

A Brief Note on Cardiac Arrest Syndrome

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ABOUT THE STUDY

Cardiac arrest occurs when the heart fails to pump blood effectively, resulting in a sudden decrease of blood flow throughout the body. It's a life-threatening medical emergency that necessitates immediate Cardiopulmonary Resuscitation (CPR) until further treatment is available. Cardiac arrest causes a quick loss of consciousness, with irregular or absent breathing. While cardiac arrest can be triggered by a heart attack or heart failure, the two are not the same, and non-cardiac causes account for 15% to 25% of occurrences. Before going into cardiac arrest, some people may experience chest pain, shortness of breath, or nausea. Prior to the incident, a raised heart rate and symptoms of light-headedness may develop.

An underlying heart condition, such as coronary artery disease, which reduces the volume of oxygenated blood supplying the heart muscle, is the most prevalent cause of cardiac arrest. As a result, the muscle's structure is harmed, potentially affecting its function. These changes can cause the patient's heart to go into Ventricular Fibrillation (V-fib), which is a condition that frequently precedes cardiac arrest. Major blood loss, a shortage of oxygen, very low potassium, heart failure, hereditary cardiac rhythms, and strenuous physical activity are among the less likely reasons. The inability to identify a pulse is a sign of cardiac arrest.

A cardiac arrest can be reversed with CPR and defibrillation, resulting in Return-of-Spontaneous-Circulation (ROSC), but it is almost always fatal without it. In some circumstances, cardiac arrest is a likely conclusion of major conditions that are expected to result in death. CPR and, if a shockable rhythm is present, defibrillation are used to treat cardiac arrest. Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) are the two CPR procedures that have been established (ACLS). Targeted temperature management may improve outcomes among people whose pulses have been reinstated. Furthermore, the medical team may take steps to protect the patient against brain injury and maintain brain function. An implantable cardiac defibrillator may be explored in post-resuscitation care

to lower the risk of death from recurrence.

About 8% of patients who have an out-of-hospital cardiac arrest and are treated by emergency medical services survive. However, fictional media in the United States has frequently depicted the immediate survival rate of cardiac arrest as being excessively high. This may contribute to the general public's erroneous expectations of resuscitative attempts, as numerous studies demonstrate that the expected survival rate of resuscitative efforts after cardiac arrest is greater than 40%-50%. These depictions may also influence a patient's or medical decision-maker's to take drastic measures. When provided proper knowledge, many people are less likely to opt for resuscitation when they are seriously ill.

Heart failure is a syndrome, a collection of signs and symptoms produced by the heart's inability to sustain the circulatory system as a pump, whether at rest or during exercise. It occurs when the heart fails to correctly fill with blood during diastole, resulting in a rise in intra cardiac pressures or a failure to eject it during systole, resulting in a reduction in cardiac output to the rest of the body. Fluid build-up in the veins and tissues can be caused by filling malfunction and elevated intra cardiac pressure. Congestion is defined as a build-up of fluids in the body that causes water retention and swelling (edema). Impaired ejection can result in insufficient blood perfusion of bodily tissues, resulting in ischemia.

Age, cigarette smoking, high blood pressure, high cholesterol, lack of physical activity, obesity, diabetes, and a family history of cardiac disease are among the risk factors for Sudden Cardiac Arrest (SCA), which are comparable to those for coronary artery disease. A previous incident of sudden cardiac arrest raises the chances of another one occurring in the future. According to a statistical analysis of many of these risk factors, approximately half of all cardiac arrests occur in the 10% of the population considered to be most at risk due to the cumulative harm of multiple risk factors, demonstrating that the cumulative risk of multiple comorbidities outweighs the sum of each risk individually.

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