

The ACCEPT Study and the Management of Ischemic Myocardial Disease in Brazil: Challenges and Opportunities in a Continental Country

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Ischemic myocardial disease, particularly in its acute manifestation as an acute coronary syndrome (ACS), remains one of the main public health challenges in Brazil and the world.^{1,2} In this context, the ACCEPT (Acute Coronary Syndrome Registry) study emerges as a crucial source of epidemiological and clinical information on the management of ACS in the Brazilian scenario, with the aim of evaluating evidence-based therapies, the occurrence of outcomes, use of reperfusion and predictors for not receiving reperfusion in patients with ACS in a multicenter national registry.^{3,4}

Brazil, with its continental dimensions and marked regional disparities, presents a unique challenge in implementing uniform strategies for the treatment of SCA. The study ACCEPT not only provides valuable data on the prevalence and types of ACS found in the country but also sheds light on the different therapeutic approaches adopted in different regions.⁵ Myocardial revascularization is a fundamental pillar in the treatment of ACS, especially in ST-segment elevation myocardial infarction (STEMI).⁶ ACCEPT demonstrates that, although primary pPCI (Primary Percutaneous Coronary Intervention) is considered the gold standard for STEMI, its availability and application vary significantly between Brazilian regions. In metropolitan areas and referral centers, primary PCI is often the first choice, in line with international guidelines that recommend its performance within 90 minutes after first medical contact.⁷ However, in less developed or rural regions, where access to hemodynamic centers is limited, fibrinolysis still plays a crucial role as an initial reperfusion strategy. This regional disparity in access to advanced healthcare resources highlights the importance of adaptive strategies in the management of ACS. The pharmaco-invasive approach, which combines initial fibrinolysis with subsequent transfer for PCI, emerges as a promising alternative in settings where immediate access to PCI is not feasible.⁸⁻¹⁰

In addition to access issues, the study also highlights variations in clinical outcomes associated with different therapeutic approaches. In-hospital and long-term mortality,

as well as the incidence of major adverse cardiovascular events (MACE), are crucial metrics that vary not only with the type of intervention but also with time to treatment.¹¹ A particularly relevant aspect highlighted by ACCEPT is the importance of time in the management of ACS. The inverse relationship between treatment delay and clinical outcomes reinforces the need for efficient health systems and well-established protocols for rapid diagnosis and intervention.¹²⁻¹⁴ A detailed analysis of reperfusion rates based on the regions studied in ACCEPT reveals significant disparities. While more developed regions, such as the Southeast and South, have higher rates of primary PCI, the North and Northeast regions still face considerable challenges in accessing this modality of treatment. For example, while the rate of primary PCI can reach 70-80% in large urban centers in the Southeast, in some areas of the North and Northeast, this rate can drop to 30-40%. These disparities in reperfusion rates reflect not only differences in health infrastructure but also variations in care protocols and the training of health professionals. In addition, it is crucial to consider clinical comorbidities and regional factors that impact timely reperfusion. Among the clinical comorbidities that frequently delay or prevent adequate reperfusion, the following stand out:

1. **Diabetes mellitus:** Diabetic patients often present with atypical symptoms of ACS, leading to delays in diagnosis and treatment.
2. **Chronic renal failure:** The presence of renal dysfunction may complicate pharmacological management and increase the risk of post-procedure complications.
3. **Advanced age:** Elderly patients often present with atypical manifestations of the disease and are at greater risk of complications, which may lead to hesitation in prescribing more aggressive therapies

Regarding regional factors that impact adequate reperfusion, we can mention:

1. **Geographical distance:** In remote regions, transportation time to specialized centers may exceed the ideal therapeutic window for reperfusion
2. **Health infrastructure:** The lack of hemodynamic centers in some regions limits access to primary PCI.
3. **Professional training:** Shortages of trained professionals in some areas can result in delays in diagnosis and treatment.
4. **Socioeconomic factors:** Low-income populations may face additional barriers to accessing health services.

In conclusion, the ACCEPT registry represents a significant advance in the understanding and management of ACS in the Brazilian context. Its findings should be used

Keywords

Myocardial Infarction; Acute Coronary Syndrome; Medical Record Linkage

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to refine clinical protocols, improve resource allocation, and ultimately reduce morbidity and mortality associated with cardiovascular diseases in Brazil. Implementing evidence-based strategies adapted to regional realities is essential to overcome the challenges posed by the country's vast territorial size and socioeconomic diversity. The path forward requires a multifaceted approach,

including investments in health infrastructure, training of professionals, public education on the warning signs of ACS, and the development of integrated care networks. Only through coordinated and evidence-based efforts, such as those provided by ACCEPT, will we be able to advance in improving cardiovascular care and reducing the burden of ACS in all regions of Brazil.

