

GOALS & OBJECTIVES: SOLID ORGAN TRANSPLANT (UH TX Rotation)

Intern (PGY-1): Goals

MEDICAL KNOWLEDGE

1. Understand the normal anatomy and physiology of the liver and bile ducts.
2. Understand the pathophysiology of cirrhosis, ascites and portal hypertension.
3. Understand the concepts of antigen presentation and allorecognition.
4. Understand the ontogeny of the immune system including positive and negative selection.
5. Understand cell mediated and humoral immunity particularly as they pertain to rejection.
6. Understand both clinical and pathologic staging of liver cancer as well as cancers of the biliary tract.
7. Know the implications of common urologic symptoms following renal transplant (oliguria, anuria, dysuria, hematuria)
8. Understand the steps in preoperative preparation of patients for renal transplant.
9. Know the various urethral catheters and their appropriate use.
10. Know different categories of immunosuppressant medications and their common side effects.

PATIENT CARE

1. Understand the diagnosis and treatment of acute liver failure.
2. Understand the diagnosis and treatment of chronic liver failure.
3. Understand the medical and surgical treatments of portal hypertension.
4. Understand the indications for liver transplantation.
5. Understand the various techniques used in liver transplantation.
6. Understand the diagnosis and treatment of viral hepatitis
7. Understand the diagnosis and treatment of cholestatic liver disease
8. Understand the diagnosis and treatment of hepatic and biliary neoplasms.
9. Understand the appropriate technique for central line, Swan, and arterial line placement
10. Understand the appropriate technique for paracentesis.
11. Understand how modern immunosuppressive drugs are used in liver transplantation and know their common side effects
12. Understand the infectious disease problems related to liver transplantation.
13. Understand the metabolic problems related to liver transplantation.
14. Understand and utilize the various laboratory assays used to monitor liver transplant patients and their immunosuppression protocols.
15. Understand MELD scoring system and how it applies to organ allocation; and the role of the organ procurement organization in this process.
16. Understand the basic principles of pre-operative evaluation and post-operative care associated with liver transplantation and major liver operations.
17. Have the ability to gather accurate and complete history and patient examination, including the male genitourinary exam.
18. Have the ability to manage routine pre- and post-operative surgical patients.
19. Know the proper use of sterile technique when performing or assisting with operative procedures.
20. Have competence in performing selected urologic procedures such as routine and difficult urethral catheterizations.
21. Have the ability to perform a subcuticular skin closure.

PRACTICE-BASED LEARNING

1. Accept responsibility for the care of patients on the ward.
2. Develop an effective and professional practice management style
3. Learn to utilize the resources of the OHSU library and Web-based information for the optimization of patient care.
4. Prepare a literature review based update to the transplant team on a urology or transplant topic related to a patient seen in clinic or in the hospital.

INTERPERSONAL AND COMMUNICATION SKILLS

1. Learn to present relevant patient information to team members in a complete, yet concise manner.
2. Learn to effectively sign out patients to other residents.
3. Learn to communicate effectively and compassionately with patients, family members, multidisciplinary team members, ancillary services, and referring care providers.
4. Be able to present data in a well-organized fashion on attending rounds and in the clinic.
5. Understand the importance of responding promptly to pages from nurses and staff.
6. Be able to effectively demonstrate the ability to obtain informed consent from a patient and address any questions or concerns of the patient and their family.

PROFESSIONALISM

1. Learn and practice the ethical principles required for proper caring for the surgical population including justice, confidentiality, and the provision of informed consent.
2. Learning empathy and sensitivity, especially with respect to various social and cultural contexts.
3. Understand how to demonstrate integrity and honesty.
4. Understand the elements of professional dress and behavior at all times.
5. Understand the importance of prompt arrival at rounds, conferences, clinic, and the operating room.

SYSTEMS-BASED PRACTICE

1. Partner with other team members to provide quality care.
2. Understand the roles of the various team members in the care of patients with liver disease.
3. Understand the liver transplant allocation system (MELD/PELD) and the role of the organ procurement organization.
4. Understand the contributions of various team members in the evaluation of a liver transplant recipient.
5. List the costs of common radiologic and laboratory tests for the evaluation of renal transplant problems
6. Demonstrate the appropriate use of clinical pathways.

