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Trends of mortality in patients with acute coronary syndromes submitted to urgent myocardial revascularization procedures in Brazil

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Background: Acute Coronary Syndromes (ACS) are the most common and life-threatening manifestation of cardiovascular diseases. This disease burden along with progress in cardiovascular technology has led to substantial growth in the number of cardiovascular procedures performed in ACS management. In Brazil, there are no contemporary data about in-hospital mortality related to urgent myocardial revascularization procedures. Purpose: To describe trends in mortality in patients with ACS who underwent urgent myocardial revascularization procedures in Brazil, between 2008 and 2016.

Methods: Data on hospital admission and in-hospital mortality were obtained from the database of the Brazilian Public Health System (DATASUS) over a nine-years period (2008–2016). All admissions due to ACS were identified using standard ICD codes. Additionally, data about percutaneous coronary intervention (PCI) or coronary artery bypass surgery (CABG) performed as an urgency were retrieved. Trend analyses over the period were performed using Poisson regression.

Results: Between 2008 and 2016, 472,810 urgent myocardial revascularization procedures were performed, of which 370,018 (78.3%) were PCI and 102,792 (21.7%) were CABG. The in-hospital mortality in patients with ACS submitted to PCI was 3.4%, and 6.8% among those submitted to CABG. There was an increase in the number of PCI procedures from 26,929 in 2008 to 53,542 in 2016 (98%), although the mortality remained stable (3.3% to 3.6%, respectively). CABG procedures also raised 77%, from 9,535 in 2008 to 12,262 in 2016, but the observed related mortality decreased from 8.0% to 6.3%, respectively. However, disparities among Brazilian geographical regions were noted: in 2016, mortality among ACS patients who underwent urgent PCI was lower in Southeast (3.2%) and higher in the Northeast Region (5.9%). The Southeast Region also presented the lowest CABG related mortality (5.7%), whereas the Midwest had the higher death rates (7.8%).

Conclusions: In this contemporary analysis based on national public health data, there was an increase in the number of urgent myocardial revascularization procedures in patients hospitalized for ACS in Brazil. Despite stable death rates in patients undergoing PCI, CABG-related mortality decreased significantly. Due to the heterogeneity of results among the different geographical Regions of the country, there are still opportunities to improve these national results.