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Guidelines and consensus

Evidence-based clinical practice manual: Cardiopulmonary-cerebral resuscitation[☆]



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ABSTRACT

Cardio respiratory arrest in adults arises as a consequence of coronary artery disease in more than 60% of cases. At present, it is considered a public health problem.

It is important to keep in mind that prevention, through the adoption of healthy habits, is the principle contributor to the reduction of morbimortality. Nevertheless, when a malignant arrhythmia that leads to cardiac arrest presents itself, the outcomes are directly related to the speed and quality with which cardiopulmonary resuscitation maneuvers are put into effect, and to the integral management of the clinical condition that is post-cardiac arrest syndrome.

These clinical practice handbook aim to provide sufficient information in order to guarantee appropriate medical attention in these cases. It is based on international norms of the lex artis in terms of the understanding and management of cardiac arrest.

What's more, criteria for determining brain death, and the organization of the advanced resuscitation team, which goes by various names around the world, emergency medical system, code blue, mega code, advanced resuscitation code, are included here.

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Manual de práctica clínica basado en la evidencia: Reanimación cardiocerebropulmonar

RESUMEN

El paro cardiorrespiratorio en el adulto surge como una consecuencia de la enfermedad coronaria en más del 60% de los casos. Se considera en la actualidad un problema de salud pública.

Hay que tener en cuenta que la prevención, a través de la adopción de hábitos saludables es el factor principal de la reducción de morbilidad, sin embargo cuando se presenta la

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Muerte encefálica Arritmias cardíacas

arritmia maligna que conlleva al paro cardíaco, su desenlace está directamente relacionado con la rapidez y calidad con que se realicen las maniobras de reanimación cerebro cardio pulmonar y del manejo integral de la condición clínica del síndrome posparo cardíaco.

Este manual de práctica clínica pretende brindar la información suficiente para garantizar una atención apropiada de estos eventos, y está basada en los lineamientos internacionales de la *lex artis* de la comprensión y manejo del paro cardíaco.

Además, se incluyen los criterios para determinar la muerte cerebral y la organización del equipo de reanimación avanzada, que en el mundo tiene varias denominaciones: sistema de emergencia médica, código azul, código mega, código de reanimación avanzada.

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Introduction

This purpose of this handbook is to describe the current directives for immediate and organized attention that is coordinated by a human team (health providers, doctors, nurses, nursing auxiliaries, etc.) both in practice and in the S.C.A.R.E.'s simulation laboratory. These directives are related to integral patient management during a cardiopulmonary-cerebral resuscitation event, from the start all the way up to the accompaniment of the patient by a health professional in the Intensive Care Unit.

Institutional justification

From the 2010 Resuscitation handbooks, which are currently valid, this document was created to address recommendations on primary, organized and coordinated attention by the human medical team (health providers, physicians, nurses, nursing auxiliaries, etc.). This team is in charge of providing basic and advanced life support in both the fields of clinical practice and in the S.C.A.R.E.'s simulation laboratory.

Methodology and narrative justification for completing these handbooks

This document is the product of the review of the recommendations produced by the International Guidelines of the American Heart Association (AHA), the European Resuscitation Council (ERC), and the International Liaison Committee on Resuscitation (Ilcor), and their adaptation to the Colombian context.

The development group for these handbooks, made up of educators in the area of anesthesiology and resuscitation, and of cardiology and critical care, worked together on the review of the pertinent literature of the most recent resuscitation handbooks and adopted figures corresponding to the Chain of Survival and the Basic Life Support Algorithm.

Definitions

- *Cardio respiratory arrest (CRA)*: Defined as the sudden and unexpected cessation of heart activity confirmed by the

absence of a detectable pulse, unconsciousness, or suspension of breathing in a person who previously seemed to be completely healthy.

- *Cardiopulmonary-cerebral resuscitation (CPCR), basic*: The attempt to re-establish effective circulation through the use of external chest compressions and insufflation of the lungs with air from exhalation or from some oxygen source (using a hand respirator).
- *Unconsciousness*: A situation in which a person is senseless, does not respond to stimuli, has no reflexes, and is disconnected from their surroundings. To confirm unconsciousness, proceed to evaluate 3 points of interaction:
 - Visual: Observe that the victim is not moving.
 - Physical: Proceed to move the victim by the shoulders.
 - Verbal: Ask him, "Are you alright?"
- *Trauma*: An injury in the human body caused by accidents, wounds, falls, or strong blows. Anesthetic-surgical trauma may also be included here.
- *Cervical spine*: Describes the part of the spine that corresponds to the neck zone. It is of great importance since the spinal cord, which connects the brain with the rest of the body, passes through it. Injury of the spinal cord may cause definitive paralysis of the arms and legs.
- *Arteriosclerosis*: The presence of fatty substances that form plaque on the arterial walls, which gradually produces an obstruction that limits the transfer of blood to the organs. This can eventually obstruct blood transfer completely. Nevertheless, more frequent is the rupture of the plaque and exposure to blood formed elements, together with an obstructive blood clot.
- *Coronary artery disease*: The complete or partial obstruction of one of several of the arteries that carry blood to feed the heart (coronary arteries), due to arteriosclerosis plaques or blood clots, which produces distress in the heart fibers and manifests itself as pain in the chest. A complete obstruction may cause an infarct—the death of part of the heart.
- *Ventricular fibrillation*: The continual chaotic and undulating movement of the heart's ventricles, which is not strong enough to pump blood. It is identified on the electrocardiogram (EKG) by its characteristic tracing of undulations without the presence of ventricular complexes. The condition is treated with defibrillation using special

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