

Liver transplant syllabus

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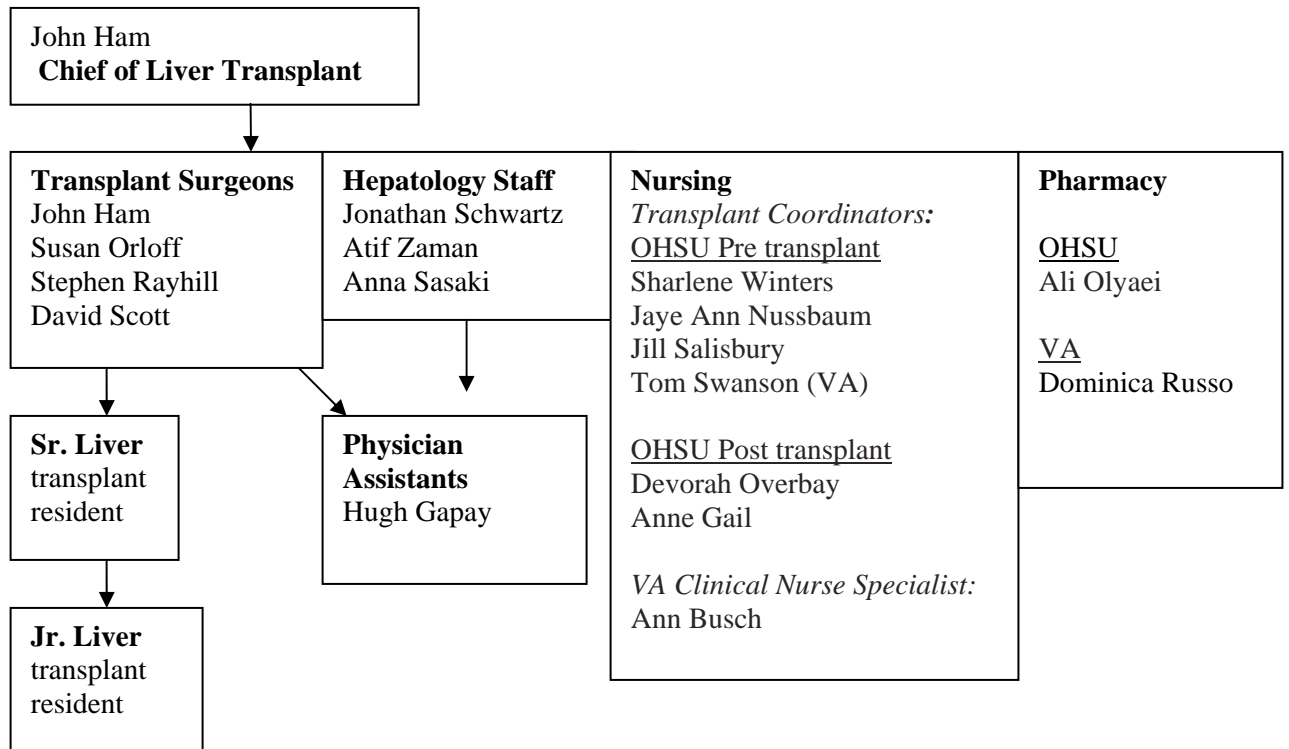
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Liver transplant protocol

Composition of the Service

The liver transplant provides care to patients who have acute and chronic diseases of the liver and bile ducts. This care is delivered as part of a multidisciplinary team including specialists from gastroenterology, radiology, pharmacy, nursing and surgery. Patients may be seen at OHSU, Portland VA medical center and Doernbecher children's hospital.



Contact Information

Liver Transplant Surgeons (4-7810)

John Ham, M.D. pager 1-2845
 Susan Orloff, M.D. pager 1-4105
 Stephen Rayhill, M.D. pager 1-4943
 David Scott pager 1-5157

Hepatology Staff

Jonathan Schwartz, M.D. pager 1-0371
 Atif Zaman, M.D. pager 1-0866
 Anna Sasaki, M.D. ext. 4-8577

Liver Transplant Nursing Staff

OHSU Nursing Staff 4-7810
 Tom Swanson (VA) 095-5-4512
 Ann Busch (VA) 095-5-6864

Pharmacy Staff

Ali Olyaei, PhD 4-8007
 Dominica Russo 095-5-6681

OHSU Liver Transplant Office
OHSU Liver Transplant Clinic

Mac Hall 2160
 PPV 330

Responsibilities of Residents

The junior liver transplant resident is responsible for the care of the ward patients. They should apprise the senior resident or liver transplant staff of changes in the condition of the patients. Junior residents must also rotate call with the renal transplant junior resident and are responsible for both services when on call. A complete sign-out must be exchanged prior in leaving campus on post call days. Junior residents are responsible for preparing a presentation for the Friday education conference.

