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Drug Abuse Paradox Seen in Out-of-Hospital Cardiac Arrest Data

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Background

Cardiac arrest is the largest cause of natural death in the U.S. Illicit drug use is often considered in defining cardiac arrest risk. However, limited research has been undertaken to examine the baseline characteristics of drug abusers with out-of-hospital cardiac arrest (OHCA). This study aims to address this gap.

Objectives

❖ Compare survival to discharge rates for drug abusers and non-drug abusers
❖ Evaluate baseline characteristics such as age and past medical history
❖ Examine cardiopulmonary resuscitation variables such as CPR duration

Methods

1. Retrospective review of database for OHCA patients between January 2012 and May 2015
   • Exclusion criteria: age <18 or >70 years and traumatic origin of the arrest
2. Data evaluation for a total of 200 non-drug abusers and 50 drug abusers
   • Examination of survival rates for drug abusers and non-drug abusers
3. Analysis of major risk factors related to death
   • Analysis of cardiopulmonary resuscitation variables
   • Descriptive statistics analysis

Results

Baseline Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Drug abusers (n=50)</th>
<th>Non-drug abusers (n=200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>42 years</td>
<td>58 years</td>
</tr>
<tr>
<td>Prior medical history</td>
<td>29%</td>
<td>49%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>40%</td>
<td>75%</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>21%</td>
<td>38%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>21%</td>
<td>41%</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td>15%</td>
<td>39%</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>10%</td>
<td>21%</td>
</tr>
<tr>
<td>COPD</td>
<td>8%</td>
<td>15%</td>
</tr>
<tr>
<td>Stroke</td>
<td>4%</td>
<td>12%</td>
</tr>
<tr>
<td>Prior cardiac surgeries</td>
<td>10%</td>
<td>30%</td>
</tr>
<tr>
<td>Obesity</td>
<td>47%</td>
<td>61%</td>
</tr>
<tr>
<td>Survival to discharge rate</td>
<td>12%</td>
<td>11%</td>
</tr>
</tbody>
</table>

CPR Duration

Drug abusers

- <15 min: 36%
- 15-45 min: 52%
- >45 min: 12%

Non-drug abusers

- <15 min: 46%
- 15-45 min: 48%
- >45 min: 6%

Discussion

❖ Although more drug abusers presented with unwitnessed cardiac arrest and PEA/asystole initial rhythms, their survival to discharge rate was comparable to that of non-drug abusers
❖ The difference in outcomes between the two sets of patients was mainly due to a shorter CPR duration, a younger age and lower rates of prior cardiac history

Conclusion

The study has shown that, despite some possible selection bias, drug abusers have similar outcomes for OHCA as non-drug abusers. Introducing more aggressive treatments such as extracorporeal membrane oxygenation (ECMO) in the Lehigh Valley Health Network for patients with drug abuse history is a promising way to increase the overall survival to discharge rates for OHCA.

REFERENCES


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