

**Clinical outcome and survival to hospital discharge after  
cardiopulmonary resuscitation in medical intensive care units**

**Thesis submitted for partial fulfillment of master degree in Critical  
Care Medicine**

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**2018**

## Abstract

**Background:** Intensive care unit (ICU) patients in comparison with general patients have a higher severity of illness and more susceptible to cardiac arrests due to presence of multiple comorbidities and disease severity, despite the fact that the rate of return of spontaneous circulation (ROSC) may be as high as 100% hospital discharge rate still unsatisfactory.

**Aim of work:** Evaluation the clinical status and cardiopulmonary resuscitation (CPR) procedures performance, and identification of post-arrest patients associated with short and long term outcome.

**Methods:** Data collected prospectively in patients who were witnessed in cardiopulmonary arrests (CPAs) inside ICU and underwent CPR at Cairo university teaching hospitals and Nasr city insurance hospital in the period from Jan.2013 to Dec.2014. Clinical data were recorded and surviving patients were clinically followed daily until hospital discharge.

**Results:** The study included 110 patients: 37% females and 63% males. There were 24% of patients under 50 years and 76% above 50 years, Out of whom 55% had ROSC and 20% survived to hospital discharge, While 45% failed CPR and 80% long term total deaths, Out of survivors to hospital discharge 59% were functionally dependent on others and 41% functionally independent. Cerebrovascular illness were predictive of higher ROSC [p0.05], but lower survival to discharge [p0.02]. Respiratory illness were predictive of lower survival to discharge [p0.02]. Shock predictive of higher ROSC associated with immediate outcome [p0.008], but lower survival to discharge [p<0.001]. Mechanical ventilation before arrest predictive of lower survival to discharge [p0.018]. Lower

MPM0-III (<10) were predictive of higher ROSC [**p0.015**], and survival to discharge [**p0.018**], also lower SOFA score (<9) were predictive of higher survival to discharge [**p<0.01**]. Initial rhythm of asystole were predictive of lower survival to discharge [**p0.01**]. Time to start CPR (<1min.) were predictive of higher ROSC [**p0.001**]. Shorter duration of resuscitation (<10min.) were predictive of higher ROSC [**p0.03**]. Multiple CPR cycles (>2 cycles) [**p<0.001**], and multiple DC shocks (>3 shocks) [**p0.02**] were predictive of higher ROSC.

**Conclusion:** Our study may aid physicians in understanding prognosis of patients receive CPR in the ICU and may aid to improve ICU care and possibly avoiding of future worst outcome.

**Key words:** survival to hospital discharge after cardiopulmonary resuscitation