Reviewer's report

Title: Serum levels of selenium and smoking habits at age 50 influence long term prostate cancer risk; a 34 year ULSAM follow-up

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Reviewer: Steinar Tretli

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While there is a rather strong evidence for an inverse relationship between selenium and prostate cancer, the role of cigarette smoking on prostate cancer is unclear. As pointed out by the authors: It has been shown an association between smoking and selenium which makes the study biological plausible.

The data material used is of good quality and especially the last author has a large experience in this type of cancer research. The manuscript is mainly clear and well written, but it is a couple of problems that should be looked upon:

1. At the bottom of page 5 it is said "Use of the drug clozapine. none of the participants reported use of this drug" The question is: At which time do they report?

2. At the top of page 10 it is said that BMI (23.5-26.0) appeared to have a higher risk of developing prostate cancer (Table 2). Maybe, but the result is not significant.

3. I have a problem to understand Figures 2a-c. Figures 2a,b show the cumulative incidence of death without prostate cancer for smokers and non-smokers. Accordingly, Figures 2c,d demonstrate the cumulative incidence of prostate cancer. Why are the cumulative incidences 0.00 in a long period before they start increasing?