References

1. GBD 2017 Causes of Death Collaborators. Global, Regional, and National Age-sex-specific Mortality for 282 Causes of Death in 195 Countries and Territories, 1980-2017: A Systematic Analysis for the Global Burden of Disease Study 2017. *Lancet*. 2018;392(10159):1736-88. doi: 10.1016/S0140-6736(18)32203-7.
2. Ribeiro ALP, Duncan BB, Brant LC, Lotufo PA, Mill JG, Barreto SM. Cardiovascular Health in Brazil: Trends and Perspectives. *Circulation*. 2016;133(4):422-33. doi: 10.1161/CIRCULATIONAHA.114.008727.
3. Silva PGM, Berwanger O, Santos ESD, Sousa ACS, Cavalcante MA, Andrade PB, et al. One Year Follow-up Assessment of Patients Included in the Brazilian Registry of Acute Coronary Syndromes (ACCEPT). *Arq Bras Cardiol*. 2020;114(6):995-1003. doi: 10.36660/abc.20190879.
4. Ritt LEF, Barros e Silva PGM, Darzé ES, Santos RHN, Oliveira QB, Berwanger O, et al. Myocardial Infarction with ST Elevation and Reperfusion Therapy in Brazil: Data from the ACCEPT Registry. *Arq Bras Cardiol*. 2024;121(11):e20230863. doi: <https://doi.org/10.36660/abc.20230863>.
5. Mattos LA. Rationality and Methods of ACCEPT Registry - Brazilian Registry of Clinical Practice in Acute Coronary Syndromes of the Brazilian Society of Cardiology. *Arq Bras Cardiol*. 2011;97(2):94-9. doi: 10.1590/s0066-782x2011005000064.
6. Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, et al. 2017 ESC Guidelines for the Management of Acute Myocardial Infarction in Patients Presenting with ST-Segment Elevation: The Task Force for the Management of Acute Myocardial Infarction in Patients Presenting with ST-Segment Elevation of the European Society of Cardiology (ESC). *Eur Heart J*. 2018;39(2):119-77. doi: 10.1093/eurheartj/ehx393.
7. Caluza AC, Barbosa AH, Gonçalves I, Oliveira CA, Matos LN, Zeefried C, et al. ST-Elevation Myocardial Infarction Network: Systematization in 205 Cases Reduced Clinical Events in the Public Health Care System. *Arq Bras Cardiol*. 2012;99(5):1040-8. doi: 10.1590/s0066-782x2012005000100.
8. O'Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, Lemos JA, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2013;127(4):e362-425. doi: 10.1161/CIR.0b013e3182742cf6.
9. Bianco HT, Povoas R, Izar MC, Alves CMR, Barbosa AHP, Bombig MTN, et al. Pharmacoinvasive Strategy in Myocardial Infarction: Descriptive Analysis, Presentation of Ischemic Symptoms and Mortality Predictors. *Arq Bras Cardiol*. 2022;119(5):691-702. doi: 10.36660/abc.20211055.
10. Byrne RA, Rossello X, Coughlan JJ, Barbato E, Berry C, Chieffo A, et al. 2023 ESC Guidelines for the Management of Acute Coronary Syndromes. *Eur Heart J*. 2023;44(38):3720-826. doi: 10.1093/eurheartj/ehad191.
11. Jneid H, Addison D, Bhatt DL, Fonarow GC, Gokak S, Grady KL, et al. 2017 AHA/ACC Clinical Performance and Quality Measures for Adults with ST-Elevation and Non-ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology/American Heart Association Task Force on Performance Measures. *J Am Coll Cardiol*. 2017;70(16):2048-90. doi: 10.1016/j.jacc.2017.06.032.
12. Ting HH, Bradley EH, Wang Y, Lichtman JH, Nallamothu BK, Sullivan MD, et al. Factors Associated with Longer Time from Symptom Onset to Hospital Presentation for Patients with ST-Elevation Myocardial Infarction. *Arch Intern Med*. 2008;168(9):959-68. doi: 10.1001/archinte.168.9.959.
13. Pinto DS, Kirtane AJ, Nallamothu BK, Murphy SA, Cohen DJ, Laham RJ, et al. Hospital Delays in Reperfusion for ST-Elevation Myocardial Infarction: Implications When Selecting a Reperfusion Strategy. *Circulation*. 2006;114(19):2019-25. doi: 10.1161/CIRCULATIONAHA.106.638353.
14. Armstrong PW, Gershlick AH, Goldstein P, Wilcox R, Danays T, Lambert Y, et al. Fibrinolysis or Primary PCI in ST-Segment Elevation Myocardial Infarction. *N Engl J Med*. 2013;368(15):1379-87. doi: 10.1056/NEJMoa1301092.



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