Author's response to reviews

Title: The value of diffusion-weighted imaging in assessing the ADC changes of tissues adjacent to breast carcinoma

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Point-by-point response to the concerns

1. **(Referee 2)** The new title is completely inadequate as “aggressiveness” wasn’t addressed at all.
   
   **Response:** We had changed the title to “The value of diffusion-weighted imaging in assessing the ADC changes of tissues adjacent to breast carcinoma”.

2. **(Referee 2)** Introduction (I): “Emerging evidence” This sentence is misleading as MRI does not provide more detailed images.
   
   **Response:** Considering the sentence in Introduction “Emerging evidence that magnetic resonance imaging (MRI) has a high resolution and can provide much more detailed images than mammography and ultrasonography (US) made it a widely-used tool for the diagnosis of breast lesions” is probably misleading as MRI does not provide more detailed images, we had changed it to “Magnetic resonance imaging (MRI) has a high resolution and can provide much more detailed images than mammography and ultrasonography (US), which makes it a widely-used tool for the diagnosis of breast lesions”.

3. **(Referee 2)** I: “However, the conventional breast MRI is still a morphological diagnostic technique and therefore, can not provide definite and quantitative information”. Please specify.
   
   **Response:** We had changed this sentence to “However, the conventional breast MRI (plain MRI) is still a morphological diagnostic technique and only provides general anatomical information such as signal, shape, size and location”.

4. **(Referee 2)** I: I think “aggressiveness” is not the correct term.
   
   **Response:** In this article there are 12 “aggressiveness” totally and according to the referee’s suggestion, we had changed all of them.

5. **(Referee 2)** I: “On the contrary, DWI, based on its imaging mechanism, could reflect the microstructural changes of tissues and theoretically detect the transition from carcinoma tissue to its surrounding normal tissue.” Yes maybe, but to prove this DWI must be compared with histological specimen. “Therefore, another possible application of DWI in breast cancer is the detection of tumor aggressiveness in molecular perspective.” No, I don’t think so.
   
   **Response:** Since there is no comparison with histology in this paper, we changed those sentences to “Measurement of the ADC provides a quantitative estimate of the restrictive nature of the motion of water molecules within tissue for each voxel in a diffusion-weighted image.”

6. **(Referee 2)** I: “Our main aim was to study the extent of tumor aggressiveness” If so, you should compare DWI to histological specimen.
Response: Since there is no comparison with histology in this paper, we changed those sentences to “Our main aim was to study the DWI changes in tissues adjacent to breast carcinoma.”

7. (Referee 2) Discussion: “Another important aim in our study is try to assess the tumor aggressiveness of breast carcinoma in molecular perspective through DWI.” You have to compare/prove your hypothesis with histological specimen. Otherwise you can’t draw this conclusion and you have to omit the second part of the discussion.

Response: Since there is no comparison with histology in this paper, we changed the sentences to “Another important aim in our study is try to study the DWI changes in tissues adjacent to breast carcinoma.”

8. (Referee 4) At the same time, authors must realize that, as Reviewer 2 stated, in almost all cancer diagnostic procedures, histological specimen are still the gold standard in determining the degree of "aggressiveness" for any type of tumor. As such, the authors need to be very cautious in making "strong" claims regarding their methods before quantitatively comparing the method with the pathology reports on histological specimen on a large-scale study. My suggestion is that the authors "tone down" the paper - instead of making strong claims regarding this potentially interesting methodology, only discuss the promising results and try to compare the results with histology results (if possible), revise the title of the paper, and resubmit. If the comparison with histology cannot be made for this paper, I suggest that the paper may be more suitable for publication as a Short report.

Response: We admit that comparing DWI with histological specimen is a favorable evidence for this article and actually the study about the comparison with histology is in progress at present. Thus, in our revised edition, we had “tone down” the paper and removed all “strong” claims. For example, we deleted all “aggressiveness”, “molecular margin” “molecular border” which need histological study to prove. We also make sure that all of our conclusions only reflect the data presented in our results.