IMAD 2014
Local statistical Results
Introduction about ventilation

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Data base

- Operative and postoperative data from 2007 to April 2012
Multivariate analysis

- Age, gender, BSA,
- Emergency, redo, COPD
- Thoracoabdominal aortic surgery
- Deep hypothermia circulatory arrest,
- Nadir haematocrit
- Priming volume
- Platelets, Fresh Frozen Plasma, Red Blood Cells transfusion
- Cell saving
- Need of Dobutamine
Univariate analysis

- Signifícate association
  - Higher cross clamp time
  - Use of dobutamine and noradrenaline

- No association
  - Age
  - Surgery on thoracoabdominal aorta
  - COPD
Univariate analysis

- Trend
  - Higher pump time
  - Lower nadir ACT
  - Greater cell-saving
  - Higher proportion of redo
  - Higher proportion of transfusion
  - Association with CRRT
  - Lower first ICU PaO2/FiO2
  - Higher mechanical ventilation time

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# Univariate analysis

## Respiratory complication

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>Median</td>
<td>P25-P75</td>
</tr>
<tr>
<td>1st ICU PaO$_2$/FiO$_2$</td>
<td>286</td>
<td>220-382</td>
</tr>
<tr>
<td>Ventilation time (h)</td>
<td>9</td>
<td>6-16,5</td>
</tr>
<tr>
<td>Pump time (')</td>
<td>117</td>
<td>90-150</td>
</tr>
<tr>
<td>Cross clamp time (')</td>
<td>80</td>
<td>59-102</td>
</tr>
<tr>
<td>Nadir ACT (sec)</td>
<td>405</td>
<td>387-429</td>
</tr>
<tr>
<td>Cell saving (ml)</td>
<td>940</td>
<td>700-1250</td>
</tr>
<tr>
<td>Redo</td>
<td>17 (7,02%)</td>
<td>3 (20,0%)</td>
</tr>
<tr>
<td>Dobutamine</td>
<td>82 (36,1%)</td>
<td>10 (66,7%)</td>
</tr>
<tr>
<td>Noradrenaline</td>
<td>68 (29,6%)</td>
<td>9 (60,0%)</td>
</tr>
<tr>
<td>CRRT</td>
<td>15 (6,79%)</td>
<td>3 (20,0%)</td>
</tr>
<tr>
<td>RBC</td>
<td>109 (45,0%)</td>
<td>10 (66,7%)</td>
</tr>
<tr>
<td>FFP</td>
<td>123 (50,8%)</td>
<td>11 (73,3%)</td>
</tr>
<tr>
<td>PLT</td>
<td>107 (44,2%)</td>
<td>10 (66,7%)</td>
</tr>
</tbody>
</table>

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HES Withdrawal
## Respiratory complications

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>median</td>
<td>P25-P75</td>
<td>Median</td>
</tr>
<tr>
<td>Ventilation time (h)</td>
<td>8</td>
<td>6-13</td>
<td>10</td>
</tr>
<tr>
<td>PaO\textsubscript{2}/FiO\textsubscript{2}</td>
<td>285</td>
<td>212-382</td>
<td>263</td>
</tr>
</tbody>
</table>

## Colloid versus Crystalloid Priming/ perfusion

<table>
<thead>
<tr>
<th></th>
<th>HES (n=257)</th>
<th>Plasmalyte A (n=53)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>median</td>
<td>P25-P75</td>
<td>Median</td>
</tr>
<tr>
<td>Ventilation time (h)</td>
<td>9</td>
<td>6-17</td>
<td>6</td>
</tr>
<tr>
<td>PaO\textsubscript{2}/FiO\textsubscript{2}</td>
<td>281</td>
<td>216-374</td>
<td>298</td>
</tr>
<tr>
<td>Respiratory complications</td>
<td>15 (5,84%)</td>
<td>9 (17,0%)</td>
<td>0,006</td>
</tr>
</tbody>
</table>
Mechanical ventilation duration

No variation

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Mechanical ventilation duration

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Mechanical ventilation duration

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ICU stay

Length of ICU hospitalization depending on priming solutions and respiratory complication

Alive  Dead

Crystalloid without complication
Crystalloid with complication
Colloid without complication
Colloid with complication

Days
Proportion of hospitalized patients in ICU

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p<0.00001
Hospital stay

Length of hospitalization depending on priming solutions and respiratory complication

\[ p = 0.001 \]

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Conclusions

- Take care of patients:
  - Longer cross clamp time
  - Need of catecholamines
  - Lower first ICU PaO\textsubscript{2}/FiO\textsubscript{2}

- Use crystalloid priming
  - Reduce mechanical ventilation time
  - Reduce length of stay in ICU and in the hospital
  - Could lead to more respiratory complications (without effect on global length of stay)
THANKS FOR YOUR ATTENTION

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University hospital of Liege