Evaluation Process for Liver Transplant Candidates

Objectives
- Identify components of the liver transplant referral to evaluation
- Describe the role of the liver transplant coordinator
- Describe selection committee criteria
- Discuss the MELD system and organ allocation
Goals of the Evaluation

- Determine if the patient needs a liver transplant
- Are they a good surgical candidate for transplant
- Will they have a good outcome
- Will they take care of themselves and their new liver

Liver Transplant Evaluation Volume

<table>
<thead>
<tr>
<th>In Patient</th>
<th>Ambulatory</th>
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<tbody>
<tr>
<td>2017</td>
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<tr>
<td>267</td>
<td>370</td>
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<tr>
<td>2018</td>
<td>2018</td>
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<td>220</td>
<td>219</td>
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Referral Process

- New transplant referral
  - Patients must be referred for transplant evaluation by a physician or case manager
  - Received:
    - Called into transfer center or to our referral coordinator
    - If initiated in the transfer center referrals are re-directed to the referral coordinator to process
    - Faxed
    - Emailed
Referral Process

• Role of referral coordinator
  - Review medical records and diagnostic workup
  - Reviews pertinent clinical with a liver transplant physician for medical acceptance or denial
  - Requests financial clearance (insurance authorization) for the transplant evaluation
  - Completes an order checklist that includes work up needed to complete the evaluation
    - If diagnostic testing or labs were completed at the outside hospital, they do not need reordered as part of the evaluation unless recommended by a physician to repeat study

Referral Process

• Role of referral coordinator
  - Completes an intake assessment.
    - Patient name, age, DOB
    - Referring hospital and patient location (floor/step down/ICU)
    - Physician and case manager contact information
    - Diagnosis
    - PMH and PSH
    - Drug & alcohol history (last use and inquire if urine toxicology was done)
    - Vital signs
    - Gtts/pressors, transfusions,
    - Vent settings or O2 requirements
    - Labs including: Na, Cr, TB, AST, ALT, Alb, Plt, H&H, INR

Referral Process

• Role of referral coordinator
  - Emails intake assessment to the transplant team members
    - Attaches the face sheet, and H&P
  - When the patient is financially clear for transplant evaluation and the bed becomes available the patient is transported to UCLA from an outside hospital
  - Once admitted evaluation orders are placed and the consulting teams are notified
  - Triage the patient transfer list with the transplant fellow when there are multiple referrals & transplant patients pending bed placement
Liver Transplant Evaluation

- Consultations for transplant evaluation
  - Transplant Hepatologist
  - Transplant Surgeon
  - Transplant Coordinator
  - Transplant Social Worker
  - Transplant Psychiatrist
  - Transplant Cardiologist
  - Transplant Pulmonologist
  - Transplant Dietitian
- Other consults may be required due to diagnosis or assessment findings.

Liver Transplant Evaluation

- Evaluation workup:
  - Blood Work
    - Serologies
    - Type and screen X 2
    - Hematology
    - Chemistry panels
    - Drug toxicology screens
  - Imaging Studies
    - Abdominal Ultrasounds
    - CAT scan or MRI w/without IV contrast
    - Chest X-ray and/or CAT scan chest

Liver Transplant Evaluation

- Evaluation workup:
  - Cardiac Tests
    - Echocardiogram
    - Stress test or cardiac angiogram (not ordered until assessed by Cardiology)
  - Pulmonary Tests
    - Pulmonary Function Tests
    - ABG
Liver Transplant Evaluation

- Evaluation workup:
  - Routine testing is performed per US preventive task force guidelines
    - Mammogram or bilateral breast ultrasound
    - Every two years on all female patients age 40-49
    - Annually on all female patients age 50 or greater
    - PAP Smear
    - Every 3 years on all female patients ages 21 to 29
    - Every five years for female patients ages 30-65
    - Not required over age 65 unless a prior Pap was pre-cancerous
    - Colonoscopy
    - Age 50 or greater if not done within last 5 years
    - Age 40 or greater with family history of colon cancer if not done within the last 5 years

Evaluation Process

- Role of the evaluation coordinator
  - Consents the patient for the evaluation
  - Completes an intake assessment
    - Demographic information
    - Height and Weight
    - Transplant diagnosis
    - Liver Symptoms (encephalopathy, GI bleed, ascites, wasting, edema)
    - Medical and Surgical history
      - Liver cancer history, treatment history
      - Ambulatory/ mobility problems
      - Social history (caregivers, language, highest level of education, currently working, travel time to UCLA from their home)
      - Substance use history (last se), AA or NA attendance

