

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #137

1. Title (length 26):

Vasectomy & Atherosclerosis

Full title: Is vasectomy associated with carotid artery wall thickness and distensibility?

2. Writing Group:

(lead) ZJ Zheng, A. Nabulsi, G. Evans, W. Riley, G. Heiss, and other investigators who are interested in this project

3. Timeline:

Analyses are expected to be completed with 8 months; a report formatted as a draft manuscript can be presented to the writing group within 2 months after the completion of the analysis.

4. Rationale:

The endothelial injury of arterial wall, due to factors including immunological, chemical, mechanical or hormonal, has been suggested as the first step in current theory of atherogenesis. One of the mechanisms for immunological injury could be triggered by vasectomy, ostensibly a safe and simple method of male contraception. It has been observed that autoimmune response developed following vasectomy in men. Related pathological changes including immune complex deposition in kidneys and aggravation of atherosclerosis in the aorta and coronary arteries have been reported in experimental animals in various labs. There was also evidence of increased platelet aggregation in vasectomized animals. Reduced arterial extensibility has been observed in vasectomized rabbits and in vasectomized men. Epidemiological studies, however, have failed to demonstrate that vasectomy is related to clinical events, such as myocardial infarction. So far, no epidemiologic studies have examined the association between vasectomy and preclinical arterial changes.

5. Main Hypothesis:

Vasectomy is associated with arterial distensibility and B-mode ultrasonographically determined carotid wall thickness.

6. Data:

ARIC visit 1 data will be used for analyses. All male participants will be included. The main variables include vasectomy status and duration, arterial wall thickness, arterial distensibility. Other variables include center, age, race, SES, smoking, BMI, BP, ECG, medical Hx, blood lipids, and fibrinogen. Data analysis is to be performed by the lead author, with consideration given to the potential effect modification by vasectomy status.

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