to correct the other errors of English language of our manuscript.

**Changes in the text:** We have modified our text as advised (see Page 9, lines 182-183).

**Comment 6:** Discussion: the discussion is well structured. However, I would add to the limitations of the study the absence of data regarding administration of neoadjuvant

chemotherapy which is recommended by AUA and EAU guidelines for cT2a-4N0M0 BC.

*Reply 6:* First of all, we are very grateful to the reviewers' praise for the Discussion section. The key limitations of current study as pointed out by the reviewers, the absence of data regarding administration of neoadjuvant chemotherapy, and this is indeed not discussed in our manuscript. As a result, we add to the limitations of the study the absence of data regarding administration of neoadjuvant chemotherapy accordingly. We also hope that future studies can establish predictive model and different risk stratification for bladder cancer patients with neoadjuvant chemotherapy.

*Changes in the text:* We have modified our text as advised (see Page 15, lines 318-321).

*Comment 7:* Moreover, there are several typos and grammar errors and the meaning of some phrases is not completely clear. The paper should be entirely corrected by native English speaker.

*Reply 7:* Thanks the reviewers for pointing out several errors about the English language in our manuscript. Admittedly, we are also aware that these errors may cause

readers to misunderstand when reading. Therefore, we consult a professional language checker (AME Editing Service) to correct the errors of English language of our manuscript. We hope this can improve the academic value of our manuscript.

***Changes in the text:*** We have modified our text as advised (see the track changes in the text).