

**Title:** Cardiovascular Risk Factors and Mortality Among Acute Coronary Syndrome in the Middle East: A Systematic Review and Metanalysis

**Category:** Acute Coronary Syndromes

### **Abstract**

**Background:** Traditional risk factors of cardiovascular disease such as hypertension, dyslipidemia, smoking, diabetes mellitus are significant contributors for Acute Coronary Syndrome and mortality. To date, there has been no systematic review or metanalysis conducted to estimate risk factors and mortality in acute coronary syndrome patient in the Middle-East population. Therefore, a better understanding of these issues could help to tailor effective intervention and strategies to improve the outcomes in ACS patients.

**Aim:** We aim to perform a systematic review and metanalysis to investigate the prevalence of risk factors and mortality in acute coronary syndrome patients in the Middle East.

**Methods:** A systematic review of observational studies conducted from 2009 to 2019 (January) on acute coronary syndrome patients were systematically searched in PubMed, Scopus, Google Scholar using MeSH terms. Data from included studies were extracted and assessed the outcome. Metanalysis was performed using a random effect model with DerSimonian-Laird weighting obtain pooled effect sizes.

**Results:** From 595 potentially relevant citations, 36 studies were included in the systematic review. Of these, fourteen studies (N=59,527) were included in the metanalysis. Around 70.8% (95% confidence interval (CI): 63.8%-77.8%) were men, with STEMI (30.5%), NSTEMI (27.5%) and unstable angina (10%). Cardiovascular risk factors such as hypertension accounts 51.8% (95% CI: 43.8%-59.8%), diabetes mellitus (40.3%, 95% CI: 33.3%-47.4%), dyslipidemia (37.7%, 95% CI:30.2%-45.3%) and smoking (38.3%, 95% CI:22.4%-54.1%). Overall mortality was (4.5%, 95% CI:2.9%-6.5%), in-hospital mortality (4.9%, 95% CI: 2.8%-7%), and 30-day mortality (4.4%, 95% CI:2.4%-6.4%).

**Conclusion:** The prevalence of traditional risk factors were significantly higher among ACS patients and increased risk of in-hospital mortality. Interventions are urgently needed to early identify and control these risk factors to improve outcomes in patients with ACS in the Middle East.