

Title: Examination Of Regional Variations For In Hospital Mortality For Patients Presenting With Acute Coronary Syndrome - Analysis From Nationwide Inpatient Sample (NIS) Database

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Introduction:

The gold standard in Acute Coronary Syndrome (ACS) remains Percutaneous Coronary Intervention (PCI) within 90 minutes. Given the complexity of this procedure, there may be regional variations for rates of PCI.

Hypothesis:

There are differences in rates of PCI and mortality for patient presenting with ACS based on geographical location.

Methods:

We performed a retrospective analysis using nationwide inpatient sample database from year 2014 to identify STEMI patients using ICD-9-CM code. We identified PCI performed on the day of admission using the procedure code and time to procedure. NIS divides United States into 9 different divisions. We used multivariable logistic regression model to compare rates of PCI and in-hospital mortality of STEMI among these regions and adjusted for demographical, hospital characteristics and co-morbidities. All comparisons were made with Mountain region.

Results:

There were 116,299 patients who presented with STEMI and of these, 37,647 (32.4%) patients underwent PCI on day of admission. Stent placement occurred in 70.55% (N=26,561) of these patients. Mountain region had highest rates of PCI at 38.6% while New England region had lowest at 27.3%. On adjusted analysis, the rates of PCI were lowest in New England region (OR 0.64, 95%CI 0.59-0.70) and South Atlantic region (OR 0.67, 95%CI 0.64-0.72). The in-hospital mortality was highest in New England region at 4.9% and lowest in East North region at 4.0%. On adjusted analysis, the in-hospital mortality was highest in West South-Central region (OR 1.19, 95%CI 1.01-1.38).

Conclusions:

There are significant differences in rates of PCI in different regions of United States despite gold stand of 90-minute door to balloon time. Whether this affects the in-hospital mortality differences among different regions remains unclear. Prospective studies are needed to identify reasons behind these differences.