Brief review on Cardiopulmonary Resuscitation.

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Introduction

When a person has cardiac arrest, a series of procedures known as cardiopulmonary resuscitation (CPR) are used to restore circulation and oxygen to the body. The American Heart Association creates the guidelines for CPR that are most extensively used in North America (AHA). These are released five years after an ILCOR meeting, which is an international committee that coordinates the practice of resuscitation. This activity explains how to assess and treat patients who may need cardiopulmonary resuscitation and emphasizes the importance of the inter professional team in enhancing care for those who are harmed [1].

Cardiopulmonary resuscitation (CPR) is a group of procedures used to restore circulation and oxygenation to the body after a cardiac arrest. Our modern method for handling this process developed from the work of a few doctors in the 1950s and will be further covered below. The American Heart Association's standards are the ones that are most frequently accepted in North America (AHA). These are released five years after the ILCOR convention. Nearly 350,000 Americans lose their lives to heart disease each year. Because of the sudden end of spontaneous organized cardiac action, half of these people will pass away unexpectedly, away from a hospital. Ventricular fibrillation is the most typical cause of sudden cardiac arrest in adults. Even though improvements in emergency cardiac treatment have increased survival rates, sudden cardiac arrest continues to be a major cause of death in many regions of the world. The top cause of death in the United States as of 2016 was heart illness [2].

Electrical defibrillation is the only effective treatment for ventricular fibrillation. Most frequently, an automatic external defibrillator is used for this (AED). Brain death is most likely to happen in less than 10 minutes if an AED is not easily accessible for defibrillation. In order to maintain artificial breathing and circulation until defibrillation can be done, CPR is used. When performed correctly, conventional manual CPR, which consists of both chest compressions and rescue breathing, can restore up to 33% of a person's normal cardiac output and oxygenation. Patients that require CPR are unresponsive, unconscious, and lack pulses. Finding the last time the patient was seen normally, or better still, the moment when pulses were lost, has a predictive benefit. The primary care physician, bystanders, family members, friends, and collateral history can all aid in etiologic evaluation. Physical examination findings are not specific; however cyanosis symptoms and decreased peripheral perfusion may point to the etiology of the arrest [3].

To activate the emergency medical services (EMS) response and start CPR as soon as possible, cardiac arrest must be recognized as soon as possible. Now that mobile phones are widely available, it is possible to contact 911 and stay by the victim. Call for assistance after making sure the area is secure. Start CPR simultaneously by conducting chest compressions (C), then opening the airway (A), and finally giving rescue breaths (B) (the CAB sequence as compared to the former ABC sequence). Chest compressions are started at a rate of 100 to 120 per minute with the hands placed on the lower side of the sternum. The rescuer conducts a head tilt/chin lift procedure to free the airway after 30 chest compressions (assuming there is no suspicion of a cervical spinal injury). If a cervical spine injury is thought to have occurred, the jaw-thrust manoeuvre is used to clear the airway without extending the head. Two rescue breaths are given: the rescuer takes a "normal" breath (not one that is deep or prolonged) and gives a second-long rescue breath that should be long enough to simply allow the chest to rise. Before starting again with chest compressions, the procedure is repeated for a second rescue breath [4].

An ideal barrier device, such a rescue mask, should be readily available to a healthcare worker who is willing to act as an outside rescuer. This isn't always the case, though. The alternative has been mouth-to-mouth rescue breaths, which many unskilled rescuers are reluctant to carry out, especially on an unidentified victim. Healthcare professionals must decide for themselves on this. For untrained lay rescuers, compression-only CPR has been acknowledged as appropriate. Compression-only CPR should be administered until EMS arrives if extenuating circumstances prevent a healthcare provider in the out-of-hospital setting from doing rescue breathing without a barrier device. Up to the arrival of an AED or extra assistance, the cycle of 30 chest compressions followed by two rescue breaths is continued. In the event that an AED is used, the pads should be placed on the patient's front and back with care taken to prevent any unnecessary pauses in chest compressions. Following attachment to the patient, AEDs will identify the patient's present cardiac rhythm and indicate whether the patient should get defibrillation. If the AED recommends a shock, stop applying pressure to the chest and keep away from the patient until defibrillation is complete. Repeat cycles of chest compressions and rescue breaths in the CAB sequence until more assistance arrives after defibrillation is finished, or if no shock is recommended.

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