

Sudden Cardiac Arrest and Heart Attack Management

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Received: September 16, 2019; **Published:** October 18, 2019

Abstract

Sudden cardiac arrest is a condition in which the heart stops beating suddenly. So, the blood stops flowing to vital organs especially the brain.

Sudden cardiac arrest usually causes death if it's not treated within minutes [1].

Objectives: To know what is the risk factors for cardiac arrest, Cardiac arrest signs, how to response, and treatment and rehabilitation.

Keywords: *Sudden Cardiac Arrest; Heart Attack*

Risk factors for cardiac arrest?[2]

Certain heart conditions and health factors can increase risk of cardiac arrest like Coronary Heart Disease, Irregular Heart Valves, Congenital Heart Disease and Electrical Impulse Problems.

Other risk factors for cardiac arrest include: Smoking, sedentary lifestyle, high blood pressure, obesity family history of heart disease, history of a previous heart attack age over 45 for men, or over 55 for women, male gender substance abuse, low potassium or magnesium

Cardiac arrest signs [3]: We have to suspect that someone is experiencing cardiac arrest if there is:

- **Sudden loss of responsiveness:** The person doesn't respond, even if you tap him or her hard on the shoulders or ask loudly if he or she is OK. The person doesn't have any reaction.
- **No normal breathing:** Stop breathing or gasping for air only.

First response [3]

After sudden cardiac arrest, more heart tissue will die every minute. So, to prevent heart damage we have to restoring blood flow quickly.

Think that the person may be suffering cardiac arrest if he/she has sudden loss of responsiveness, here's what to do:

- **Call for help:** Tell someone nearby to call your emergency response number. Then ask to bring you an AED (automated external defibrillator),
- **Check breathing:** If the breathing isn't normal (stopping or gasping), start CPR.
- **Start CPR:** Push fast and hard the rate should be from 100 to 120 pushes a minute in the center of the chest, and push down at least 4 - 5 cm, after each push don't forget to allow the chest to come back up to its normal position.

- **Use an AED:** Start using the automated external defibrillator as soon as it arrives. Turn it on then follow the instructions.
- **Keep pushing:** Don't stop the cycles of CPR until the person starts to respond (move or breath).

Treatment [2,4,5]

Medical and surgical treatment

Medical: Medications given to treat a heart attack might include:

- **Aspirin:** Aspirin is anticoagulant reduces blood clotting and help to maintain blood flow.
- **Thrombolytics:** Help dissolve a clot in the vessels, if a thrombolytic drug given earlier after a heart attack, the chance that the patient will survive and has less heart damage will be more.
- **Antiplatelet agents:** Act on platelets so keep existing clots from getting larger and prevent new clots.
- **Other blood-thinning medications:** Such as heparin, Heparin is given intravenously subcutaneous. make blood less likely to form clots.
- **Pain killers:** Such as morphine.
- **Nitroglycerin:** Vasodilator improve blood flow to the heart.
- **Beta blockers:** Decrease heart rate and blood pressure, relax heart muscles and reduce heart muscle damage.
- **ACE inhibitors:** Reduce blood pressure and decrease the load on the heart.
- **Statins:** Reduce blood cholesterol.

Surgical and other procedures: The patient might has one of these procedures with the medications for treatment:

- **By cath: Coronary angioplasty and stenting:** A long, thin tube (catheter) will be inserted through an artery in the groin or wrist to reach the blocked coronary artery.
- **By surgery: Coronary arteries bypass surgery:** Emergency bypass surgery is required sometimes, If possible, at the time of the heart attack or after the heart has had time to recover from the heart attack (3 - 7 days).

This surgery to replace a blocked or narrowed coronary artery, by vein or artery from other part of the body like legs, chest...

Once blood flow to the heart is restored and the condition is stable, the patient is likely to remain in the hospital for several days.

Cardiac rehabilitation

Most hospitals offer programs that might start while the patient in the hospital and continue for weeks to a couple of months after the patient return home. Cardiac rehabilitation focus on- lifestyle, medications, and how gradually can return to normal activities.

Cardiac rehab after a heart attack decreases the recurrence and complications from the heart attack.

Prevention [6]

Avoid sudden cardiac arrest and reduce risk factors by regular general checkup, sport and healthy lifestyle.

Conclusion

Sudden cardiac arrest is a very serious condition, need quick and suitable response. We can avoid sudden cardiac arrest and reduce risk factors by regular general checkup, sport and healthy lifestyle.

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Volume 6 Issue 11 November 2019

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