

**Investigation of Outcome and Related Factors of Cardio-Pulmonary Resuscitation After In-Hospital Cardiac Arrest in Inpatients**

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**Purpose:**

In-hospital cardiac arrest is a common and high risk patient safety issue in medical institutions. Previous literature has revealed that about 60%-70% of inpatients who suffered a cardiac arrest experienced clinical symptoms and deterioration of vital signs 6-8 hours prior to their arrest but only about 25% are able to be detected by doctors in advance. In fact, through emergency treatment, not only can resuscitation be reduced by 65% but death rates can also be reduced by 26%. In clinical practice, ways to detect signs of possible cardiac arrest early on and predict the outcome of cardio-pulmonary resuscitation (CPR) is an important issue that should not be overlooked. Therefore, the purpose of this study is to investigate the factors influencing the outcome of CPR after in-hospital cardiac arrest in inpatients at this hospital, to serve as a reference for establishing intervention measures in the future, to reduce the incidence of unexpected resuscitations, and to provide prognostic factors for the prognosis of resuscitation to avoid unnecessary first-aid measures which can result in a waste of medical resources, etc., thereby enhancing the quality of medical care.

**Methods:**

This study used a retrospective study design. A total of 361 inpatients who suffered from in-hospital cardiac arrest were recruited as subjects from January 1, 2011~December 31, 2013. Using a structured in-hospital cardiac arrest resuscitation record format (Utstein style), data was collected for statistical analysis by reviewing medical records, including patients' basic information, characteristics of the emergency events, reasons for cardiac arrest and outcomes of CPR.

**Results:**

The incidence of in-hospital cardiac arrest in inpatients was 0.37%. After CPR, 21% could return to spontaneous circulation, the duration of return of spontaneous circulation (ROSC) was more than 24 hours for 16.3% of the patients, and 9.7% survived until discharge. Further analysis found that factors affecting ROSC included female sex, surgery during hospitalization, history of diabetes, patients with an initial rhythm of ventricular fibrillation or pulseless ventricular tachycardia, cardiac arrest due to arrhythmia, and without respiratory failure. The rate of ROSC was high among these patients and results showed statistical differences.

**Conclusion:**

This study mainly focuses on inpatients, analyzing the incidence of in-hospital cardiac arrest, to understand the outcomes of CPR in hospitalized patients and to further investigate the related influencing factors. It is recommended that future prospective studies be conducted to provide references for clinical intervention measures and to evaluate whether this hospital's early warning system can reduce the incidence of unexpected resuscitation and prognostic factors for prognosis.

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**Title:**

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## Keywords:

cardio-pulmonary resuscitation, CPR, in-hospital cardiac arrest, IHCA and return of spontaneous circulation, ROSC

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## Abstract Summary:

This study mainly focuses on inpatients, analyzing the incidence of in-hospital cardiac arrest, to understand the outcomes of CPR in hospitalized patients and to further investigate the related influencing factors.

## Content Outline:

### I. Introduction

In-hospital cardiac arrest is a common and high risk patient safety issue in medical institutions. The purpose of this study is to investigate the factors influencing the outcome of CPR after in-hospital cardiac arrest in inpatients at this hospital, to serve as a reference for establishing intervention measures in the future.

### II. Body

1. Research design : retrospective study design
2. Research object : A total of 361 inpatients who suffered from in-hospital cardiac arrest were recruited as subjects from January 1, 2011~December 31, 2013.
3. Exclusion criteria

a. Sign 「Do-Not-Resuscitate」 consent patients.

b. Out of hospital cardiac arrest.

c. age < 20 years old.

4. Results:

a. The incidence of in-hospital cardiac arrest in inpatients was 0.37%.

b. After CPR, 21% could return to spontaneous circulation, the duration of return of spontaneous circulation (ROSC) was more than 24 hours for 16.3% of the patients, and 9.7% survived until discharge.

c. Further analysis found that factors affecting ROSC included female sex, surgery during hospitalization, history of diabetes, patients with an initial rhythm of ventricular fibrillation or pulse-less ventricular tachycardia, cardiac arrest due to arrhythmia, and without respiratory failure. The rate of ROSC was high among these patients and results showed statistical differences.

III. Conclusion

Understands the outcomes of CPR in hospitalized patients and to further investigate the related influencing factors. It is recommended that future prospective studies be conducted to provide references for clinical intervention measures and to evaluate whether this hospital's early warning system can reduce the incidence of unexpected resuscitation and prognostic factors for prognosis.

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