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SHORT COMMUNICATION

The role of general practitioners in the management of acute myocardial infarction in resource-limited settings

El rol del médico generalista en el manejo del infarto agudo en contextos con recursos limitados

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ABSTRACT

Acute myocardial infarction with ST-segment elevation (STEMI) was one of the leading causes of death in Argentina and constituted a medical emergency requiring rapid and effective intervention. Timely care significantly reduced mortality, although challenges persisted in both the prehospital and hospital settings, especially in areas with limited resources. The annual incidence was 128 cases per 100 000 inhabitants, with a hospital mortality rate of 9 % and a prehospital mortality rate of 91 %. General practitioners played a key role in the diagnosis and initial treatment of STEMI, highlighting the need for training in ECG interpretation, reperfusion options, drug administration, and coordinated work with emergency services. Although primary coronary angioplasty was the treatment of choice, prehospital thrombolysis was used as an alternative in regions with poor infrastructure. Strategies such as ongoing training, the development of care networks, the standardisation of prehospital protocols and the use of technologies such as telemedicine were proposed to overcome the structural barriers of the Argentine health system.

Keywords: IAMCEST; Reperfusion; Prehospital Care; General Practitioners; Primary Coronary Angioplasty.

RESUMEN

El Infarto Agudo de Miocardio con Elevación del Segmento ST (IAMCEST) representó una de las principales causas de mortalidad en Argentina y constituyó una emergencia médica que exigía una intervención rápida y efectiva. La atención oportuna disminuyó significativamente la mortalidad, aunque persistieron desafíos tanto en el ámbito prehospitalario como hospitalario, especialmente en zonas con recursos limitados. La incidencia anual fue de 128 casos por cada 100 000 habitantes, con una letalidad hospitalaria del 9 % y prehospitalaria del 91 %. Los médicos generalistas desempeñaron un papel clave en el diagnóstico y tratamiento inicial del IAMCEST, destacándose la necesidad de capacitación en interpretación de ECG, opciones de reperfusión, administración de medicamentos y trabajo coordinado con servicios de emergencia. Aunque la angioplastia coronaria primaria fue el tratamiento de elección, la trombólisis prehospitalaria se utilizó como alternativa en regiones con escasa infraestructura. Se propusieron estrategias como la capacitación continua, el desarrollo de redes de atención, la estandarización de protocolos prehospitalarios y el uso de tecnologías como la telemedicina para superar las barreras estructurales del sistema de salud argentino.

Palabras clave: IAMCEST; Reperfusión; Atención Prehospitalaria; Médicos Generalistas; La Angioplastia Coronaria Primaria.

BACKGROUND

Acute myocardial infarction with ST-segment elevation (STEMI) is one of the leading causes of death in Argentina and represents a medical emergency that requires rapid and effective intervention.[1,2] Timely and appropriate care can significantly reduce mortality and associated complications.[3] However, there are challenges in prehospital and hospital care, especially in areas with limited resources.

According to recent studies in Argentina, the annual incidence of AMI in Argentina is approximately 128 cases per 100 000 inhabitants.[4,5,6] The overall mortality rate is 46,5 %, with a hospital case fatality rate of 9 % and a prehospital case fatality rate of 91 %. These figures reflect the urgent need to improve prehospital care and ensure access to effective reperfusion treatments.[7,8]

General practitioners play a crucial role in the initial care of STEMI, especially in areas without immediate access to interventional cardiology services.[9,10,11] The primary learning needs identified include:

- Early identification of STEMI using electrocardiograms (ECG) is essential. Physicians must be trained to recognize specific ST segment abnormalities and differentiate between types of infarction.
- General practitioners must understand the different reperfusion options, including thrombolysis and primary angioplasty, and know when and how to apply them according to current clinical guidelines.
- Properly administering medications such as anticoagulants, antiplatelet agents, and fibrinolytics requires detailed knowledge of indications, contraindications, and potential adverse effects.
- Effective collaboration with emergency services and the implementation of rapid referral protocols to specialized centers are essential to improve reperfusion times.

Primary coronary angioplasty (PCPA) in Argentina is the treatment of choice for STEMI when performed within 120 minutes of the first medical contact.[12,13] However, thrombolysis remains the most viable option in many cases, especially in rural or resource-limited areas.

Fibrinolytic agents, such as streptokinase or tenecteplase, can be effective if administered within the first 12 hours of symptom onset.[14,15,16] Prehospital thrombolysis has been shown to reduce reperfusion times and improve clinical outcomes.[17,18,19]

This strategy combines initial thrombolysis with subsequent angioplasty, usually within 24 hours. It is beneficial when ATCp is not immediately available but can be performed within a reasonable period after thrombolysis.

There are multiple barriers to optimal care for STEMI in Argentina:[20,21,22]

- Inequality in access to health services: Low-income populations have less access to reperfusion treatments and experience heart attacks at younger ages.
- Lack of infrastructure: The absence of hemodynamics units in many hospitals limits the availability of ATCp.
- Delays in care: Long delays from symptom onset to medical care reduce the effectiveness of reperfusion therapies.

To address these barriers and improve care for STEMI, the following strategies are proposed:

1. Continuing education

Implement continuing medical education programs for general practitioners, focusing on diagnosing and managing STEMI, including simulations and practical workshops.

2. Development of Care Networks

Establish regional networks connecting hospitals without PCT capacity to specialized centers, facilitating rapid and coordinated patient referral.

3. Prehospital Care Protocols

Develop and standardize prehospital care protocols, including administering thrombolysis in ambulances and training for emergency personnel.

4. Use of Technology

Implement telemedicine systems that allow remote ECG interpretation and real-time consultation with specialists.

Effective management of STEMI in Argentina requires comprehensive care that addresses general practitioners' learning needs and the health system's structural barriers. Adequate training, context-appropriate reperfusion strategies, and improved coordination between levels of care can reduce mortality and improve outcomes for patients with STEMI.

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