Reviewer's report

Title: Inflammation gene variants and susceptibility to albuminuria in the U.S. population: analysis in the Third National Health and Nutrition Examination Survey (NHANES III), 1991-1994

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Reviewer: Frederic Fumeron

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In this population-based study (n=5321), 60 SNPs within 27 inflammatory response genes were examined with respect to albuminuria either as continuous or as dichotomized variable. Only few significant associations were found after correction for multiple testing, most of the time with the dichotomized variable, and only in one ethnic group.

The study has been well conducted and analyzed. The paper is well written.

Minor essential revisions

1) Page 9: usually, the codominant mode of inheritance means that each allele has an impact on phenotype so that heterozygotes have an intermediate phenotype, i.e. it is synonymous of “additive”. The assessment of risk by logistic regression for each genotype by comparison to a reference genotype does not assume any mode of inheritance. The most frequent genotype is not always the “wild type” genotype.

2) Only few significant results were found and the associated variants in one group usually do not replicate in other groups. Provide power calculations taking into account the size of the different ethnic groups.

3) It has been shown for the “best” genes discovered by GWAS (TCF7L2 in T2D, FTO in obesity) that they replicate in many ethnic backgrounds. Are the results not replicating here due to a lack of power, or to interactions? (As stated by the authors themselves, other genes which may be of more importance need to be tested.) Although (or since) the results are significant for only one ethnic group, the authors may perform a kind of meta analysis which could evidence the effect of some SNP.

4) In the pdf, the last lines of table 1 are missing.

Level of interest: An article whose findings are important to those with closely related research interests

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