

Temporal trends in cardiogenic shock in Switzerland: ten-year results from a nationwide registry

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Background: In cardiogenic shock (CS) complicating acute coronary syndromes (ACS) the association between temporal trends of CS incidence, improved treatment, and mortality is unclear.

Methods: The nationwide Acute Myocardial Infarction in Switzerland (AMIS Plus) registry enrolled 23,696 ACS patients during the years 1997–2006. In patients with CS complicating ACS, CS incidence, treatment applied, and determinants of CS development during hospitalization and in-hospital mortality were analyzed. Special regard was given to patients with CS on admission vs. patients with CS developing during hospitalization.

Results: Rates of overall CS ($n = 1,977$, 8.3% of all ACS patients; $p < 0.01$ for temporal trend) and CS during hospitalization ($n = 1,413$, 6.0% of all ACS patients and 71.5% of CS patients, respectively; $p < 0.0001$ for temporal trend) declined, while rates of CS on admission remained unchanged ($n = 564$, 2.3% of all ACS patients and 28.5% of CS patients, respectively; see Fig.). Rates of percutaneous coronary intervention (PCI; 65.9% in 2006; $p < 0.001$ for temporal trend) and intra-aortic counterpulsation (37.1% in 2006; $p < 0.01$ for temporal trend) increased, while rates of thrombolysis decreased (5.1% in 2006; $p < 0.01$ for temporal trend). In-hospital mortality decreased from 62.8% to 47.7% in overall CS ($p < 0.01$ for temporal trend), from 73.8% to 46.6% in CS on admission ($p = 0.009$ for temporal trend), and, to a lesser extent, from 60.9% to 48.9% in CS during hospitalization ($p = 0.094$ for temporal trend). While CS was the most important independent predictor of in-hospital mortality in patients with ACS (adjusted odds ratio 20.8, 95% confidence interval 16.1–27.1; $p < 0.001$), PCI was an independent predictor of both survival (adjusted odds ratio 0.37 for in-hospital mortality, 95% confidence interval 0.28–0.49; $p < 0.001$) and CS development during hospitalization (adjusted odds ratio 0.70, 95% confidence interval 0.56–0.87; $p = 0.002$).

Conclusions: During the last decade, increased PCI rates were associated with both decreased in-hospital mortality rates among patients with CS and decreased rates of CS development during hospitalization among patients with ACS. Therefore, in patients with ACS PCI may prevent CS.

