Reviewer’s report

Title: Association of vitamin D receptor polymorphisms with the risk of prostate cancer in the Han population of Southern China

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Reviewer: Arslan Akhmedkhanov

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Comments on paper by Bai et al. “Association of vitamin D receptor polymorphisms with the risk of prostate cancer in the Han population of Southern China”.

This is an interesting hospital-based case-control study which addresses the association between vitamin D receptor polymorphisms and risk of prostate cancer in the Han population of Southern China.

The strengths of the study include the well-defined study question and the appropriate methods that are well described.

Prior to publication the authors should address the following comments:

Major Compulsory Revisions

1. Background, page 5, end of the first paragraph. The authors state that “Although age, race, genetics, and geography may all be significant risk factors for prostate cancer [6], the relationships of these factors with disease occurrence are not yet clear.”

It is not clear what the authors trying to say here. Age, race, and geographical factors are well-established risk factors of prostate cancer. I would recommend modifying this sentence to reflect that these factors may not completely explain the differences between different ethnic groups in prostate cancer rates. Therefore, genetic variation in certain genes, including genes controlling vitamin D activity, could play a role in determination of susceptibility to prostate cancer.

2. Methods, page 7. Although the authors have stated that “controls met the same eligibility criteria, except that they had never been diagnosed with cancer”, it is not clear what were the eligibility criteria for this study. The eligibility criteria should be clearly defined.

3. The authors state that the age-matched controls were “recruited from employees at the First Affiliated Hospital of Wenzhou Medical College”, whereas the cases were recruited from 4 different hospitals in Southern China. The authors should address the possibility of selection bias since the cases and controls were recruited from different hospitals. In addition, Table 2 indicates that there were 59 controls aged 70-79, and 18 controls aged greater than 80 years. Are these elderly controls also the current employees of the First Affiliated
Hospital of Wenzhou Medical College? Please explain.

4. Results and Discussion, page 9. Please remove “in prostate cancer subjects” at the end of paragraph 1.

5. Results and Discussion, page 9. The first sentence of paragraph 2 states: “Considering the distribution of the BsmI allele among subjects and the irrelevance of survival to old age, which was not significant among alleles (Table 3)…” Please explain what you mean here by irrelevance of survival to old age. This sentence needs clarification.

6. Results and Discussion, page 10. Please indicate the order of SNPs in haplotype sequences listed here and in Table 6.

7. Results and Discussion, page 10. Here you state that ‘CGGTT’ haplotype is associated with a decreased risk of prostate cancer. However, the provided OR = 5.17 (95% CI: 1.13-23.75) suggest an increased risk. Please correct the statement or the OR (95% CI) here and in table 6.

8. Results and Discussion, page 10. The authors mentioned that the allelic frequency of TaqI ‘T’ in the southern Chinese Han population was significantly higher than in white Americans and Portuguese populations. It would be also interesting to compare whether the allelic frequency of BsmI ‘G’ allele that is found to be associated with lower risk of prostate cancer, is higher in the Han population compared to the published data for Caucasian populations.

Minor Essential Revisions

9. Replace “Peking” to “Beijing” on page 5.
10. Remove word “protein” after “(VDR)” on page 5.
11. Change “high” to “higher” in the second paragraph on page 10.
12. Change “Divided” to “Stratified” in the legend of Table 4.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.