## **Peer Review File**

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## **Review Comments**

## Major comments:

**Comment 1:** The Authors should specify, as stated in guidelines, that the WHO/ISUP grading system that will replace the Fuhrman grading, needs to be validated for prognostic systems and nomograms. (European Association of Urology guidelines on Renal cell carcinoma, 2020).

**Reply 1:** The pathological grading system is proposed because of its association with the outcome of RCC, and it is constantly updated in order to achieve a better predictive value. Therefore, designed to promote the application of WHO/ISUP grading system, it is extremely necessary to evaluate its predictability.

**Changes in the text:** we have modified our text as advised (see Page 5, line12-16).

**Comment 2:** The Authors stress the value of the verification of the grading system in a specific population such as the Chinese one. It would be useful to briefly explain in the Introduction or in the Discussion the reasons why this is particularly important in Chinese population because of its heterogeneity.

**Reply 2:** The Chinese are a heterogeneous population, with different obesity rates and smoking rates than others, which are precisely the pathogenic factors of renal cell carcinoma.

Changes in the text: we have modified our text as advised (see Page 10, line21-Page 11, line 2).

**Comment 3:** Table 3 shows that 4 patients were classified as Fuhrman grade 1 but ISUP grade 3, 1 patient was classified as Fuhrman grade 1 and ISUP grade 4, 1 other patient as Fuhrman grade 2 but ISUP grade 4. It seems to me too wide as an upgrading! – these 6 cases deserve an explanation that is not provided in the Discussion.

**Reply 3:** Renal cell carcinoma is a highly heterogeneous tumor, showing various pathological morphology in different slices, and the areas with high pathological grade are sometimes very subtle and require repeated observation to be clear, which results in a wide upgrading when reassessed, such as 1 patient was classified as Fuhrman grade 1 and ISUP grade 4.

Changes in the text: we have modified our text as advised (see Page 12, line15-19).

## **Minor comments:**

**Comment 1:** In Introduction while discussing epidemiology data of renal cell carcinoma (RCC) the Authors show European number of new cases and number of kidney cancer-related deaths, comparing them to Chinese incidence of RCC per 100.000 people. The data are not immediately comparable, I would have preferred choosing for both nationalities number of cases/deaths or incidence per 100.000.

**Reply 1:** we change the sentence "leading to approximately 99 200 new RCC cases and 39 100 kidney cancer-related deaths within the European Union in 2018" into "leading to approximately 19.45/100 000 new RCC cases and 7.67/100 100 kidney cancer-related deaths within the European Union in 2018".

Changes in the text: we have modified our text as advised (see Page 4, line5).

**Comment 2:** In Introduction, it doesn't seem fair to me to use the term "race"... Ethnicity / population or else surely sound better.

Reply 1: We change the term "race" into "population".

Changes in the text: we have modified our text as advised (see Page 5, line20).