1. Title:
QTc and Insulin Resistance Syndrome

2. Writing Group:
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3. Timeline:
The analyses can start immediately, draft: summer 1995

4. Rationale:
In the insulin resistance syndrome elevated sympathetic activity is one of the deleterious consequences of higher insulin activity. High sympathetic activity affects certain ECG characteristics and lowers ventricular electrical stability. This may be the underlying mechanism of the previously observed predictive value of QTc prolongation for coronary heart disease mortality. In this study the cross-sectional association between the several components of the insulin resistance syndrome (insulin, glucose, blood pressure, triglycerides, cholesterol, BMI, waist-hip ratio, physical activity, energy intake) will be related to QT-interval duration, which was determined by computer measurement. To study the possibility that QTc prolongation may also result from higher levels if atherosclerosis in subjects with insulin resistance, carotid artery wall thickness will be used.

5. Main Hypothesis:
QTc prolongation is associated with elevated fasting insulin and glucose levels. Other components of the insulin resistance syndrome are more unfavorable in subjects with QTc-prolongation too. This relationship is independent from the level of atherosclerosis.

6. Data (variables, time window, source, inclusions/exclusions):
Visit 1 data: QT, insulin, glucose, weight, height, BMI, WHR, triglycerides, cholesterol subfractions, physical activity level, smoking, alcohol use, medication, serum electrolyte levels, SBP, DBP, prevalent disease variables.

We have discussed this proposal with Dr Whitsel and determined there is no overlap with ARIC proposal #219.