

Post electric shock cardiac arrest, does it differ?

Sudden cardiac arrest (CA) is a medical emergency that immediately causes circulatory failure with loss of consciousness; absence of breathing; low blood pressure with no pulses; and no heart sounds.

The most common causes of CA are electrical problems in the heart especially ventricular fibrillation, due to loss of coordinated ventricular contractions with loss of effective output of blood, resulting in circulatory failure.

“Electrical shock (ES) is a leading cause to CA, it is the injury caused by contact with electric current passing through the human body causing undesirable effects ranging from simple burns to death.”

Out-of-hospital CA is a leading cause of premature death throughout the world, survivals from which are often less than 5%. “The ideal duration of cardiac resuscitation is unknown, and prolonged cardiopulmonary resuscitation (CPR) is usually associated with poor neurologic outcomes and reduced long-term survival. Up-to-date there is no consensus statement and traditionally efforts are usually terminated after 15-30 minutes.” Case reports of complete neurologic recovery after prolonged CA are few however, this is not the same for survivals after exposure to ES especially for young age. Our case is for 24-years-old male who was brought by his colleagues to our hospital 10-minutes after being hit with ES during his work. He was transferred to resuscitation room cyanosed, with dilated irreactive pupils and no response, breath, or pulse, so code blue was activated. CPR was started and continued for 55 minutes. So the heart retain its normal function after 65 minutes (10-outhospital and 55-inhospital). He was transferred to the intensive-care-unit and arti?cial ventilation was started. The next 24-hours showed fair hemodynamics. Gradual weaning from ventilation started and then ?nally extubated after 4-days with normal investigations. He was oriented and obeying orders but with agitation, and muscle weakness. Computed tomography of the brain was normal. Finally, he was discharged after 5-more-days with normal muscle power and absence of agitation. In conclusion, the human body is a good conductor of electricity. Although some electrical burns look minor, there still may be serious internal damage, especially to the heart, muscles, or brain. “The danger depends on the current type, voltage, pathway through the body, the person's overall health and how quickly the person is treated.” “The prevalence of arrhythmias after electrical injury varies between 10% to 36%.” Because of differences in electrical resistance, and the current travels along nerves and blood vessels, making the heart more susceptible to injury. Ventricular ?brillation is the commonest cause of death in ES. Survival depends on effective CPR and early de?brillation. CPR is a highly effective technique when applied by a well-trained person and provides adequate short-term life support. This patient had CA due to ES, and although cardiac compressions were not started by his colleagues, early chest compressions by the emergency department team played a vital role in his survival. Review of the literature showed that aggressive prolonged CPR should be considered in young patients (particularly those with no comorbid conditions). Young patients may survive

prolonged CPR with no or minor sequelae. From this case-report, we can conclude that CPR duration should be established on a case-by-case basis, taking into account many determinants of survival. No single factor is predictive of outcome, so the clinician must integrate all the circumstances of the arrest and the patient's premorbid condition when making the decision to terminate resuscitative efforts. CA after ES deserves prolonged high quality CPR, especially in young age. Early effective chest compression and close adherence to advanced cardiac life support protocols played a vital role not only in survival of the patient but also without any sequelae.

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[Survival without sequelae after prolonged cardiopulmonary resuscitation after electric shock.](#)

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