ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #258

1. Title:
Reduced Cardiac Parasympathetic Activity in Diabetes: A Population Based Study - The ARIC Study

2. Writing Group:
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4. Timeline:
Submit Proposal to Publications Committee	12/07/93
Complete analysis	2/15/94
Submit first draft to Publications Committee	3/30/94
Submit to Journal	5/30/94

5. Rationale:
In clinical studies, it has been found that reduced parasympathetic activity is the most common neuropathy in diabetes, and that diabetics with autonomic neuropathy have 4-5 times the mortality compared to diabetes without neuropathy. It has also been established that parasympathetic function can be reliably measured by high frequency power (HF) from spectral analysis of beat to beat heart rate variability data. Several clinical studies have indicated that diabetic patients have lower HF compared to normal subjects. However, such an association has not been reported in a population based study. In ARIC Visit 1, two minutes resting beat to beat heart rate data were collected according to a standard protocol. Utilizing Fast Fourier Transformation, spectral analysis has been applied to the beat to beat heart rate data for a set of 2618 ARIC visit 1 participants - a mix of randomly sampled individuals and of ultrasound cases and their controls. From these records, HF can be calculated as a marker of cardiac parasympathetic activity. We propose this analysis to investigate the association between diabetes and parasympathetic component of heart rate variability (HF) in the ARIC Study.

6. Main alternative hypotheses:
There is reduced parasympathetic activity in diabetics compared to non-diabetics.
This association is not modified by race, gender, age, nor treatment status.

7. Data (variables, source, inclusion/exclusion):
The set of 2618 ARIC visit 1 participants, a mix of randomly sampled individuals and of ultrasound cases and their controls, will serve as study population. Study design: cross-sectional analysis, accounting for the sampling strategy. Exclusion criteria: ß-blocker users or individuals with frequent arrhythmia on 12 lead ECG; race other than black or white. Major variables include diabetes status, processed 2-minute resting heart rate data, hypoglycemic agents, prevalent CHD status, fasting glucose, demographic variables.