- Provides liver transplant education
  - Pre-transplant
    - Alternatives to transplant, evaluation process, selection committee, UNOS, organ allocation, types of donors, waitlist maintenance, drug and alcohol abstinence
  - Transplant surgery
    - About the procedure, potential medical and surgical complications
  - Post-transplant
    - Potential psychological concerns, post-transplant medications, post-transplant clinic schedule, patient responsibilities
Evaluation Process

• Role of the evaluation coordinator
  - Reviews diagnostic testing results and consultants recommendations
  - Prepares patient case for presentation at the selection committee meeting
  - Reviews all workup (lab results, diagnostic testing, consultations)
  - Completes a selection committee template
  - Identify abnormal findings and or concerns
  - Discusses the outcome of the committee with the patient and the family
  - If additional testing is needed to make a determination the coordinator schedules the workup and or consults and follows up with the results/ recommendations

Evaluation Process

• Role of the bedside nurse
  - Completion of evaluation orders
  - Taking Vitals
  - Monitoring patient
  - Administering medication
  - Prepping a patient for tests
  - Patient education
  - Support

Liver Transplant Evaluation

• Patient Transplant Selection Committee (PSCM)
  - All patients are presented at the PSCM after the workup has been completed and the results are available
  - Acceptance criteria
    - No significant comorbidities that would preclude a satisfactory outcome
    - Patient’s ability to function normally is severely compromised by their liver disease
    - Social support and compliance
Liver Transplant Evaluation

- Patient Transplant Selection Committee (PSCM)
  - Contraindications
    - Advanced cardiopulmonary disease
    - Uncontrolled infection outside of the liver
    - Psychological instability
    - Lack of social support
    - Recent alcohol or substance use
    - Cancer outside of the liver
    - Large tumor burden or portal vein thrombosis with hepatocellular carcinoma

Liver Transplant Evaluation

- Transplant Selection Committee
  - The patient is notified by the transplant coordinator with the outcome of the selection committee meeting by verbal notification and a letter
    - Early: transplant is not needed at this time or conditioned improved
    - Re-present: Additional testing or consults are required in order to make a decision
    - Denied: there may be psychosocial or medical barriers to transplant
    - Accepted: approved to be listed for transplant

Patient Acceptance

- Financial clearance for listing
  - If accepted for transplant request for listing authorization is submitted to the insurance company for liver transplant. UCLA then verifies that the patient has adequate benefits for transplant.
  - Once financial clearance is received the patient can be listed for liver transplant by the coordinator.
Listing Process
• United Network of Organ Sharing (UNOS)
  • A national organization mandated by the federal government to
distribute donated organs.
  • Facilitates all organ allocation in the United States.
  • Monitors every organ allocation to ensure compliance.
  • Patients are listed in the UNOS database and there is one
  waiting list for our entire country.

Listing Process
• Criteria needed to list
  • Recipients first and last name, DOB
  • Race/ ethnicity
  • Social security number or UNOS assigned patient identifier code
    if no SS# is available
  • Current height and weight
  • Type and screen (2 required)
  • Up to date serologies hepatitis B, hepatitis C and HIV
  • Most recent listing labs
    • sodium, total bilirubin, creatinine, albumin and INR
  • Had dialysis twice, or 24 hours of CVVHD, within a week prior to
    the serum creatinine test? yes/ no

Liver Allocation
• MELD: Model For End Stage Liver Disease
  • Utilized to allocate donor livers and distribute organs to the
    sickest patients and is used for candidates who are 12 years
    and older.
  • It is calculated with the following labs.
    • Sodium
    • Creatinine
    • Total Bilirubin
    • Albumin
    • INR
  • The higher the score the more urgent the need for a transplant.
  • Patients on dialysis receive the equivalent of a creatinine of 4.
How Organs are Allocated

- ABO blood type
  - Must be compatible
- Medical Urgency
  - Status 1A:
    - Immediate life threatening, must meet UNOS criteria
    - Applies to patients with no prior history of liver disease
  - MELD:
    - Higher MELD score have priority over lower scores
- Size
  - Must be comparable
- Geographic proximity to the donor

Waiting Time

- It is not possible for us to predict how long a patient will wait for a donor liver as we are waiting for a random event to occur (death of a potential donor). Some patients wait days while others wait weeks, months or years.
- Waiting times vary by regions of the country.
### Patient Resources
- [https://youtu.be/HuKx2a5HklM](https://youtu.be/HuKx2a5HklM)

### Summary
- Identify the components of the liver transplant evaluation.
- Describe the role of the liver pre-transplant coordinator.
- Describe selection committee criteria.
- Discuss the MELD system and organ allocation.