

SAMU-192 and the Prehospital Approach to Acute Myocardial Infarction in Brazil: Hope for Patients or One More Missed Opportunity?

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Introduction

As of publication of the GISSI study in 1986¹, patients with acute myocardial infarction (AMI) had a new and powerful tool capable of increasing their chances of survival by as much as 50% when carried out in a timely manner: thrombolysis.

Since then, various strategies were created throughout the world in attempts to reduce the time lag from symptoms onset to treatment – the so-called “Delta T”. These strategies range from “Chest Pain Protocols”, recommendations that thrombolysis be carried out in the emergency room, educational campaigns aimed to inform the general public, as well as countless educational news reports on the subject, but none of these had greater potential than “Prehospital Thrombolysis”, i.e., thrombolysis initiated in the ambulance. A meta-analysis published in 2002² confirmed the benefits of this strategy. However, three obstacles hampered its dissemination: 1) the impossibility of reliable diagnoses carried out by the ambulance teams, usually made up of non-cardiologists or paramedics; 2) difficulties stemming from intravenous infusion of the drug in a non-hospital environment; and 3) the conduct indicated for patients with contraindication to thrombolysis or for those failing to respond to thrombolytics. The first obstacle was overcome thanks to the now common digital data transmission technology that allows on-line examination of electrocardiograms by a remote cardiologist. The second obstacle was overcome by the development³ and launch on the market of new thrombolytics given by bolus injection, thus easing use of the drug in the limited space of an ambulance. The last obstacle was resolved by integration with “regional tertiary cardiovascular intervention centers” capable of carrying out rescue angioplasty⁴.

A new concept: the prehospital approach

The exponential increase in the importance of primary angioplasty, clearly superior as a reperfusion strategy for late presenting patients⁵, high risk patients⁶⁻⁷, and obviously, those with greater risk of bleeding, led to replacement of the basic “Prehospital Thrombolysis” with the more wide-ranging

Key words

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“Prehospital Approach to AMI” that includes:

- a) early and reliable diagnosis of AMI, aided by teleconsulting;
- b) integration, whenever feasible, with regional tertiary cardiovascular intervention centers;
- c) early decision making – in the ambulance – regarding the best reperfusion strategy with immediate removal of the patient to the tertiary center when so indicated by protocol based on best evidence⁸ (Figure 1);
- d) prehospital initiation of the adjunctive treatment appropriate for each case.

At present this is the main AMI care strategy used in Europe, the use of which is growing quickly in the United States as well. A recently published study proved that this approach can achieve a 60-minute reduction in the Delta T and 30% reduction in mortality, even when the procedure is carried out by nursing staff without the presence of physicians.

In regions that lack centers capable of carrying out emergency coronary interventions (primary or rescue angioplasty) in compliance with appropriate quality standards, the use of thrombolysis should be encouraged in all patients without contraindications.

SAMU-192 and the prehospital approach to infarction in Brazil

Although great progress has been made in this area, only a very small number of AMI patients in Brazil receive any reperfusion therapy. In most of the country there simply are no “cardiovascular intervention centers”. Angioplasty is available almost exclusively in the large centers of the South and Southeast regions. However, even in these regions few patients have access to such procedures in the public health network, which shows that for quite some time yet, thrombolysis will continue to be the only reperfusion strategy available. Unpublished data furnished by the pharmaceutical industry reveal the scant frequency of the use of thrombolytics, thus demonstrating that for the great majority of Brazil’s population, the reperfusion era (initiated more than 20 years ago) has not yet begun.

However, there is new hope. On 29 September 2003, the Health Ministry (MS) created the Mobile Emergency Health Care Service - SAMU-192 with ambitious objectives, by means of Ministerial Directive 1,864. Data obtained from the site of the Health Ministry show that SAMU already serves 81 million people in 817 municipalities of 25 Brazilian states with 1,000 equipped ambulances plus ambulance boats (*ambulanchas*)

