

## Temporal trends in the management of severe hyperglycemia among patients hospitalized with acute myocardial infarction

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**Background:** Elevated blood glucose (BG) is associated with an adverse prognosis in acute myocardial infarction (AMI) patients. While guidelines recommend insulin therapy to lower markedly elevated BG in AMI patients, it is unknown whether these recommendations have impacted BG management over time. **Methods:** We studied 39,775 AMI patients hospitalized from 2000 to 2008 in 55 US medical centers contributing to Health Facts, a national database with extensive data on in-hospital BG and insulin use. Using all available BG measures during the hospital stay, we restricted our analysis to patients with a mean BG  $\geq 200$  mg/dl and examined temporal trends in insulin use with hierarchical logistic regression models. **Results:** Overall, 4330 patients (11% of the entire cohort) had mean hospitalization BG  $\geq 200$  mg/dL and this proportion decreased from 2000 to 2008 (12% to 8%,  $p$  for trend  $< 0.001$ ); 75% of these patients had diabetes. In total, 61% of AMI patients with mean BG  $\geq 200$  received any insulin and only 16% received intravenous (IV) insulin during hospitalization. Hierarchical multivariable models showed an increased likelihood of insulin use over time (**Figure**). However, about one in three patients continued to receive no treatment for markedly elevated BG. **Conclusions:** Despite some improvement over time, insulin treatment rates among hospitalized AMI patients with severe, sustained hyperglycemia remain low. These findings likely reflect continuing uncertainty regarding optimal BG management during AMI.