

Dear Editor,

Thank you very much for your letter and suggestions on our manuscript. According to the suggestion of the reviewers, we resubmitted a new version of the manuscript. We have dealt with the comments made by the reviewers, and the revised part is highlighted in yellow in the revised manuscript. We hope the revision is acceptable and look forward to hearing from you as soon as possible. Best wishes.

Below, please check this reply to all the revised opinions.

SPECIFIC COMMENTS TO AUTHORS

This is an interesting study of the value of ultrasound and MRI combined with tumor markers in the diagnosis of ovarian tumors. The study is well designed and the methods are described in detail. The reviewer recommends to accept this manuscript after a minor editing.

Reply: Thank you for your suggestion on this manuscript. I have carefully checked the whole manuscript and carefully checked the sentence, grammar, rationality of research results and completeness of discussion and elaboration of the manuscript. And the unreasonable places have been modified. Thank you for your affirmation of this manuscript. Thank you for your review.

SPECIFIC COMMENTS TO AUTHORS

In this study, the authors investigated the diagnostic value of US, MRI combined with tumor markers in ovarian tumors. The authors found that US, MRI, and tumor markers each have their own advantages and disadvantages when it comes to diagnosing ovarian tumors. The manuscript is overall well written.

Minor comments:

1. The manuscript requires a minor language editing. Some minor language polishing should be revised.

Reply: Thank you for your valuable suggestions on this manuscript. I have

carefully examined the whole manuscript as you requested. Corrected the misspelled words in the manuscript and the sentences with grammatical defects in the manuscript. To ensure the smoothness of the whole manuscript sentence, this manuscript has been polished in a standardized language according to the requirements of your journal. I have marked the specific changes in “yellow” in the revised draft, please check it.

2. The limit of the study should be discussed.

Reply: Thank you for your great suggestions on the content of my manuscript. I have revised the manuscript in the corresponding position according to your request and added an explanation of the limitations of this manuscript and the prospect of future research.

1) At the end of the discussion, the advantages and disadvantages of the methods explored in this study (ultrasound, MRI, and serum tumor markers) in the diagnosis and application of ovarian tumors are expounded respectively. It is emphasized that the combined application of ultrasound, MRI, and serum tumor markers can complement each other in the diagnosis of ovarian tumors, which is helpful for the localization and qualitative diagnosis of ovarian tumors, early detection of tumors, and determination of whether they are benign or malignant. This provides valuable guidance for clinical treatment.

The application of ultrasound, MRI, and serum tumor markers in the diagnosis of ovarian tumors has both advantages and disadvantages. Ultrasound examination can display the location of ovarian tumors, reveal subtle internal structures, and show the blood flow characteristics of the tumor. It can also provide a clear diagnosis and differential diagnosis of most ovarian tumors. MRI serves as a complementary imaging method to ultrasound and, when combined, can further enhance the diagnostic value of ovarian tumors. On the other hand, serum tumor markers alone cannot be used for localization diagnosis. However, when used in combination with ultrasound and MRI, they can improve the sensitivity and specificity of ovarian tumor diagnosis. This

combined approach enhances the preliminary screening and early stages diagnosis of ovarian tumors, as well as the differential diagnosis of benign and malignant diseases. The diagnostic accuracy, sensitivity, and specificity of the three methods combined for ovarian tumors are significantly higher than when each method is used alone. Therefore, the combined application of ultrasound, MRI, and serum tumor markers in the diagnosis of ovarian tumors can complement each other, help locate and qualitatively diagnose ovarian tumors, detect them at an early stage, and determine whether they are benign or malignant. This provides valuable guidance for clinical treatment.

2) Similarly, according to your request, the limitations of this study have been expounded in the conclusion of the manuscript: 1. The sample size and the number of joint centers are too small. 2. Think about the diagnostic value of these detection methods in different types, degrees of differentiation, and stages of ovarian cancer. 3. Prospect for future research: It is very important to find biomarkers that can reliably predict the prognosis and drug resistance of patients with ovarian cancer.

CONCLUSION

This study demonstrates that the combined application of ultrasound, MRI, and tumor markers (CA125, HE4) yields higher diagnostic accuracy, specificity, and sensitivity for ovarian tumors compared to a single method. It can be extensively utilized in clinical applications. However, this study has certain limitations. Firstly, there is currently no screening program with sufficient evidence-based medical evidence that can be universally applied to all types of ovarian cancer. Secondly, future research will involve expanding the sample size of quantitative research and conducting multi-center joint studies. Additionally, further investigations will delve into the diagnostic value of different detection methods such as ultrasound, MRI, and tumor markers (CA125, HE4) alone and in combination for various types, degrees of differentiation, and staging of ovarian cancer. Although tumor markers are of

great significance in the early detection, monitoring, and treatment of tumors, the increases in CA125 and HE4 can be influenced by other diseases in patients and may not accurately indicate the occurrence and progression of ovarian cancer. Therefore, it is crucial to identify biomarkers with high sensitivity and specificity that can reliably predict the prognosis and drug resistance in ovarian cancer patients.

3. References list should be edited. The Doi number and PMID number should be added.

Reply: Thank you for your valuable suggestions on the format of references in my manuscript. I have revised the format of references in the manuscript according to your request. It was revised according to the style and requirements of your journal. Moreover, according to your requirements, the corresponding Doi number and PMID number of this reference are added at the end of each reference.

We would like to express our great appreciation to you and the reviewers you're your comments on our paper. Look forward to hearing from you. Thank you and best regards.