Sex-based differences in short-term survival following out-of-hospital cardiac arrest


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Background: Survival among OHCA patients remains low, thus it is important to understand the difference in short-term survival according to sex to identify subgroups of OHCA that could benefit from future preventive strategies.

Purpose: To examine sex differences in patient characteristics and the 30-day survival in patients with OHCA during 20 years of follow-up.

Methods: The study was observational and register-based, using information from the Danish Cardiac Arrest Registry (2001-2020) and linking at an individual level to other Danish national registers. Patients between 18-100 years old, with a presumed cardiac cause of OHCA, and not witnessed by emergency medical services (EMS) during their OHCA were identified. Baseline characteristics were expressed as medians (interquartile range [IQR]) or frequencies (percentages), and temporal trend analyses of 30-day survival were performed according to sex.

Results: We included 50,270 OHCA patients between 2001-2020 (17,179 [34%] women). Compared to men, women were older, with a median age of 76 years (Q1-Q3: [66-84]), had a higher proportion with a basic education level, and low-income. They also had a higher burden of comorbidities such as respiratory (38% vs. 32%; p<0.001), especially chronic obstructive pulmonary disease (COPD, 19% vs. 14%; p<0.001), and a higher burden of psychiatric disease (13% vs. 8%; p<0.001). Related to medication 180 days before OHCA, women compared to men had more prescriptions of antibiotics (47.5% vs. 34.9%; p<0.001), steroids (18% vs. 13%; p<0.001), and QT-prolonging drugs (17% vs. 11%; p<0.001). By contrast, men had more cardiac-related comorbidities, especially ischemic heart disease (24% vs. 17%; p<0.001), and accordingly a higher prescription of anticoagulant drugs (17% vs. 13%; p<0.001), and statins (32% vs. 25%; p<0.001). Concerning cardiac arrest-related factors, women had more OHCA in a private home, less witnessed, were less likely to receive cardio-resuscitation and defibrillation and had less shockable rhythm. Figure 1 shows the temporal trend of OHCA incidence and 30-day survival by sex during 2001-2020. Although there has been an increase in survival for both sexes, women had lower 30-day survival compared to men throughout the period study. The average 30-day survival by sex during 2001-2010 vs. 2011-2020 was, for women 4.7% vs 8.2% and for men 8.1% vs 15.4%.

Conclusions: From 2001 to 2020, there was an increase in the 30-day survival in both sexes. However, the survival discrepancies increased between the sexes, where women had less shockable rhythm and lower 30-day survival compared to men.