

Peer Review File

Article information: <https://dx.doi.org/10.21037/gc-23-84>

Reviewer A

The paper titled “Dynamic enhancement of magnetic resonance imaging-related parameter characteristics and its correlation with clinical features in young breast cancer patients” is interesting. The parameters related to breast dynamic enhancement MRI in young breast cancer patients are manifested by an increased proportion of non-mass enhancement patients and a decrease in the ADC, which is related to the clinical features and prognosis of patients. However, there are several minor issues that if addressed would significantly improve the manuscript.

Reply 1: We thanks for your positive feedback.

The background did not indicate the clinical needs for this research focus, and needs further revisions.

Reply 2: We have added the focus to the background. See page 2, line 36-38.

Which factors may influence MRI performance in the detection of pathologic complete response after neoadjuvant chemotherapy? It is recommended to add relevant contents.

Reply 3: We have added related contents in the discussion. See page 7, line 224-226.

How is the content of this study integrated with clinical data? How to perform clinical validation? It is recommended to add relevant contents.

Reply 4: We have added related version accordingly. See page 8, line 245-249.

It is suggested to increase the research on the correlation between dynamic contrast-enhanced MRI features and pathological and immunohistochemical indicators of breast cancer patients, which may make the whole research more complete.

Reply 5: In our study, we found no significant differences in HER-2, ER, PR, Ki-67 positive rate between the young breast cancer group and control group. And we found no relationship between the HER-2, ER, PR, Ki-67 and dynamic contrast-enhanced MRI features.

The introduction part of this paper is not comprehensive enough, and the similar papers have not been cited, such as “The clinicopathological and MRI features of

patients with BRCA1/2 mutations in familial breast cancer, Gland Surg, PMID: 33633982". It is recommended to quote the article.

Reply 6: We have added. See reference 8.

This study is a retrospective analysis, which is likely to cause some deviations in the results. It needs to be further confirmed by multi-center clinical trials. The number of patient samples in this study is too small, and a large sample study should be added for verification.

Reply 7: We have added in the discussion. Thanks. See page 8, line 253-258.

Reviewer B

First, the title needs to indicate the focus of this study, the comparison between young and old patients and the prognostic roles of MRI parameters in young patients, as well as the clinical research design of this study, i.e., a retrospective cohort study.

Reply 1: We have revised the title accordingly. See page 1, the title.

Second, the abstract needs further revisions. The background only indicated the knowledge gaps but did not briefly describe the clinical significance of this research focus. In the methods, the authors did not describe the inclusion of subjects, the assessment of MRI parameters and clinical characteristics; follow up procedures, and measurements of prognosis outcomes. In the results, the authors need to first report the comparability between the groups in terms of basic clinical characteristics. The conclusion needs comments for the clinical implications of the findings, not to repeat the main findings again.

Reply 2: We have revised the abstract accordingly. However, due to the limitation of the words (no more than 350, now it was 349). See page 2, line 35-63.

Third, the introduction of the main text is not adequate, which did not review what has been known on the MRI characteristics in patients with breast cancer, and the prognostic roles of MRI parameters, and have comments on the potential clinical significance of this research focus.

Reply 3: We have added related contents in the introduction. See page 3, line 76-79.

Fourth, in the methodology of the main text, the authors need to accurately describe the clinical research design of this study, i.e., baseline comparisons of MRI parameters and retrospective cohort of the prognostic roles of the MRI parameters, the sample size estimation for the proposed two analyses, details of follow up, and measurements of

prognosis outcomes such as lymph node metastasis and 5-year OS.

Reply 4: We have revised the manuscript accordingly. We thank for your suggestion. See page 3-5, line 91-153.

In statistics, the authors need to first test the comparability of the clinical characteristics of the two groups, because the comparisons between the two groups were all univariate analyses of MRI parameters and at risk of confounding bias. The prognostic roles of MRI parameters and the predictive accuracy of MRI parameters for prognosis outcomes are two different research questions. The authors need to analyze the prognostic roles by using multiple Cox regression analysis. If the focus is the predictive accuracy, please consider to provide training and validation samples. The AUC value of 0.784 also did not support the good predictive accuracy of ADC. The authors need to ensure $P < 0.05$ is two-sided.

Reply 5: At present, the recurrence rate and metastasis rate of breast cancer patients after surgery are relatively low. Therefore, only 16 patients in the present study have had postoperative recurrence or metastasis, and there are relatively few cases. Therefore, COX regression analysis cannot be carried out. We have described this point as a deficiency in our discussion. See page 8, line 253-258.