

## Association of bleeding, mortality and sex in acute coronary syndromes: the missing triangle

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### Abstract

#### AIMS:

Percutaneous coronary intervention (PCI) and antithrombotic drugs are the standard therapy for patients with acute coronary syndromes (ACS), but their impact on bleeding and mortality in women has not been adequately investigated.

#### METHODS:

This was a prospective observational cohort study of ACS patients, who were referred to 6 of the 13 centres belonging to the REgistro regionale AngiopLastiche dell'Emilia-Romagna programme in Emilia-Romagna for coronary angiography and PCI between June 2010 and November 2011. The aim of the study was to verify whether the incidence of Global Registry of Acute Coronary Events-defined in-hospital bleeding after an ACS is significantly higher in women than in men, and to evaluate its impact on short and long-term mortality.

#### RESULTS:

The analysis involved a total of 1686 patients (511 women and 1175 men). The women were older and more frequently affected by hypertension, congestive heart failure and single-vessel disease; however, none of the clinical or procedural variables was significantly different between the sexes after statistical adjustment. There was a significantly higher rate of in-hospital bleeding among the women [8.6 vs. 5.8%; adjusted odds ratio 1.73, 95% confidence interval (CI) 1.19-2.52,  $P = 0.004$ ], but the adjusted hazard ratio for short and long-term all-cause mortality was not significantly different. After optimal adjustment, bleeding, but not female sex, was identified as a predictor of short-term all-cause mortality (hazard ratio 2.68, 95% CI 1.21-5.93,  $P = 0.01$ ), but this was not confirmed in the case of long-term mortality (hazard ratio 1.57, 95% CI 0.91-2.71,  $P = 0.10$ ).

#### CONCLUSION:

After optimal adjustment for baseline differences, the findings of this contemporary Italian PCI registry study showed that women experience bleeding more frequently, but do not have worse mortality outcomes than men. Bleeding was confirmed as an independent predictor of short-term mortality.