The senior Liver transplant resident is responsible for the overall care of the service and should serve as a role model for appropriate professional behavior, leadership, surgical knowledge and patient care. They are directly responsible for assigning resident coverage for operative cases, clinics, and ward care. They are responsible for the care of all liver transplant patients in the ICU and responsible for nursing calls while on home call.

Weekly Schedule

Monday

7:00 AM Grand Rounds (old library)

8:30 AM Residents conference

5:00 PM Morbidity and mortality Conference (old library)

Tuesday

7:30 AM HCC Conference (Hatfield 11-D03)

9:00-12:00 AM OHSU clinic (3rd floor Physicians Pavilion)

4:30-5:30pm Med-Surg GI Conference 8B60

Wednesday

Thursday

7:00 AM GI oncology Conference (14th floor Hatfield)

8:00 AM Combined transplant Conference (8th floor University hospital)

9:00-1200 VA transplant Clinic (8th floor)

1:30 PM Liver transplant multidisciplinary conference (2nd floor VA)

To follow Liver Selection conference (2nd floor VA)

Friday

8:30 AM resident teaching Conference (3rd floor Physicians Pavilion)

9:00 AM OHSU clinic (3rd floor Physicians Pavilion)

Curriculum

Educational goals

Junior Resident

Medical Knowledge

Understand the normal anatomy and physiology of the liver and bile ducts.
Understand the pathophysiology of cirrhosis, ascites and portal hypertension.
Understand the concepts of antigen presentation and allorecognition.
Understand the ontogeny of the immune system including positive and negative selection.
Understand cell mediated and humoral immunity particularly as they pertain to rejection.
Understand both clinical and pathologic staging of liver cancer as well as cancers of the biliary tract.

Patient Care

Understand the diagnosis and treatment of acute liver failure.
Understand the diagnosis and treatment of chronic liver failure.
Understand the medical and surgical treatments of portal hypertension.
Understand the indications for liver transplantation.
Understand the various techniques used in liver transplantation.
Understand the diagnosis and treatment of viral hepatitis
Understand the diagnosis and treatment of cholestatic liver disease
Understand the diagnosis and treatment of hepatic and biliary neoplasms.
Understand the appropriate technique for central line, Swan, and arterial line placement
Understand the appropriate technique for paracentesis.
Understand how modern immunosuppressive drugs are used in liver transplantation and know their common side effects
Understand the infectious disease problems related to liver transplantation.
Understand the metabolic problems related to liver transplantation.
Understand and utilize the various laboratory assays used to monitor liver transplant patients and their immunosuppression protocols.
Understand MELD scoring system and how it applies to organ allocation; and the role of the organ procurement organization in this process.
Understand the basic principles of pre-operative evaluation and post-operative care associated with liver transplantation and major liver operations.

Professionalism

Learn and practice the ethical principles required for proper caring for the surgical population including justice, confidentiality, and the provision of informed consent.
Learning empathy and sensitivity, especially with respect to various social and cultural contexts.

Interpersonal and Communication skills

Learn to present relevant patient information to team members in a complete, yet concise manner.

Learn to effectively sign out patients to other residents.

Learn to communicate effectively and compassionately with patients, family members, multidisciplinary team members, ancillary services, and referring care providers.

Practice based learning

Accept responsibility for the care of patients on the ward.

Develop an effective and professional practice management style

Learn to utilize the resources of the OHSU library and Web-based information for the optimization of patient care.

System based practice

Partner with other team members to provide quality care.

Understand the roles of the various team members in the care of patients with liver disease.

Understand the liver transplant allocation system (MELD/PELD) and the role of the organ procurement organization.

Understand the contributions of various team members in the evaluation of a liver transplant recipient.

Educational Goals

Senior resident

Medical Knowledge

Understand the normal anatomy and physiology of the liver and bile ducts.
Understand the pathophysiology of cirrhosis, ascites and portal hypertension.
Understand the concepts of antigen presentation and allorecognition.
Understand the ontogeny of the immune system including positive and negative selection.
Understand cell mediated and humoral immunity particularly as they pertain to rejection.
Understand both clinical and pathologic staging of liver cancer as well as cancers of the biliary tract.

