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Commentary

Cardiopulmonary Resuscitation: Immediate Cardiac Arrest Survival Rate

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DESCRIPTION

Cardiac arrest occurs when the heart stops beating suddenly and unexpectedly. It is a medical emergency that, if not treated immediately, will result in sudden cardiac death within minutes. Until further treatment is available, cardiopulmonary resuscitation and possibly defibrillation are required. Cardiac arrest causes a sudden loss of consciousness, and breathing may be irregular or absent. While cardiac arrest can be caused by a heart attack or heart failure, the two are not the same, and non-cardiac causes account for 15% to 25% of cases. Before going into cardiac arrest, some people may experience chest pain, shortness of breath, nausea, an elevated heart rate, and a light-headed feeling. An underlying heart problem, such as coronary artery disease, which reduces the amount of oxygenated blood supplying the heart muscle, is the most common cause of cardiac arrest. This, in turn, damages the muscle's structure, which can alter its function. These changes can eventually lead to ventricular fibrillation, which is the most common precursor to cardiac arrest. Less common causes include significant blood loss, a lack of oxygen, extremely low potassium, electrical injury, heart failure, inherited heart arrhythmias, and strenuous physical activity. The inability to find a pulse is used to diagnose cardiac arrest. Cardiopulmonary resuscitation and defibrillation can restore spontaneous circulation after a cardiac arrest, but it is fatal without such intervention. In some cases, cardiac arrest is an expected outcome of life-threatening illnesses. If a shock able rhythm is present, defibrillation is used to treat the cardiac arrest.

There are two cardiopulmonary resuscitation protocols: basic life support and advanced cardiac life support. Targeted temperature management may improve outcomes among those whose pulses have been restored. Furthermore, the care team may take steps to protect the patient's brain from injury and preserve brain function. An implantable cardiac defibrillator may be considered in post-resuscitation care to reduce the risk of death from recurrence. Annually, approximately 535,000 cases occur in the United States. Of these, 326,000 occur outside of a hospital setting, while 209,000 occur within a hospital. Cardiac arrest becomes more common as people get older, and it affects men more than women. Around 8% of people survive out-of-hospital cardiac arrest with treatment from emergency medical services. However, fictional media in the United States has frequently portrayed the immediate survival rate of cardiac arrest as being excessively high. This may contribute to the general public's misinformed expectations of resuscitative efforts, with many studies showing that the expected survival rate of resuscitative efforts after cardiac arrest exceeds 40%–50%. These portrayals may also influence a patient's or a medical decision-end from emergency medical services. However, fictional media in the United States has frequently portrayed the immediate survival rate of cardiac arrest as being excessively high. This may contribute to the general public's misinformed expectations of resuscitative efforts, with many studies showing that the expected survival rate of resuscitative efforts after cardiac arrest exceeds 40%–50%. These portrayals may also influence a patient's or a medical decision-maker's desire to pursue aggressive measures. However, it has been demonstrated that when given accurate information about the limitations of resuscitation, many of the critically ill are less likely to choose it. Even if cardiopulmonary resuscitation is successful, complete recovery is not guaranteed, as many survivors suffer from a variety of disabilities, including partial paralysis, seizures, difficulty walking, speaking, or remembering, limited consciousness, or persistent vegetative state and brain death.

Symptoms and signs

In approximately 50% of cases, cardiac arrest is not preceded by any warning symptoms. Individuals who do experience symptoms are usually unrelated to the cardiac arrest. This can manifest as new or worsening symptoms:

- Chest pain, exhaustion, and blackouts
- Dizziness, shortness of breath, weakness, and vomiting

When a bystander suspects cardiac arrest due to signs of unconsciousness or abnormal breathing, he or she should try to feel a pulse for 10 seconds; if no pulse is felt, the victim is presumed to be in cardiac arrest. Because of the loss of cerebral perfusion, the person will lose consciousness quickly and may stop breathing. Ten to twenty percent of people who survive cardiac arrest report having had a near-death experience. This demonstrates that cognitive processes are still active during resuscitation.

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