

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #311

1. Title: Prospective study of CMV/Herpes and carotid atherosclerosis

2. Writing group:

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3. Timeline: Study has been completed.

4. Rationale:

Both antigens and nucleic acid sequences of CMV have been detected in smooth muscle cells from carotid artery plaques removed from patients during endarterectomy (Melnick et al., 1983; Petrie et al., 1987). Recent studies using polymerase chain reaction (PCR) have demonstrated CMV DNA in a higher proportion of vascular surgery patients than in controls (Hendrix et al., 1990; Melnick et al., 1993; Melnick et al., 1994). Epidemiological studies have shown that antibodies against cytomegaloviruses (CMV) were significantly elevated in cases with angiographically defined coronary artery disease as compared to controls (Adam et al., 1987). Previous cross-sectional analyses from the Atherosclerosis Risk in Communities (ARIC) Study showed moderate associations between subclinical atherosclerosis and antibodies to CMV (Sorlie et al., 1994).

The proposed study adds a temporal component to the current evidence. Frozen sera collected in 1974 were available from a subset of participants from the Washington County subcohort of the ARIC study who participated in a county-wide survey (Comstock et al., 1991). We report on the association between antibody titers to CMV and herpes simplex virus in 1974 and carotid atherosclerosis in the ARIC baseline (1987-89) and first follow-up examination (1990-1992).

5. Hypothesis: Antibody titers for CMV, HSV1, and HSV2 are prospectively associated with carotid atherosclerosis, as defined by mean IMT over visits 1 and 2 in a subset of Washington County participants.

6. Design/Data:

- Cases are defined as the 150 individuals with the highest mean IMT over visit 1 and visit 2, among the 1,410 Washington County ARIC participants that participated in the 1974 Survey.
- Controls are the 150 individuals with the lowest mean IMT over visit 1 and visit 2, frequency-matched to the cases within age and gender strata

Antibody titers were determined in Dr. Adam's lab. Geometric means of antibody titers, as well as positivity for antibody status using different cut-off points are compared in cases and controls.