Patient Care

Understand the diagnosis and treatment of acute liver failure.
Understand the diagnosis and treatment of chronic liver failure.
Understand the medical and surgical treatments of portal hypertension.
Understand the indications for liver transplantation.
Understand the various techniques used in liver transplantation.
Understand the diagnosis and management of complications in liver transplantation
Understand the diagnosis and management of complications in biliary tract surgery
Understand the multidisciplinary approach to the treatment of hepatic malignancy
Understand the management of the pre- and post operative liver transplant patient in the ICU setting
Understand how modern immunosuppressive drugs are used in liver transplantation and know their common side effects
Understand the infectious disease problems related to liver transplantation.
Understand the metabolic problems related to liver transplantation.
Understand and utilize the various laboratory assays used to monitor liver transplant patients and their immunosuppression protocols.
Understand MELD scoring system and how it applies to organ allocation; and the role of the organ procurement organization in this process.
Understand the basic principles of pre-operative evaluation and post-operative care associated with liver transplantation and major liver operations.

Professionalism

Learn and practice the ethical principles required for proper caring for the surgical population including justice, confidentiality, and the provision of informed consent.
Learning empathy and sensitivity, especially with respect to various social and cultural contexts.

Interpersonal and Communication skills

Effectively communicate with others on the transplant team in a leadership role
Communicate effectively and compassionately with patients, family members, multidisciplinary team members, ancillary services and primary providers.

Practice based learning

Understand and review the literature to improve and enhance patient care

Systems based practice

Understand liver transplant allocation and the role of the organ procurement organization

Understand the contributions of team members in the evaluation of a liver transplant recipient

Partner with other team members to provide quality care.

Understand the roles of the various team members in the care of patients with liver disease.

Understand the liver transplant allocation system (MELD/PELD) and the role of the organ procurement organization.

Understand the contributions of various team members in the evaluation of a liver transplant recipient.

Educational objectives

Junior Resident

Medical Knowledge

- Describe the segments of the liver and normal biliary anatomy
- Describe common variants in extra hepatic biliary anatomy
- Describe the structures found within the portal triad
- Describe the complications of portal hypertension
- Describe the steps involved in the metabolism of bilirubin
- Describe how antigens are presented to the immune system and how it responds
- Explain how autoreactive t-cells are eliminated during development

Patient Care

Cognitive:

- Explain the difference between induction and maintenance immunosuppression
 - List 3 drugs used for maintenance immunosuppression
 - List 3 drugs used for induction immunosuppression
 - List 2 drugs used for the treatment of rejection
 - List the most common side effect for each of these drugs
 - Explain the significance of viral hepatitis serologies
 - Describe current treatments for hepatitis A, B and C
 - Describe the differences between biliary atresia, primary sclerosing cholangitis and primary biliary cirrhosis
 - Describe the medical and surgical options for controlling ascites
 - Describe the medical and surgical options for controlling hepatic encephalopathy
 - Describe the medical and surgical options for controlling variceal hemorrhage
 - List the common etiologies for acute liver failure
 - Describe the key differences between acute and chronic liver disease
 - Describe the treatment options for cholangiocarcinoma
 - Describe the treatment options for hepatocellular carcinoma
 - Describe the techniques of liver transplantation
 - Describe the techniques of hepatic resection
 - Interpret the various common laboratory abnormalities encountered in liver transplantation
 - Choose and interpret the radiological studies employed in liver transplantation
- #### Technical:
- Perform paracentesis with assistance
 - Perform central line placement with assistance
 - Perform arterial line placement with assistance
 - Perform Swan-Ganz line placement with assistance

Professionalism

Interpersonal communication

Effectively present patients to the multidisciplinary team

Practice based learning

Prepare a weekly presentation on topics relevant to the care of the liver transplant patient.

System-based practice

Discuss the criteria for organ donation, including brain death, the DCD donor, and contraindications to donation..