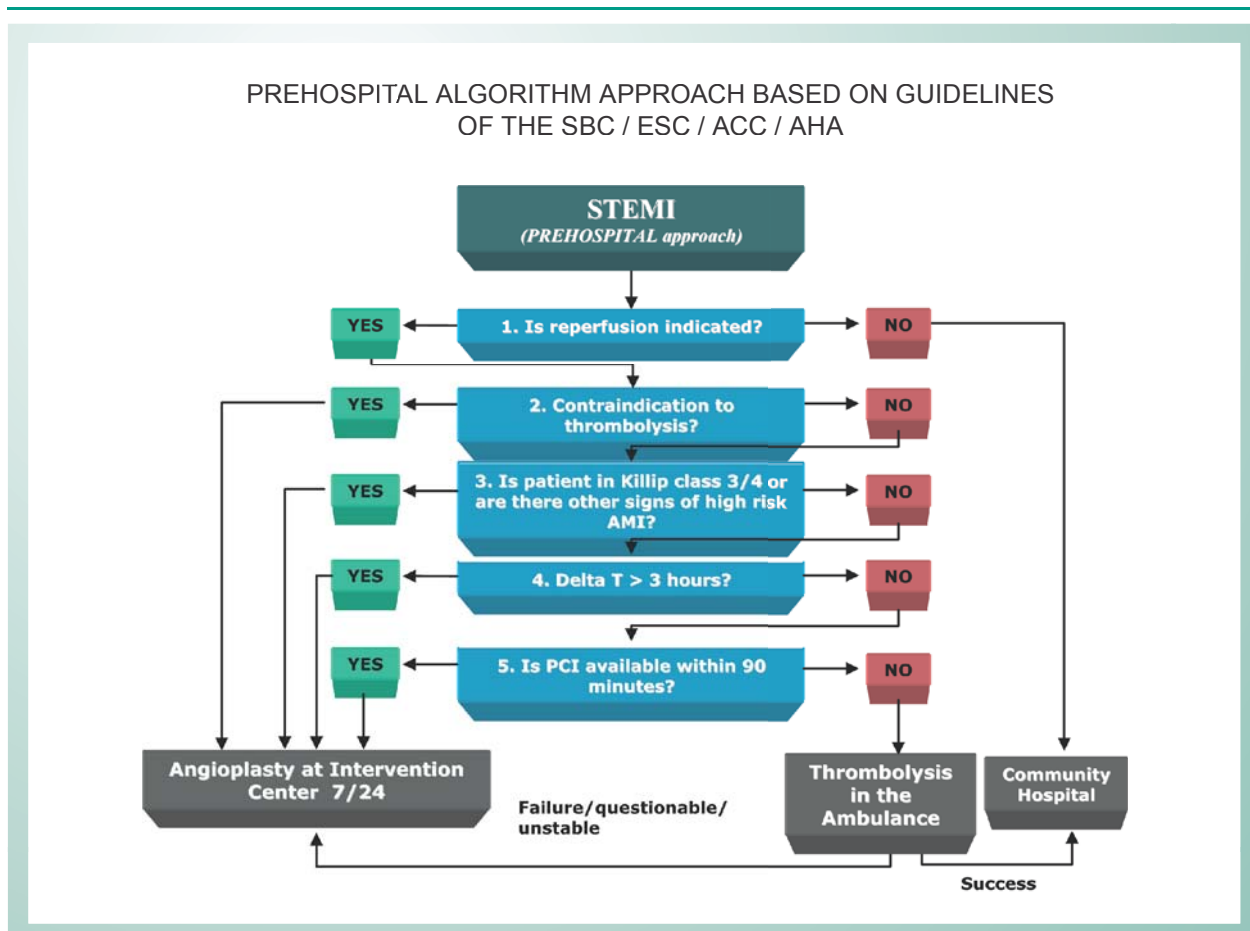


Fig. 1 - The figure shows an algorithm which, based on recommendations of the main guidelines, serves to orient the health professionals involved in the care of AMI patients when making decisions regarding the best reperfusion strategy to choose in each individual case; 7/24 = 7 days a week, 24 hours a day.

and helicopters. It is therefore frustrating to see that more than three years after its implementation, SAMU-192 fails to make routine use of prehospital thrombolysis. It is disheartening to see that at its 1st National Congress, a four-day event held in Brasília in March 2006, the theme “AMI Care” was not even on the program. Any investment of taxpayers’ money of that size is only justified if the system is capable of providing the population with quality care for its main causes of morbidity and mortality, i.e., cardiovascular emergencies. Statistics of SAMU itself show that these are the main causes of calls for mobile emergency care, a fact that points to an enormous potential for application of the current “Prehospital Approach to AMI”.

Good intentions and lots of ambulances are simply not

enough. SAMU must have qualified health professionals on its staff at all times, as well as Training Programs and Continued Education in Cardiac Emergencies, updated AMI care protocol, integration with regional cardiovascular intervention centers, a strict quality control system, and call centers that actually work. Only thus will SAMU be fulfilling its mission. The Brazilian Society of Cardiology (SBC) stands ready to take part in this effort, offering “Guidelines for Prehospital Approach to AMI”, with the participation of Brazilian specialists on the subject.

We now pass the floor to the authorities responsible for SAMU-192.

Potential Conflict of Interest

No potential conflict of interest relevant to this article

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