Reviewer’s report

Title: Population risk factor estimates for abdominal aortic aneurysm from electronic medical records: a case control study

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Reviewer: Jan Lindeman

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The paper by Smelser provides optimizes the abilities provided by the unique character of the Geisinger Health system. The authors’ focus on risk factors for AAA is logical given their excellent record of previous AAA research. The paper is well written and provides clear insight in the strategies used, yet limited information is provided with regard to the relevance of the findings for AAA research. In my view the authors should make clear that their work focuses on incident AAA disease and not on AAA progression, which may involve different risk factors. To what extend are the findings influence by co-morbidity. As outlined by the authors even in a time of screening most AAAs are incidental findings. How is co-morbidity influencing the results of this study (i.e. kidney disease as a reason for an abdominal ultra sound). Are the observed associations causative or correlative.

With the exception of benign and malignant neoplasms (is smoking the co-correlate for the association between malignant neoplasm and AAA?) the authors did not identify novel risk markers for AAA disease. Yet I am somewhat surprised by the relative low risk for sex (2.0) does this reflect a more masculine life style in the Geisinger cohort?

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

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