Background and aim

- Rodenticidal hepatotoxicity: major cause of death in the young in Tamil Nadu.¹
- Plasma exchange (PLEX) may improve survival.
- **Aim**: To analyse survival with low-volume PLEX to treat rodenticidal hepatotoxicity in children

Methods

- Retrospective study: 110 rodenticidal hepatotoxicity patients (32 children ≤ 18 years, 78 adults) from Dec 2017 - Aug 2021
- Acute liver injury (ALI, coagulopathy alone)
- Acute liver failure (ALF, encephalopathy also)
- Listing for urgent liver transplantation (LT)
  - for ALF: King’s college criteria²
  - for rodenticidal hepatotoxicity: Kochi criteria³ (MELD ≥36 or baseline INR ≥ 6 with encephalopathy)
- One-month survival analysed

Results

<table>
<thead>
<tr>
<th>Baseline characteristics in 32 children</th>
<th>Met Kochi criteria (n = 10)</th>
<th>Not met Kochi criteria (n = 22)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>15.6 (7.4 – 18)</td>
<td>16.1 (4.7 – 18)</td>
<td>0.63</td>
</tr>
<tr>
<td>Females</td>
<td>7</td>
<td>11</td>
<td>0.29</td>
</tr>
<tr>
<td>VWF % (n=8)</td>
<td>538 (271 - 649)</td>
<td>369 (109 – 685)</td>
<td>0.52</td>
</tr>
<tr>
<td>MELD (n=21)</td>
<td>38 (33 – 45)</td>
<td>21 (8 – 34)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>SOFA (n=20)</td>
<td>7 (2 – 13)</td>
<td>3 (0 – 5)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>ALI (n=20)</td>
<td>1</td>
<td>19</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>ALF (n=12)</td>
<td>9</td>
<td>3</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Treatment details in children who met Kochi criteria for urgent LT (n = 10)

- All families opted against LT
- PLEX done in 9 patients (ALI:1, ALF: 8)
  - No. of PLEX sessions: 3 (1 - 5; median, range)
  - PLEX volume: 30 (15 – 38) ml/Kg body weight
  - Low dose prednisolone in 7 patients
- ALF patients had anti-cerebral edema measures

In-hospital survival in patients who met Kochi listing criteria for urgent LT (all age groups)

<table>
<thead>
<tr>
<th>Our current series (underwent PLEX)</th>
<th>Saraf et al³</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 18 yrs</td>
<td>&gt; 18 yrs</td>
</tr>
<tr>
<td>6 / 9 patients (67%)</td>
<td>10 / 18 (56%)</td>
</tr>
<tr>
<td>Liverpool transplant</td>
<td>12 / 14 (86%)</td>
</tr>
</tbody>
</table>

Conclusion

- Low volume PLEX improves survival without LT in rodenticidal hepatotoxicity patients who meet Kochi listing criteria

Reference


Rodenticidal hepatotoxicity patients (n) = 110

- Adults (> 18 years) (n) = 78
- Children ≤ 18 years (n) = 32
- ALI (n) = 20 (62%)
- ALF (n) = 12 (38%)
- PLEX – LV (n) = 6
- PLEX – LV (n) = 11
- Met criteria for urgent liver transplant
  - Kochi criteria (n) = 1
  - King’s college (n) = 0
  - Met criteria for urgent liver transplant
  - Kochi criteria (n) = 9
  - King’s college (n) = 9