담도폐쇄증에 대한 Kasai술식 후 생존결과 및 예후인자

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Backgrounds and Purpose

• The prognostic factors of biliary atresia after Kasai portoenterostomy
  • the patient’s age at the time of Kasai portoenterostomy (age)
  • the size of bile duct at the porta hepatis (size)
  • the clearing of jaundice after Kasai portoenterostomy (clearing)
  • the surgeon’s personal experience.

• The aim of this study is to decide the most significant prognostic factor of biliary atresia after Kasai portoenterostomy.
Materials and Methods

- Retrospective statistical analysis of the above mentioned prognostic factors
- In 51 cases of biliary atresia that had Kasai portoenterostomy by one pediatric surgeon
- For the statistical analysis, Kaplan-Meier method, Log-rank test and Cox regression test were used.
- A p value of less than 0.05 was considered to indicate statistical significance.
Results (I)

51 cases

Kasai operation

42 cases

Liver Transplantation = Death in this study

9 cases

Death

6 cases

Death

36 cases

Live
Results (II)

- Fifteen patients were regarded to be dead in this study, including nine liver transplantations.
  - 5 years survival rate = 59.0%
- Death without liver transplantation: 6 cases
  - Fatal ACR syndrome-2cases
  - Intractable cholangitis-2 cases
  - Duodenal ulcer bleeding-1case
  - Liver failure with parent’s refuse against recommendation of liver transplantation-1 case
- Death with liver transplantation: 2 cases
  - Post transplantation bleeding: 1 case
  - PTLD (Post Transplantation Lymphoproliferative Disorder): 1 case
- Actual death including liver transplantation cases: 8 cases
  - Actual 5 years survival rate=72.6%
Results (III)

Survival Curve of All Cases

(Kaplan–Meier method)
Results (IV)

Survival Curve by Age (60 days)

(Kaplan-Meier method)

\[ p = 0.06 \]
Results (V)

Survival Curve by Age (90 days)

(Kaplan–Meier method)

\[ p = 0.05 \]
### Results (VI)

The Survival rate by the bile duct size

<table>
<thead>
<tr>
<th>Bile Duct Size (um)</th>
<th>Number of patient</th>
<th>5-year Survival Rate (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>8</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>≥50</td>
<td>43</td>
<td>63.3</td>
<td>0.45</td>
</tr>
<tr>
<td>&lt;100</td>
<td>23</td>
<td>42.1</td>
<td></td>
</tr>
<tr>
<td>≥100</td>
<td>28</td>
<td>66.8</td>
<td>0.23</td>
</tr>
<tr>
<td>&lt;150</td>
<td>38</td>
<td>55.2</td>
<td></td>
</tr>
<tr>
<td>≥150</td>
<td>13</td>
<td>70.5</td>
<td>0.66</td>
</tr>
<tr>
<td>&lt;200</td>
<td>47</td>
<td>55.7</td>
<td></td>
</tr>
<tr>
<td>≥200</td>
<td>4</td>
<td>80.0</td>
<td>0.35</td>
</tr>
</tbody>
</table>
Results (VII)

Survival Curve by jaundice clearing at 6 months after Kasai operation

$P = 0.02$

(Kaplan–Meier method)
### Results (VIII)

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Hazard ratio</th>
<th>$P$ - value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.005</td>
<td>0.629</td>
</tr>
<tr>
<td>Size</td>
<td>0.972</td>
<td>0.002</td>
</tr>
<tr>
<td>Clearing</td>
<td>1.086</td>
<td>0.001</td>
</tr>
</tbody>
</table>

**Analysis of prognostic factors (Cox regression)**
Summary of the Results

- There is no significant difference of survival rate between groups of age.
- The age is also not significant risk factors for survival in this study (Cox Regression test; $p$ value = 0.63).
- There is no significant difference of survival rate between groups of bile duct size.
- However, the size is significant risk factors for survival (Cox Regression test; $p$ value = 0.002).
- There is significant difference of survival rate between groups of serum bilirubin clearing (Kaplan-Meier method; $p$ value = 0.02).
- The serum bilirubin clearing is also significant risk factors for survival (Cox Regression test; $p$ value = 0.001)
Conclusions

The serum bilirubin clearing is the most significant prognostic factor of biliary atresia after Kasai portoenterostomy.