Neurological And Cardiovascular Outcomes After Cardiac Arrest At Six Regional Interventional Cardiology Centers In The United States 2007-2011

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# Neurological and Cardiovascular Outcomes After Cardiac Arrest At Six Regional Interventional Cardiology Centers In The United States 2007-2011

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## Introduction

An aggressive approach to post-resuscitation care has been adopted in many tertiary care centers, and we hypothesized that outcomes have improved accordingly.

We characterized neurological and cardiovascular outcomes of cardiac arrest (CA) survivors admitted between 2007-2011 at six regional interventional cardiology (PCI) centers in the United States.

## Methods

- **Six US Interventional Cardiology centers** comprising the INTCAR-CARDIOLOGY research group retrospectively and prospectively evaluated 754 sequential cardiac arrest survivors admitted between 2007-2011.
- Demographics, clinical features, adverse events, echocardiographic findings, and long term neurological outcomes were de-identified and uploaded into a secure, web-based registry (INTCAR) [1] after local IRB approval.
- Echocardiography at admission and prior to discharge were compared.
- A multivariate logistic regression model was developed using SAS® to evaluate the relative associations of demographic and clinical features, treatments, and adverse events with long-term neurological outcomes.

## Results

### Demographics

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<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
<th>P Value</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
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<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
<td></td>
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<tr>
<td>Diabetes</td>
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</table>

### Clinical Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
<th>P Value</th>
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</thead>
<tbody>
<tr>
<td>VT/VF</td>
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<td></td>
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<tr>
<td>Myocardial Infarction</td>
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### Cardiac Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Odds Ratio</th>
<th>P Value</th>
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<tbody>
<tr>
<td>CPC 1-2</td>
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### Neurological Outcomes

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<tr>
<th>Outcome</th>
<th>Odds Ratio</th>
<th>P Value</th>
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<tr>
<td>CPC 1-2</td>
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## Discussion

Outcomes of cardiac arrest survivors treated at US PCI centers with therapeutic hypothermia were improved from historical reports, and similar to clinical trial data, despite a sicker case-mix [4].

- **Patients with VT/VF did better than patients with PEA/asystole at every “down-time”** in a multivariable model, better outcomes were independently associated with shorter arrest time, shorter delay to initiation of cooling, and urgent PCI.
- **Insulin dependent diabetes and DNR orders were associated with worse outcomes.** Despite improved outcomes, death after cardiac arrest remains overwhelmingly attributed to neurological futility.

### References


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