

## **Patients with NSTEMI Have Increased QT Prolongation as Compared to Patients with Acute Coronary Syndrome without MI**

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### **Background:**

Patients with Non ST Elevation Myocardial Infarction (NSTEMI) are at increased risk of cardiac death and subsequent infarctions. An early diagnosis is important to reduce such complications.

### **Objective:**

We aimed to investigate a possible correlation between QTc prolongation and NSTEMI.

### **Methods:**

The study population included patients admitted to the cardiology department between May 2006 and March 2011 with a diagnosis of NSTEMI or unstable angina pectoris (UAP), dichotomized by troponin levels. Three digitized ECG's were analyzed: 1) upon admission to the emergency ward, 2) after 24 hours and 3) pre-discharge. QTc was calculated using the Bazett's formula. Parameters were compared using the chi-square test for categorical variables, and the student t-test for continuous variables. Significance was set at  $p < 0.05$ .

### **Results:**

From a total of 2033 patients, 802 had documented ECG's as defined and were included in the analysis. QTc results were as follow:

	NSTEMI n = 568	UAP n = 234	p - value
QTc upon admission	430.1 ± 42	411.1 ± 32	<0.0001
QTc after 24 hours	432.5 ± 45	414.1 ± 35	<0.0001
QTc pre-discharge	424.9 ± 41	411.5 ± 36	<0.0001

Age over 65, hypertension, hyperlipidemia and family history of ischemic heart disease were significantly correlated with NSTEMI.

After adjustment for these covariates, QTc prolongation in the first ECG was still predictive for NSTEMI (HR = 2.43, CI = 1.61-3.69,  $p < 0.0001$ ).

### **Conclusions:**

QTc prolongation in the first ECG in the emergency ward, usually obtained before the results of Troponin levels, contributes to an early diagnosis of NSTEMI versus UAP. These findings may have important implications regarding revascularization strategy in these patients.