Reviewer's report

Title: Association between polymorphisms in RMI1, TOP3A, and BLM and risk of cancer: a case-control study

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Reviewer: Donghui Li

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The role of BLM and BLM-related gene in cancer susceptibility is an important research area.

Major compulsory revisions:

The study design is very confusing and problematic. Why men are used as control for female breast cancer? The four different types of human cancer investigated in this study involve quite different etiology and risk factor. None of the known risk factors was considered in the study. A convenient sample approach plus a small sample size for each disease could easily lead to some spurious associations. The authors did not even acknowledge any of the limitations of their study and the conclusion is very much overstated.

I’m very frustrated in reading this manuscript. I could not figure out what exactly the numbers presented in Table 2 are. For example, for TOP3A rs1563634 in leukemia, the number of cases with GG, GA and AA genotype was 84, 54, and 11, respectively according to Supplemental Table 1. In the manuscript, AA seems to be used as the referent group, and AG/GG genotype showed an increased risk for cancer. What is the number 75/66 represent here? Because data presented in this table is the main finding of the study, without clear understanding of the presented data, I really can not properly evaluate the study.

Explain why the drop rate for bladder cancer is so high.

Explain what type of cancer of the control spouses were accompanying?

Change the Table 2 format as that in supplemental Table 1. Give the number of cases and controls for each genotype.

Minor revision:

Cite the reference for Haplovview on page 5 in the reference list.

Give the Taqman assay numbers in the supplemental table and cut down on the text.

Explain how multiplicative interaction was estimated.

Explain what is “therapy-related AML” on page 12.
Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.