Reviewer’s report

Title: Human Papillomavirus Serology and Tobacco smoking in a Community Control Group

Version: 2 Date: 7 August 2014

Reviewer: Lukas E Brugger

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Kelsey and colleagues present results from a risk factor study for head and neck cancer. They found no association of HPV16 serological markers with smoking. However, smoking was positively associated with seropositivity for the HPV16 L1 capsid antigen in younger participants, while older participants showed an opposite association. Data on this topic is scarce and therefore relevant to present. However, some relevant aspects should be revised:

Major compulsory revisions

1. A clear hypothesis should be formulated in the introduction (which should be shortened)

2. No difference in the findings after adjusting for age of first intercourse and number of sexual partners would strongly suggest that smoking does influence the immunological response to HPV. This should be the main conclusion. However, there is a certain contradiction between lines 194 and 249 concerning this point, which should be clarified.

3. The conclusion in the abstract and in the discussion should be adapted. How do the authors conclude no differential susceptibility for infection among smokers?

4. The authors should indicate how long L1 (capsid) antibodies and also early gene products can be detected in the blood after exposure to the virus. This would be important with regard to the interpretation of age-associated differences in the detection of HPV16 antibodies. What are the differences in expression between early gene products according to the literature? Is there any information on sensitivity/specifity of these markers?

5. In the conclusion section the authors wrote, that HVP16 exposure is modified by age and smoking. Can this be stated, when there is no association between early gene products and age/smoking?

Minor essential revisions:

1. The abbreviation “IRB” should be explained in the methods section.

2. Repetition, but also contradiction in lines 151 and 156 (E7?)

3. Table 1: Why was there a cut off of 16 for number of sexual partners? Would it not be more appropriate to compare continuous figures?
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