Sex differences in symptom presentation in acute coronary syndrome: a systematic review and meta-analysis

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Background: Timely recognition of patients suspected for acute coronary syndromes (ACS) is important for successful treatment with reperfusion therapies. Previous research has suggested that women with ACS present with different symptoms compared with men.

Purpose: This review assesses the extent of sex differences in symptom presentation in patients with confirmed ACS, defined as a diagnosis of myocardial infarction or unstable angina.

Methods: A systematic literature search was conducted in PubMed, Embase and the Cochrane library up to June 2019. Title-abstract screening and subsequent full-text screening was independently done by two reviewers according to predefined in- and exclusion criteria. Methodological quality of the relevant studies was assessed using the Newcastle-Ottawa Scale. Pooled odds ratios (OR) with 95% confidence intervals (CI) of a symptom being present in women relative to men were calculated using aggregated and cumulative meta-analyses as well as sex-specific pooled prevalences (PP) for each symptom.

Results: Twenty-seven studies were included. Compared to men with ACS, women with ACS had a higher odds of presenting with pain between the shoulder blades (OR 2.15; 95%CI 1.95-2.37), nausea or vomiting (OR 1.64; 95%CI 1.48-1.82) and shortness of breath (OR 1.34; 95%CI 1.21-1.48). Women had a lower odds than men of presenting with chest pain (OR 0.70; 95%CI 0.63-0.78) and diaphoresis (OR 0.84; 95%CI 0.76-0.94). Both men and women presented most often with chest pain (PP men 79%; 95%CI 72-85, PP women 74%; 95%CI 72-85) and other symptom prevalence also showed substantial overlap. The presence of sex differences has already been established in the early 2000’s, and newer studies have mainly been confirmatory and did not materially change the cumulative findings.

Conclusions: Women with ACS do have different symptoms at the time of presentation than men with ACS, but also show considerable overlap. Since these differences have been shown for years, symptoms of ACS should no longer be labelled as either ‘atypical’ or ‘typical’.