Coronary Artery Disease, Acute Coronary Syndromes, Acute Cardiac Care –
Acute Coronary Syndromes – Epidemiology, Prognosis, Outcome

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Risk factors, revascularization therapies and cardiovascular mortality in countries with middle and low public health expenditure

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Background: Studies from countries with high public health expenditure (PHE) have reported a decline of the rates of mortality from cardiovascular disease (CVD).Given that most mortality from CVD occurs in countries with low and middle PHE, there is a need for broader information on the relationship between variability in disease burden and outcomes in such countries.

Purpose: The aim of this study was to evaluate the relation among risk factors, revascularization therapies and short-term mortality from acute coronary syndromes (ACS) in patient admitted to hospitals in middle versus low PHE countries.

Methods: Data were derived from 18,704 patients admitted to 41 hospitals referring data to the ISACS-TC registry (NCT0128776). Patients were divided in two groups:low and middle PHE. Bosnia and Herzegovina,Croatia,Hungary,Italy,and Serbia have high PHE values, whereas Macedonia, Romania, Lithuania, Russian Federation, Kosovo,Moldova, and Montenegro, have low values. Main outcome measure was 30-day mortality. We used logistic-regression models to assess the effect of variables on the associations of interest.

Results: There were 18,704 patients admitted to hospital for an ACS. Of these patients, 45% were in the low PHE group and 55% in the middle PHE group. Patients in middle PHE group were older (64% vs 61%), had higher prevalence of traditional risk factors, namely hypertension (75% vs 66%), hypercholesterolemia (55% vs 31%), diabetes (28.58% vs 23.10%), and positive family history of coronary artery disease (45.66% vs 17.56) as compared with patients in the low PHE group.Furthermore, patients in the middle PHE group had more frequently history of prior ischemic heart disease and higher rate of ST segment elevation myocardial infarction (STEMI) as clinical presentation (63.91 vs 61.98). The crude 30-day mortality rate was 6.97% in the middle PHE and 5,82% in the low PHE group. After multivariable adjustment for comorbidities and treatment covariates, patients in the middle PHE group had a better outcome compared with those in the low PHE group (OR 0.64; 95% CI 0.45–0.93).As most patients presented to hospital with STEMI we performed separate analyses for such patients and stratified outcomes in function of time to hospital presentation from initial symptom onset. The odds of mortality were still lower in patients in the middle PHE group (OR 0.41; 95% CI 0.22–0.76) if they presented within 6 hours from symptom onset.In contrast there were no difference in outcomes between middle and low PHE groups (OR 0.69; 95% CI 0.34–1.44) in patients with delayed presentation.This held true even in patients undergoing primary percutaneous intervention (OR 1.02; 95% CI 0.43–2.39).

Conclusions: There are significant costs and infrastructure limitations that prohibit most countries with low PHE from having timely admission to hospital of patients with suspected ACS. Currently, many of the Eastern European countries are facing an enormous burden of mortality from CVD.