

Cardiac Arrest Emergent Treatment

Cardiac Arrest is the abrupt loss of heart function, breathing, and consciousness. It is due to asystole, ventricular fibrillation, and cardiovascular collapse in extreme arterial hypotension.

A sudden cardiac arrest is different from a heart attack or myocardial infarction which occurs when blood flow to a part of the heart is blocked.

Causes of cardiac arrest

For a comprehensive list of causes of cardiac arrest have a look at the [H's and T's or cardiac arrest](#).

- Coronary artery disease.
- Heart attack.
- Enlarged heart (cardiomyopathy)
- [Valvular heart disease](#)
- Congenital heart disease
- long QT syndrome
- [Brugada's syndrome](#)

Symptoms

There is an absence of heart sounds and of carotid and femoral pulses. There may be associated with apnoea and cyanosis.

Sudden cardiac arrest signs and symptoms are immediate and drastic and include:

- Sudden collapse
- Loss of consciousness

Sometimes other signs and symptoms occur before sudden cardiac arrest. These might include:

- Chest discomfort
- Shortness of breath
- Weakness
- Palpitations

Cessation of circulation requires immediate treatment.

Optimal chances of survival are achieved with the initiation of cardiopulmonary resuscitation within 4 minutes of the arrest, and when advanced cardiac life support including intubation, intravenous medications, and defibrillation is initiated within 8 minutes.

Management

- Airway:
- Clear airway immediately.
- Aspirate vomitus and secretions or remove with fingers or
- Ventilation: Inflate lungs with air or oxygen by:

Mouth-to-mouth **OR**

Mouth-to-nose insufflation **OR**

By bag and mask devices (ensure thoracoabdominal motion).

- Circulation:
- **Cardiac massage:** Carry out external cardiac massage (compressions) by applying appropriate pressure over the sternum. One breath should be interposed between every 4 to 5 cardiac compressions.
- **Defibrillation:** Use standard defibrillators delivering 200–360 J and biphasic defibrillators delivering 150–200 J.
- It will give you step-by-step voice instructions.
- You need to continue with chest compressions while the defibrillator is on charging. Then deliver one shock if advised by the device and immediately resume cardiopulmonary resuscitation, starting with chest compressions, or give chest compressions only, for about two minutes.
- Using the defibrillator, check the person's heart rhythm. If necessary, the defibrillator will give another shock. Repeat this defibrillation cycle until the patient recovers consciousness.

Drugs

- Intravenous adrenaline 1mg bolus repeated every 3 to 5 minutes, **OR**
- Vasopressin 40 IU by intravenous push, or amiodarone 300mg in 20–30ml normal saline.
- Thorough investigation and treatment of the underlying cause should be undertaken.

Admit

- Defibrillation:
- Standard defibrillators delivering 200–360 J
- Biphasic defibrillators delivering 150–200 J
- Intravenous epinephrine 1mg push, repeated every 3 to 5 minutes, **OR** vasopressin 40 IU by intravenous push, **OR** amiodarone 300mg in 20–30ml normal saline.

Thorough investigation and treatment of the underlying cause should be undertaken