Author's response to reviews

Title: The Apparent Diffusion Coefficient (ADC) Ratio: Can it be Used as an Adjuvant Tool for Prostate Cancer Assessment of Tumor Aggressiveness?

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Author's response to reviews:

DR. Fernanrdo Marques
The BioMed Central Editorial Team
Cluj-Napoca, 25.02.2014

Dear Associate Editor,

Thank you very much for investing your valuable time in handling our manuscript MS: 9104375321015565 entitled “The Apparent Diffusion Coefficient (ADC) Ratio: Can it be Used as an Adjuvant Tool for Prostate Cancer Assessment of Tumor Aggressiveness?” and considering its acceptance in BMC Medical Imaging after proper revision. We also would like to thank you for the helpful suggestions and for giving us the opportunity to improve our manuscript accordingly and we appreciate all your efforts. We have specifically addressed all issues and concerns outlined by yourself in a detailed point-by-point revision and made the appropriate changes and supplementations in the marked manuscript. Please find the details below.

Editor's comments:

1. The fact that MRI was done post biopsy (& that too after a 20 core saturation biopsy) could have significantly altered the ADC values. Even though the authors excluded 5 patients owing to post-biopsy hemorrhage (detected on MR), I am of the opinion that little / microscopic hemorrhage (not detected on MR), inflammation & distortion could have significantly altered the ADC values and thus undermine the clinical utility of the manuscript.
We agree with your comment and acknowledge this limitation of the study. Still our ADC values are in accordance with the values already published in the literature. Another important aspect is that the biopsies were performed trans perineal and not in a trans rectal way and thus we avoided the fecal contamination of the specimens. But not being able to control the influence of microscopic hemorrhage undetectable on standard MRI sequences, we also acknowledge this limit in the main text of the manuscript as follows:

“The presence of microscopic hemorrhage undetectable on standard MRI sequences might have altered the ADC values and underestimate the diagnostic ability of ADC ratios.”

2. The ADC map image (Figure 2) provided is far from optimal. The authors say that the image interpretation was performed on a PACS system with high quality imagines, good resolution and good lesion detection. If that’s the case, there should not be a problem in providing better images. Relying on the ADC values up to two decimal places is not possible with the image quality provided.

Answer: Thank you for your comment and well pointed observation. We will provide more accurate and better quality imagines.

3. Normal central and peripheral zone ADC values in group with Gleason 6 and 7 were significantly lower than those with Gleason 8 and 9. The authors ascribe this to younger patients in latter group. This means age is definitely a confounding factor here & thus the ADC ratios calculated are biased. It would have been appropriate to have age - matched patients in the two groups so that the ADC ratios are free from this bias.

Answer: We agree with your comment and acknowledge this limit of the study. We also included it as a limitation in the discussions section of the manuscript as follows:

“Patients with Gleason 8 and 9 are younger individuals then the patients with Gleason 6 and 7, suggesting that age might have an influence on our final results. Not being able to have age - matched patients in the two groups so that the ADC ratios be free from this bias is an other limitation of our study.”

Minor issues
2. Table 3: cut-off tumor ADC value should read 0.82

Answer. Thank you for your observation. We corrected it accordingly.

Again, we would like to thank the Editor for his contribution towards the improvement of the manuscript.

We would be grateful for consideration of the present manuscript to be published in your highly esteemed journal “BMC Medical Imaging”.

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