Reviewer’s report

Title: The PstI/RsaI and DraI polymorphisms of CYP2E1 and head and neck cancer risk: a meta-analysis based on 21 case-control studies

Version: 2 Date: 13 April 2010

Reviewer: Varghese George

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Minor Essential Revisions:

For the RsaI analysis, the authors have consistently shown that there is no difference between the models “Homozygous vs wild” and “Recessive”, indicating that if at all there is a statistical significance, it is simply for the case of “recessive vs. rest”, and the other finding is redundant. Same thing applies for the Dra analysis also (“AA vs TT” and “Recessive”). Thus, eliminating redundancies will reduce the size of tables 2 by half and make them more comprehensible.

The authors found significance only in the Asian sub-population. However, it is not clear how “Asian” is defined. I infer from the manuscript that the Indian subpopulation is not included among Asians. If so, it should be clarified. It is somewhat strange to conclude that the significance found among Asians is potentially due to chance. Both Rsa and Dra analyses have consistent positive results, and majority of the studies were included in the Rsa analysis. Investigation of ethnic differences may need further exploration.

The quality assessment (high vs low) is so vague and poorly defined, and therefore stratification based on that is ill advised. The Dra analysis indicates significance for low-quality study, which is counter-intuitive.

It is not clear if any adjustments for multiple comparisons are incorporated in the analysis.

To test possible heterogeneity among studies, the authors performed both Q-test and I-square test. In the result section, the authors should clarity from which test the P-values for heterogeneity come from.

The authors presented forest plot for random-effects model in Fig 1 and Fig 2. In the Statistical Analysis section, the authors stated that "If heterogeneity existed, the random effects model, ..., was adopted to calculated the overall OR value. Otherwise, the fixed effects mode (the Mantel-Haenszel method) was used". Given that no heterogeneity was found, why bother presenting these figures? They could easily be eliminated without losing any meaningful information.

The legends of both Fig 1 and Fig 2 states, "... its area is proportional to the
weight of the study”. If figures 1 and 2 are included, then these weights should be defined in the main text.

**Level of interest:** An article of importance in its field

**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.