Liver Transplantation for PSC

John P. McVicar, M.D.
Professor of Clinical Surgery
University of California, Davis
Liver Transplantation for PSC

- History of Liver Transplantation
- Indications for Liver Transplantation
- The Demand for Liver Transplantation
- Surgical Procedure
- Complications
- Live Donor Liver Transplantation (LDLT)
- Questions
Liver Transplantation for PSC
Topics not covered

- Liver Allocation
- Waiting List
Disclosures

- I have no financial conflicts to disclose
- UC-Davis no longer performs liver transplantation
The History of Liver Transplantation
Dr. Tom Starzl
Liver Transplant
Pioneer
1st One Year Survival after Liver Transplantation

- 1967 at University of Colorado
  - Super Bowl I
- 19 month old girl
- Dx: Hepatoma
Does everyone with PSC need a liver transplant?

No.
Risks vs. Benefits of Liver Transplantation

Chance of Dying from Liver Disease

Chance of Dying from Transplantation
Signs of Decompensation in Cirrhotic Patients

- Ascites
- Jaundice
- Variceal hemorrhage
- Encephalopathy
The Risk of Liver Disease
Predicting Death in Patients with Cirrhosis

Model for End-Stage Liver Disease (MELD)
MELD

- Bilirubin
- INR
- Creatinine
MELD Advantages

- Uses only objective measures
- Predicts chance of death in the next 3 months
- Concordance 80-85%
90 Day Outcomes by MELD

Patients on list Jan 1, 2005
OPTN Annual Report 2006

Liver Transplantation
The Risk of Liver Transplantation
Improved Results with Liver Transplantation

- Refinement of surgical techniques
- Improved immunosuppressive medications/regimens
- Better organ preservation
- Improved patient selection and management
Patient Survival after Liver Transplant
(During my career)
Figure IV-9A: One-Year Adjusted Deceased Donor Graft and Patient Survival by Year of Transplantation

## OLT Patient Survival by Status

*United States: 2006-7*

<table>
<thead>
<tr>
<th>Medical Urgency</th>
<th>% Survival</th>
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</thead>
<tbody>
<tr>
<td>MELD 6-10</td>
<td>87.8%</td>
</tr>
<tr>
<td>MELD 11-14</td>
<td>90.0%</td>
</tr>
<tr>
<td>MELD 15-20</td>
<td>91.6%</td>
</tr>
<tr>
<td>MELD 21-30</td>
<td>88.4%</td>
</tr>
<tr>
<td>MELD &gt;30</td>
<td>80.8%</td>
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</tbody>
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UNOS Annual Report 2009
The Demand for Liver Transplantation
The number of patients awaiting a liver transplant at year-end peaked in 2001; this is clearly related to the introduction of the MELD/PELD allocation system in 2002. The number who received a deceased donor liver transplant has gradually increased, reaching a peak in 2006. The gap between the numbers of candidates and recipients has been slowly shrinking since 2002.

Liver Transplantation: Operative Technique
Liver Transplantation
Liver Transplantation
Liver Transplantation
Liver Transplantation
Complications after Liver Transplantation

- Surgical / Technical
- Medical
Surgical Complications after Liver Transplantation (Immediate)

- Bleeding
- Hepatic Artery Thrombosis
- Primary Non-Function
Surgical Complications after Liver Transplantation (Delayed)

- Hepatic Artery Thrombosis
- Bile leak
- Biliary Stricture
Surgical Complications after Liver Transplantation (Delayed)

- Rejection
- Infection
  - viral
  - bacterial
  - fungal
- Recurrence of Disease
  - ~20% in PSC
## Liver Transplants 2009-2010

<table>
<thead>
<tr>
<th>Year (PSC)</th>
<th>Deceased Donor</th>
<th>Living Donor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>6101</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>261</td>
<td>29</td>
</tr>
<tr>
<td>2010 (PSC)</td>
<td>6009</td>
<td>282</td>
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<tr>
<td></td>
<td>256</td>
<td>54</td>
</tr>
</tbody>
</table>
Living Donor Liver Transplants

- Began with children
- Has been performed in adults for about the last decade
- Not all liver transplant centers do live donor procedures
Advantages of LDLT

- There are no organ allocation rules
  - Waiting time, MELD
  - Cholangiocarcinoma
Disadvantages of LDLT

- Puts donors at risk
  - Not everyone has a donor
- Slightly more complications
Centers performing LDLT

- California
  - UCSF
  - Stanford
  - UCLA
  - USC
- Arizona
  - Mayo
  - Good Samaritan
Centers performing LDLT

- National
  - Northwestern
  - Lahey
  - Henry Ford
  - Mayo (Minnesota)
  - NY Presbyterian
  - NY Mt. Sinai
  - Pittsburgh
  - Penn
Life after Transplant