Acute coronary syndrome without significant stenoses on coronary angiography: clinical characteristics and intermediate outcome

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Background: Acute coronary syndrome (ACS) in patients with normal coronary arteries has previously been described. However, information on clinical characteristics and the intermediate outcome are lacking.

Methods: We retrospectively analysed all patients with acute onset of chest pain plus ischemic marker elevation from May 2002 through April 2011. Patients without coronary artery stenosis ≤50% on angiogram (ACOS-group) were compared to 253 patients with non-ST-elevation NSTEMI-group myocardial infarction undergoing percutaneous coronary intervention (NSTEMI-group) [Figure 1].

Results: Normal coronary angiograms were obtained for 272 out of 4.958 ACS patients (5.5%). ACOS patients were significantly younger (mean age 61.9 ± 14.0 versus 65.4 ± 12.0; p=0.003), female (49.3% versus 28.9%; p<0.001), and had less severe anginal symptoms on presentation (CCS class III/IV 41.9% versus 49.8%; p=0.05). ACOS patients had lower ischemic-marker levels (1.9 ± 6.7 versus 27.4 ± 68.7 [Troponin], and 3.3 ± 4 versus 14.2 ± 20 [Creatine kinase]; p<0.001 for both), well preserved left ventricular function (58.7 ± 12.6 versus 48.1 ± 12.4; p<0.01), and less frequent regional wall abnormalities (24.7% versus 67.7%; p<0.001). Mean follow-up (FU) was 19 ± 1 (ACOS-group) versus 18 ± 1 (NSTEMI-group) months. Adverse events during FU were significantly less frequent in the ACOS-group: All-cause mortality as well as cardiac mortality was significantly lower in the ACOS-group (3.5% versus 14.4%; p<0.001, and 2.4% versus 10%; p<0.01, respectively), ACS (0.4% versus 10.4%; p<0.001), recurrent anginal symptoms (28.6% versus 45.2%; p<0.001), readmission to hospital (5.1% versus 80.4%; p<0.001), and congestive heart failure (11% versus 41.3%; p<0.001) [Figure 2].
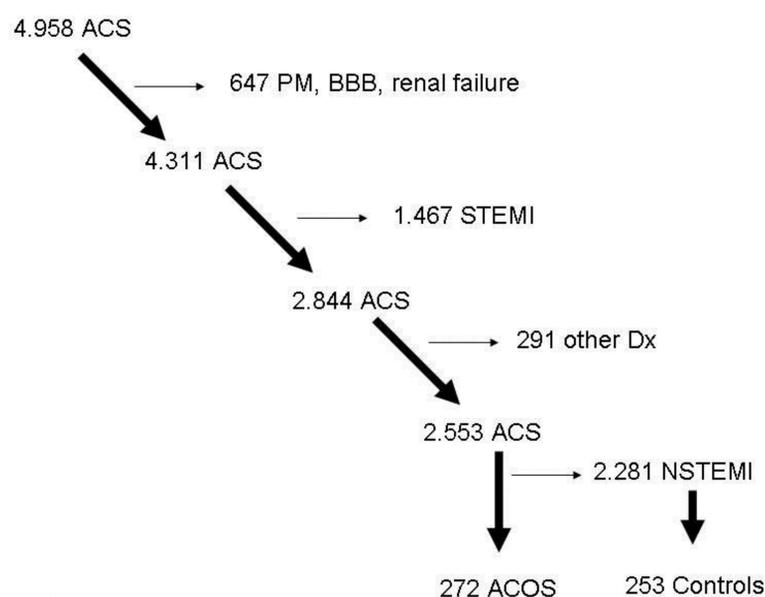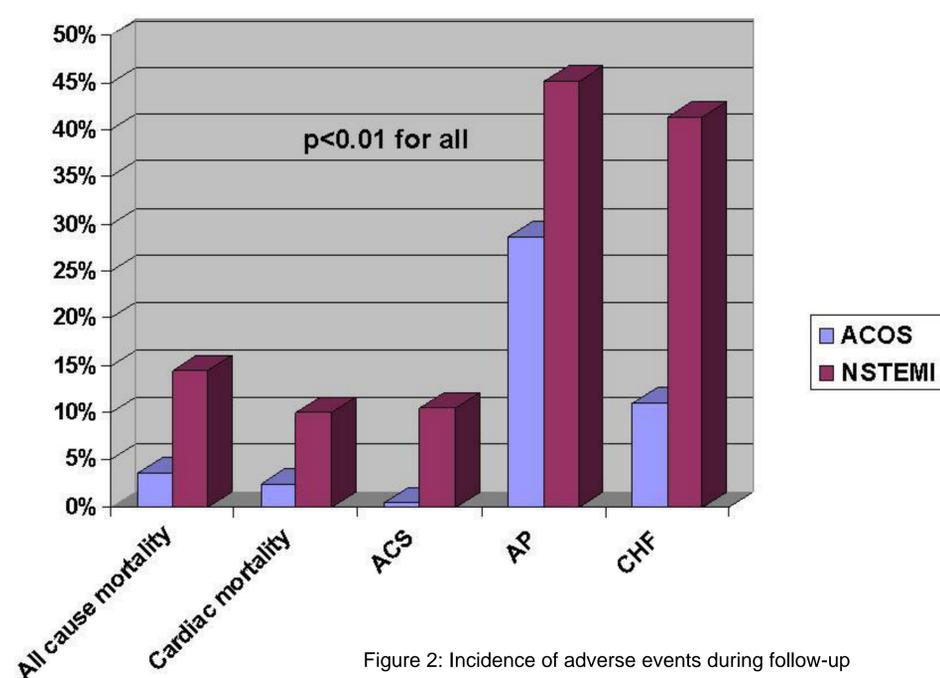

Figure 1: Patient flow chart

Figure 2: Incidence of adverse events during follow-up

Conclusions: ACS in patients with normal coronary arteries is infrequent, has different characteristics on presentation, and is associated with a significantly better intermediate outcome compared to non-ST-elevation myocardial infarction patients.