Reviewer’s report

Title: Birth weight and the risk of atrial fibrillation in whites and African Americans: the Atherosclerosis Risk in Communities (ARIC) Study

Version: 1  Date: 30 March 2014

Reviewer: Lars Frost

Reviewer’s report:

1. It was not possible to examine birth weight (BW) as a continuous variable, because the exposure (BW) was self-reported in approximately 50% of the participants. This may lead to much misclassification of exposure.

2. BW was categorized into low, medium and high. The number of outcomes in each category was 49, 735 and 98. The low number of outcomes in the low BW category may compromise the robustness of findings.

3. Why is baseline at time of entry to the ARIC cohort? If the exposure is BW, then baseline should be the date of birth.

4. The authors claim that they adjusted for potential confounders and/or mediators. They do that by putting all information (age, gender, study center, income, education, diabetes, systolic blood pressure, hypertension medication, smoking, height, body mass index, prevalent myocardial infarction and heart failure) in a Cox regression model. There are no clear cut distinctions of confounding and intermediate pathways. This leads to confusion in relation to causality. It could be important to line out models of causation that are easy to understand. For example if higher blood pressure at baseline is associated with lower BW, then blood pressure at baseline should not be adjusted for, because it is in the causal pathway between low BW and AF.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.