Impact on mortality of a cardiogenic shock programme in a non-transplant hospital

J. Pascual1, J. Aboal1, P. Loma-Osorio1, M. Nunez1, E. Badosa1, C. Martin1, M. Ferrero1, S. Moral1, E. Ballesteros1, J. Pedraza1, R. Brugada1

1University Hospital de Girona Dr. Josep Trueta, Girona, Spain

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Introduction: Cardiogenic shock is associated with high in-hospital morbidity and mortality. Every hospital should take all possible measures to reduce it.

Methods: Quasi-experimental study in patients with cardiogenic shock comparing two periods: A period of a cardiogenic shock programme including the establishment of a multidisciplinary team (shock team), early alert to the transplant hospital, initiation of a VA ECMO programme and extension of continuous care by acute cardiovascular care specialist, and a previous period without the mentioned measures. The primary objective was whether there were differences in in-hospital mortality and mortality at follow-up. Predictors of in-hospital mortality were examined as a secondary objective.

Results: A total of 139 patients were enrolled, including 69 in the previous period and 70 in the cardiogenic shock programme period. There was a significant reduction in-hospital mortality (55.1% vs. 37.1%, p=0.03) and in the follow-up (62.7% vs. 44.6%, p=0.03) in the second period. Diabetes mellitus, ejection fraction, out-of-hospital cardiac arrest and implementation of the cardiogenic shock programme were independent predictors of in-hospital mortality.

Conclusions: Implementing a comprehensive cardiogenic shock programme in a non-transplanting hospital improved in-hospital and follow-up mortality of patients in cardiogenic shock.

PREVIOUS PERIOD

Cardiogenic Shock Programme Period

Acute Cardiac Care Specialist Working Hours

Shock Team

Intraaortic Balloon Pump

Impella CP

Query and Transfer

**NOT** registered

Transplant Center

Acute Cardiac Care Specialist

24h/7Days

Shock Team

Emergency Early Warning

ECMO VA

Query and Transfer

Registered Early Warning

Transplant Center
The graph shows the probability of survival over time for two periods: Previous period and CS programme period. The survival curves are indicated by different colors: red for the Previous period and cyan for the CS programme period. The Log-rank test statistic is 0.048.

### Previous period
- At risk: 67
- Events: 1

### CS programme period
- At risk: 65
- Events: 2

The table below provides the number of patients at risk and the number of events for each period:

<table>
<thead>
<tr>
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<th>Previous period</th>
<th>CS programme period</th>
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<tbody>
<tr>
<td>At risk</td>
<td>67</td>
<td>65</td>
</tr>
<tr>
<td>Events</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

The number of events and at risk for the Previous period are as follows:
- At risk: 23, Events: 1
- At risk: 19, Events: 40
- At risk: 7, Events: 41
- At risk: 1, Events: 42

The number of events and at risk for the CS programme period are as follows:
- At risk: 38, Events: 27
- At risk: 20, Events: 28
- At risk: 5, Events: 29

Log-rank test statistic: 0.048