Educational objectives

Senior Resident

Medical Knowledge

Describe the segments of the liver and normal biliary anatomy

Describe the classification of choledochal cysts

Describe the Bismuth classification

Describe the features of acute liver rejection

Describe the structures found within the portal triad

Describe the complications of portal hypertension

Describe the steps involved in the metabolism of bilirubin

Describe how antigens are presented to the immune system and how it responds

Explain how autoreactive t-cells are eliminated during development

Patient Care

Describe the appropriate work up for a liver transplant recipient with abnormal liver function

Describe the work up for a liver transplant recipient with low urine output

Describe the work up for a liver transplant recipient with an altered mental status

Discuss the proper interpretation of the Swan-Ganz catheter

Discuss 3 modes of mechanical ventilation

Describe several operative therapies for portal hypertension and potential consequences

Participate in the initial evaluation, work up and presentation of a liver transplant recipient

Describe the techniques of liver transplantation

Describe the techniques of hepatic resection

Interpret the various common laboratory abnormalities encountered in liver transplantation

Choose and interpret the radiological studies employed in liver transplantation

Technical:

Actively participate in liver transplant surgery

Demonstrate techniques for liver mobilization, and hepatic jejunal anastomosis

Participate in the initial evaluation, work up and presentation of a patient with hepatic malignancy at a multidisciplinary conference

Demonstrate several methods for safe hepatic transection.

Professionalism

Interpersonal and communication skills

Actively assume leadership role on team

Practice based learning

Identify appropriate resources and modify practice

Systems based practice

Attend an OPO case review meeting

Actively participate in multidisciplinary meetings

LIVER TRANSPLANT SYLLABUS (RESIDENT COURSE PACKET)

(Articles are italicized)

1. Cover Sheet
2. Table of Contents
3. Pre-Transplant Evaluation: Key Concepts / Questions
4. Phase I Evaluation / Phase II Evaluation
5. *Evaluation of Abnormal Liver-Enzyme Results in Asymptomatic Patients*
6. *Liver Transplantation: Current Status and Novel Approaches to Liver Replacement*
7. *MELD and PELD: Application of Survival Models to Liver Allocation*
8. *Longitudinal Assessment of Mortality Risk Among Candidates for Liver Transplantation*
9. *Liver Transplantation*
10. Post-Transplant Care: Key Concepts / Questions
11. *Long-Term Management of Liver Transplant Recipients*
12. *Immunosuppressive Therapy in Liver Transplantation*
13. *One Thousand Liver Transplants (The Lessons Learned)*
14. Viral Hepatitis: Key Concepts / Questions
15. *Serologic Diagnosis of Acute and Chronic Viral Hepatitis*
16. Liver Transplantation for Viral Hepatitis
17. *Hepatitis C in the Liver Transplant Recipient: Current Understanding and Treatment*
18. Cholestatic Liver Disease: Key Concepts / Questions
19. *Clinical Evaluation of Jaundice*
20. *Primary Biliary Cirrhosis*
21. *Liver transplantation for primary sclerosing cholangitis: timing, outcome, impact of inflammatory bowel disease and recurrence of disease*
22. Fulminant Hepatic Failure: Key Concepts / Questions
23. *Fulminant Hepatic Failure*
24. Ascites: Key Concepts / Questions
25. *Management of Adult Patients with Ascites Caused by Cirrhosis*
26. *A Comparison of Paracentesis and Transjugular Intrahepatic Portosystemic Shunting in Patients with Ascites*
27. *Reversal of Type 1 Hepatorenal Syndrome with the Administration of Midodrine and Octreotide*
28. Portal Hypertension – Varices: Key Concepts / Questions
29. *The Management of Bleeding due to Portal Hypertension. Part I. The Management of Acute Bleeding Episodes*
30. *Prevention of Variceal Rebleeding*
31. *Gastroesophageal Variceal Hemorrhage*
32. *Treatment of Hepatic Encephalopathy*
33. *Hepatic Encephalopathy*

34. Hepatic Tumors: Key Concepts / Questions
35. *The Role of Liver Transplantation in the Management of Hepatocellular Carcinoma*
36. *Treatment of Hepatocellular Carcinoma: is There and Optimal Strategy?*
37. *Hepatic Tumors*
38. *Liver Transplantation for the Treatment of Small Hepatocellular Carcinomas in Patients with Cirrhosis*
39. *Adult-to-Adult Transplantation of the Right Hepatic Lobe from a Living Donor*
40. *Transplantation of Liver Grafts from Living Donors into Adults – Too Much, Too Soon*
41. *Review of Solid-Organ Transplantation in HIV-Infected Patients*
42. *Infections After Liver Transplantation*

ON LINE RESOURCES

1. *Sabiston's Textbook of Surgery*, 17th edition, 2004.
 - a. Chapter 50: The Liver
 - b. Chapter 51: Complications of Cirrhosis and Portal Hypertension
2. *Schwartz Principles of Surgery*, 8th edition, 2005.
 - a. Chapter 10: Transplantation