

# Refractory cardiac arrest patients brought to hospital with ongoing CPR can recover

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Refractory cardiac arrest patients brought to hospital with ongoing cardiopulmonary resuscitation (CPR) can survive with good brain function, according to research in nearly 4 000 patients presented at ESC Congress today by Dr Helle Sørensen, a cardiologist at Copenhagen University Hospital Rigshospitalet in Denmark.

"The faster a patient with cardiac arrest is resuscitated and brought back to life the better," said Dr Sørensen. "The prognosis for patients with refractory cardiac arrest with long resuscitation attempts has previously been shown to be poor. The use of extracorporeal life systems, which have an artificial pump to help the blood circulate the body, are currently being investigated to improve survival in these patients."

She added: "However, we found in our study that patients with refractory cardiac arrest treated without the support of extracorporeal life systems do not have such a dismal prognosis as one might think, which encourages longer resuscitation attempts."

Nearly 60 out of 100 000 people suffer cardiac arrest outside the hospital each year and only one in ten survive. Survival and outcome greatly depend on immediate response with early call for help, bystander resuscitation attempt and fast use of defibrillators. In patients with refractory cardiac arrest, pre-hospital physicians in the emergency medical services may terminate CPR outside the hospital or continue CPR while bringing patients to the hospital.

The current study investigated the survival and, just as importantly, the functional status in patients with refractory cardiac arrest brought to the hospital with ongoing CPR and treated conservatively without the support of extracorporeal life systems. The study included 3 992 patients who had a cardiac arrest outside hospital in a large urban area and were treated by physician-based [emergency medical services](#) between 2002 and 2011. Of these, 1 285 (32%) were successfully resuscitated outside hospital and 108 (3%) were brought to the hospital with refractory cardiac arrest.

Approximately half of the patients brought to the hospital with ongoing CPR were successfully resuscitated and were admitted to a hospital ward. In the other half the resuscitation attempt was terminated in the emergency department after more than one hour of CPR on average. Of the successfully resuscitated patients with refractory cardiac arrest about a third were suffering from cardiac arrest due to acute myocardial infarction.

The rate of survival in patients with refractory cardiac arrest who received ongoing CPR was 20% compared to 42% in those who were resuscitated before arrival at the hospital (p

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