IMAD 2014
Local statistical Results
Introduction about temperature management

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Data base

- Retrospective analysis
- From 2007 to 2014
- Circulatory arrest
- Operative data
- 118 patients
# Local activity

<table>
<thead>
<tr>
<th>Year</th>
<th>All surgery procedures (100%)</th>
<th>Surgery on thoracic aorta (%)</th>
<th>Aortic surgery with Hypothermia (%)</th>
<th>Circulatory arrest (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>616</td>
<td>46 (7.47%)</td>
<td>21 (3.41%)</td>
<td>11 (1.79%)</td>
</tr>
<tr>
<td>2008</td>
<td>583</td>
<td>59 (10.1%)</td>
<td>32 (5.49%)</td>
<td>20 (3.43%)</td>
</tr>
<tr>
<td>2009</td>
<td>616</td>
<td>41 (6.66%)</td>
<td>21 (3.41%)</td>
<td>16 (2.60%)</td>
</tr>
<tr>
<td>2010</td>
<td>587</td>
<td>50 (8.52%)</td>
<td>27 (4.60%)</td>
<td>15 (2.56%)</td>
</tr>
<tr>
<td>2011</td>
<td>590</td>
<td>46 (7.80%)</td>
<td>22 (3.73%)</td>
<td>11 (1.86%)</td>
</tr>
<tr>
<td>2012</td>
<td>586</td>
<td>59 (10.1%)</td>
<td>31 (5.29%)</td>
<td>16 (2.73%)</td>
</tr>
<tr>
<td>2013</td>
<td>620</td>
<td>52 (8.39%)</td>
<td>27 (4.35%)</td>
<td>19 (3.06%)</td>
</tr>
<tr>
<td>2014</td>
<td>340</td>
<td>37 (10.9%)</td>
<td>14 (4.12%)</td>
<td>8 (2.35%)</td>
</tr>
</tbody>
</table>

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Neurological complications

- High proportion of emergency
- Due to circulatory arrest?
- Due to dissection?
- Neurological standardized assessment?
Correlation between circulatory arrest time and minimal rectal temperature with or without selective cerebral perfusion

\[ r = -0.01 \]

\[ p = 0.89 \]
Correlation between cross clamp time and minimal rectal temperature

\[ r = -0.06 \]
\[ p = 0.52 \]
Minimal rectal temperature according to selective cerebral perfusion approach

Circulatory arrest time according to selective cerebral perfusion approach
Correlation between reperfusion time and minimal rectal temperature

\[ r = -0.25 \]

\[ p < 0.01 \]
Correlation between Cardiopulmonary bypass time and minimal rectal temperature

$$r = -0.3349$$

$$p < 0.001$$
Evolution of minimal rectal temperature during circulatory arrest over the eight last years

Year
2007 2008 2009 2010 2011 2012 2013 2014
Minimal rectal temperature (°C)
Evolution of circulatory arrest time during the eight last years

\[ p = 0.16 \]

Median

\[ P25-P75 \]

Min-Max

<table>
<thead>
<tr>
<th>Year</th>
<th>Circulatory arrest time (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>30</td>
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<tr>
<td>2008</td>
<td>30</td>
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<tr>
<td>2013</td>
<td>30</td>
</tr>
<tr>
<td>2014</td>
<td>30</td>
</tr>
</tbody>
</table>
Conclusions

- Hypothermia concerns 50% of surgery on ascending aorta
- Circulatory arrest for 30.3% of cases
- No relation between arrest time, selective perfusion and temperature
- Temperature influence pump time

How to select appropriate temperature?

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Thank you for your attention

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