Good long-term survival of Icelandic women following acute myocardial infarction

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Background: Mortality from coronary artery disease has decreased considerably in recent decades in Western societies, but less in women compared with men. Possible explanations for this difference include delayed medical attention, atypical presenting symptoms and also a higher incidence of myocardial infarction with non-obstructive coronary arteries in women. In addition, recent studies suggest that women with acute myocardial infarction (AMI) are less likely to receive treatment according to guidelines, which results in worse prognosis for women. Iceland is listed as one of the most gender-equal countries in the world and we hypothesised that this may reduce the gender gap in treatment and survival following AMI.

Purpose: The aim of this nationwide study was to compare clinical characteristics and treatment of men and women with AMI, identify independent risk factors for long-term mortality and estimate the impact of gender on relative survival.

Methods: This was a retrospective cohort study on all patients in Iceland with STEMI (2008–2018) and NSTEMI (2013–2018) who had obstructive coronary artery disease on coronary angiography. Information about patients and angiography results and treatment were obtained from the Swedish Coronary Angiography and Angioplasty Registry (SCAAR) and electronic health records. Data for all-cause mortality was extracted through linkage with Statistics Iceland and survival was estimated with Kaplan-Meier method and Cox regression analysis used to identify significant risk factors for long-term mortality. Excess mortality from the AMI episode was estimated by comparing the survival with age- and gender-matched population in Iceland in 30-day intervals.

Results: A total of 1345 STEMI patients (24% women) and 1249 NSTEMI patients (24% women) were evaluated. Women with both STEMI (mean age: 71±11. vs. 67±12) and NSTEMI (mean age: 69±13 vs. 62±12) were older and less likely to have a cardiovascular history. There was no gender difference in the extent of coronary artery disease or treatment. Whilst long-term survival for women following STEMI (A) was lower, female gender was not found to be an independent risk factor for mortality after adjusting for age and comorbidities (HR 0.98, 95%-CI: 0.75–1.29). The survival after NSTEMI was similar between genders (B) and female gender was a protective prognostic factor (HR 0.67, 95% CI: 0.46–0.97). There was an excess 30-day mortality following STEMI (C) and NSTEMI (D) for both women and men compared to the matched Icelandic population, but thereafter the mortality rate was similar.

Conclusion: Our findings indicates that women and men in Iceland receive comparable treatment for AMI, including invasive treatment. Prognosis following NSTEMI is better in women. Higher early mortality after STEMI may be caused by delays in presentation and diagnosis as well as older age of women because female gender was not a significant risk factor for mortality.