

## Endothelial dysfunction and cardiovascular mortality in patients with acute coronary syndrome

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**Background:** Although the prognostic value of non-invasive endothelial function test has been reported in several populations including heart failure patients and angina pectoris patients, it is unknown in patients with acute coronary syndrome (ACS). Furthermore, the role of endothelial dysfunction in increased risk for specific causes of death has not been investigated.

**Purpose:** To study the relation between endothelial dysfunction and the risk of death in ACS patients, both overall and with regard to the main causes of death.

**Method:** Six hundred and ninety-two patients who were hospitalized for ACS from 2010 to 2014 were enrolled. Reactive hyperemia index (RHI) was measured to assess endothelial function non-invasively in all patients using the peripheral arterial tonometry. RHI values below 1.67 were interpreted as signs of endothelial dysfunction in accordance with the manufacturer. Patients were followed up for a median of 6.5 years.

**Result:** A mean age (standard deviation) was 66 (12) years, and 542

patients (78%) were male. The patients in this study consist of 377 ST-elevation myocardial infarction (54%), and 263 non ST-elevation myocardial infarction (38%), and 52 unstable angina (8%). Endothelial dysfunction was detected in 276 patients (40%). During the follow-up period, 84 patients (12%) died (48 from cardiovascular disease, 36 from other causes). Patients with endothelial dysfunction had an increased risk of death (hazard ratio (HR) 1.83, 95% confidence interval (95% CI): 1.19–2.83,  $p=0.006$ ) compared with those without endothelial dysfunction. Analyses for specific causes of death showed that patients with endothelial dysfunction had a 2.4-fold higher increased risk of cardiovascular death (HR: 2.44, 95% CI: 1.35 to 4.59,  $p=0.003$ ) after multivariate adjustment. However there was no significant relation between endothelial dysfunction and non-cardiovascular mortality (HR: 0.69, 95% CI: 0.34 to 1.36,  $p=0.29$ ).

**Conclusion:** Endothelial dysfunction is strongly associated with an increased risk of cardiovascular mortality in ACS patients.

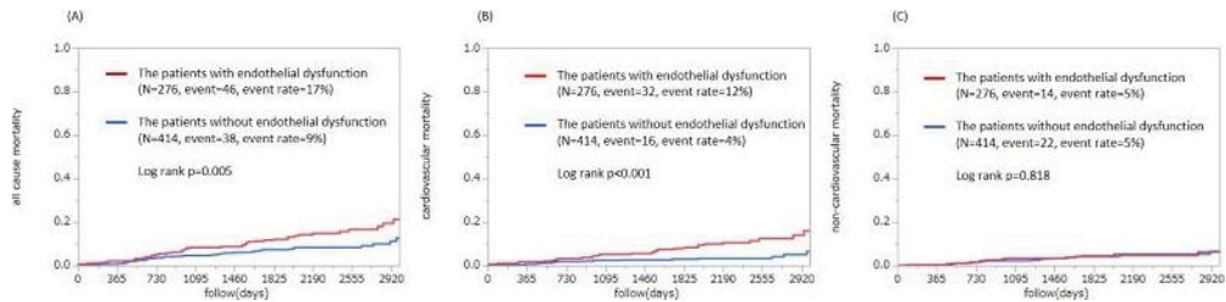


Figure 1