Background and importance

Hemodynamically significant patent ductus arteriosus (hsPDA) is a common cause of morbidity and mortality in preterm infants (PI), whose treatment of choice is ibuprofen. Paracetamol has been proposed as an alternative, but with insufficient clinical evidence.

Aim and objectives

Efficacy and safety of treatment with intravenous (IV) ibuprofen

Non inferiority?

Efficacy and safety of treatment with IV paracetamol

Closure of hsPDA

Interim analysis of results to continue or stop study recruitment

Materials and methods

Efficacy and safety of IV Paracetamol

15 mg/kg/6 h

24 h

15 mg/kg/6 h

48 h

15 mg/kg/6 h

If ductus Size >1 mm

3-day course of same treatment

If ductus Size >1 mm

Ibuprofen and/or surgical closure were evaluated

Efficacy and safety of IV Ibuprofen

10 mg/kg

24 h

5 mg/kg

48 h

Primary endpoint: ductus closure after the first treatment course.

Results

91 patients recruited

Treatment A: N=44

Treatment B: N=47

Approximately 1/3 of the scheduled recruitment

<table>
<thead>
<tr>
<th>Adverse events</th>
<th>Treatment A N (%)</th>
<th>Treatment B N (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renal insufficiency</td>
<td>6 (13,64)</td>
<td>4 (8,51)</td>
<td>0,435</td>
</tr>
<tr>
<td>Retinopathy of prematurity</td>
<td>8 (19,05)*</td>
<td>15 (32,61)***</td>
<td>0,15</td>
</tr>
<tr>
<td>Bronchopulmonary dysplasia</td>
<td>21 (51,20)**</td>
<td>25 (54,35)***</td>
<td>0,77</td>
</tr>
<tr>
<td>Necrotizing enterocolitis</td>
<td>7 (15,91)</td>
<td>5 (10,64)</td>
<td>0,458</td>
</tr>
<tr>
<td>Spontaneous intestinal perforation</td>
<td>3 (6,82)</td>
<td>3 (6,38)</td>
<td>0,629</td>
</tr>
<tr>
<td>Intraventricular hemorrhage</td>
<td>15 (34,09)</td>
<td>11 (23,4)</td>
<td>0,259</td>
</tr>
<tr>
<td>Death</td>
<td>8 (19,05)</td>
<td>11 (23,4)</td>
<td>0,617</td>
</tr>
</tbody>
</table>

*No total=42   **No total=41   ***No total=46

No statistically significant differences

Conclusions and relevance

It is essential to continue with the planned recruitment. At the moment it is not yet possible to establish a clear recommendation on the use of paracetamol in hsPDA.