Response to Reviewers

Manuscript: 59085

"Current Trends of Artificial Intelligence in Oncology"

We would like to express our gratitude to the Editorial Office and the Reviewers for their kind remarks and insightful comments that have helped us improve our manuscript. The queries are addressed in the following point-by-point response and the manuscript has been modified accordingly.

Sincerely,

The Authors

Reviewer #1:

1. The topic of the manuscript is broad, but the content of the manuscript is not substantial enough. The content of each part is relatively simple and superficial, which does not allow readers to fully understand the current situation of AI in oncology, and does not reach the manuscript the goal of. At the same time, by consulting related published reviews, most of the manuscripts are reviews for a specific tumor or specific method in AI. The focus of the manuscript is more prominent and the content is more substantial.

We agree that the topic is broad to the point that it is not possible to cover all its aspects in a single manuscript, specifically in a brief Editorial. In this light, we aimed to provide a general overview of the basic concepts behind the use of AI in oncologic imaging while highlighting its possible

applications. We hope that such an article will be a springboard for readers to gain interest in the topic and further deepen their knowledge based on personal background and focus.

2. The title of the manuscript is the trend of AI in oncology, but it does not provide a relevant review of the research trend of AI in tumor pathology, tumor genomics and proteomics.

We thank the Reviewer for the relevant observation. Since our focus is on medical imaging in oncology, we modified the title of the manuscript accordingly.

3. Regarding the application of AI in optimizing clinical-radiology workflow and tumor segmentation, characteristics and staging, the content of these two parts is rather confusing, and some references cited do not match the subtitles of the manuscript. For example, in the section of tumor segmentation, characteristics and staging, the cited literature is: the model established by combining MRI radiological characteristics and machine learning methods shows better performance than radiologists in distinguishing typical and atypical adenomas from non-adrenal glands Adenoma lesions; machine learning based on non-enhanced CT images to distinguish benign granuloma and non-small cell adenocarcinoma has better performance than radiologists. These references do not match the subtitle.

We thank the Reviewer for this comment. Actually, the included references support the usefulness of machine learning methods in the characterization of solid lesions (i.e. adrenal and lung lesions)

Reviewer #2:

-Add more on the basic of AI in the introduction

Following the Reviewer suggestion, we enriched the introduction with additional information and a new table.

-Discus shortly about imaging modalities used such as CT and MR imaging in oncology detection

We thank the Reviewer for this comment. As requested, a sentence mentioning the prominent role of CT and MRI in oncologic patients has been added in the INTRODUCTION SECTION.

-Add shortly about advanced MR sequences and its application with AI

We thank the Reviewer for this suggestion. A sentence mentioning the possible advantages of the use of advanced imaging techniques has been added in the INTRODUCTION SECTION.

-English language correction through the manuscript

The manuscript has undergone a language revision

-Discus merits and limitations of AI

These are discussed in the CHALLENGES AND FUTURE DIRECTIONS section.

Reviewer #3:

AI can also play a role in cancer histopathological diagnosis as well as molecular diagnosis. This can be added. There are high interests in applications of AI to clinical diagnostics but also to clinical and epidemiological research. AI can be applied in research areas, which can generate evidence for improvement of clinical practice. Especially how lifestyle can influence clinical outcomes is an understudied area. In these contexts, as a future direction, the authors should discuss integration of AI into molecular pathological epidemiology (MPE). Beyond regular (molecular) pathology techniques, AI can reveal pathogenic signatures that can be further linked to risk factors and better response to therapy and intervention. MPE concepts and approaches have been discussed in Gut 2011, Annu Rev Pathol 2019, etc.

In line with the second comment of Reviewer #1, due to the focus on medical imaging of our Editorial, we modified the title of the manuscript. We also added a consideration of the integration of AI and MPE in the CHALLENGES AND FUTURE DIRECTIONS section.

Reviewer #4:

Specific Comments to Authors: The author selected a new topic concerned about the application of AI technology in tumor, and the author's original intention and ideas are good. However, the topic selection is too macro and huge, there are some questions on broad and empty in the review. So that It is recommended to focus on lung cancer or one of breast cancer. We hope that the main problems and challenges in oncology in this review will be explained more clearly for the application of AI technology in lung cancer or breast cancer.

Thank you for your comment. Please, see the response to the first comment of Reviewer #1.

Science editor:

(1) The key word “Medical Imaging” or “Cancer Imaging” is missing in the title. Please add it

Following the Editor’s suggestions, the title has been modified to include the “Cancer Imaging” key word.

(2) The “Author Contributions” section is missing. Please provide the author contributions

The “Author Contributions” section has been added.

(3) Please add some tables/figures to the manuscript.

Following the Editor’s suggestions, two tables and two figures have been added to the manuscript.

Editorial office director:

I have checked the comments written by the science editor. The authors must provide the signed Conflict-of-Interest Disclosure Form and Copyright License Agreement.

The signed Conflict-of-Interest Disclosure Form and Copyright License Agreement have been added.

Please add some tables or figures in the manuscript.

Following the Editor’s suggestions, two tables and two figures have been added to the manuscript.

Company editor-in-chief:

Before final acceptance, the author(s) must add a table/figure to the manuscript.

Following the Editor’s suggestions, two tables and 2 figures have been added to the manuscript.