Intern (PGY-1): Objectives

MEDICAL KNOWLEDGE

1. Describe the segments of the liver and normal biliary anatomy.
2. Describe common variants in extra hepatic biliary anatomy.
3. Describe the structures found within the portal triad.
4. Describe the complications of portal hypertension.
5. Describe the steps involved in the metabolism of bilirubin.
6. Describe how antigens are presented to the immune system and how it responds.
7. Explain how autoreactive t-cells are eliminated during development.
8. Explain the implications of common urologic symptoms following renal transplant (oliguria, anuria, dysuria, hematuria)
9. Explain the steps in preoperative preparation of patients for renal transplant.
10. List the various urethral catheters and their appropriate use.
11. Explain different categories of immunosuppressant medications and their common side effects.

PATIENT CARE

1. Explain the difference between induction and maintenance immunosuppression
2. List 3 drugs used for maintenance immunosuppression
3. List 3 drugs used for induction immunosuppression
4. List 2 drugs used for the treatment of rejection
5. List the most common side effect for each of these drugs in 2, 3, and 4 above
6. Explain the significance of viral hepatitis serologies
7. Describe current treatments for hepatitis A, B and C
8. Describe the differences between biliary atresia, primary sclerosing cholangitis and primary biliary cirrhosis
9. Describe the medical and surgical options for controlling ascites
10. Describe the medical and surgical options for controlling hepatic encephalopathy
11. Describe the medical and surgical options for controlling variceal hemorrhage
12. List the common etiologies for acute liver failure
13. Describe the key differences between acute and chronic liver disease
14. Describe the treatment options for cholangiocarcinoma
15. Describe the treatment options for hepatocellular carcinoma
16. Interpret the various common laboratory abnormalities encountered in liver transplantation
17. Choose and interpret the radiological studies employed in liver transplantation
Technical:
18. Perform paracentesis with assistance
19. Perform central line placement with assistance
20. Perform arterial line placement with assistance
21. Perform Swan-Gantz line placement with assistance
22. Demonstrate ability to gather accurate and complete history and patient examination, including the male genitourinary exam.
23. Demonstrate ability to manage routine pre- and post-operative surgical patients.
24. Demonstrate the proper use of sterile technique when performing or assisting with operative procedures.
25. Demonstrate competence in performing selected urologic procedures such as routine and difficult urethral catheterizations.
26. Demonstrate ability to perform a subcuticular skin closure.

PRACTICE-BASED LEARNING

1. Prepare a literature review based update to the transplant team on a urology or transplant topic related to a patient seen in clinic or in the hospital.
2. Prepare a presentation to the transplant team on a topic relevant to the care of the liver transplant patient.

INTERPERSONAL AND COMMUNICATION SKILLS

1. Present data in a well-organized fashion on attending rounds and in the clinic.
2. Respond promptly to pages from nurses and staff.
3. Demonstrate the ability to effectively obtain informed consent from a patient and address any questions or concerns of the patient and their family.

PROFESSIONALISM

1. Demonstrate integrity and honesty.
2. Demonstrate professional dress and behavior at all times.
3. Consistently be prompt to rounds, conferences, clinic, and the operating room.

SYSTEMS-BASED PRACTICE

1. List the costs of common radiologic and laboratory tests for the evaluation of renal transplant problems
2. Demonstrate the appropriate use of clinical pathways.
3. Discuss the criteria for organ donation, including brain death, the DCD donor, and contraindications to donation.

PGY-3 or PGY-4: Goals

MEDICAL KNOWLEDGE

1. Understand the normal anatomy and physiology of the liver and bile ducts.
2. Understand the pathophysiology of cirrhosis, ascites and portal hypertension.
3. Understand the concepts of antigen presentation and allorecognition.
4. Understand the ontogeny of the immune system including positive and negative selection.
5. Understand cell mediated and humoral immunity particularly as they pertain to rejection.
6. Understand both clinical and pathologic staging of liver cancer as well as cancers of the biliary tract.
7. Know the options for anastomosis of the renal transplant.
8. Know the side effects of common immunosuppressive medications.
9. Know the complications of common immunosuppressive medications.
10. Know the surgical complications of renal transplantation.

PATIENT CARE

1. Understand the diagnosis and treatment of acute liver failure.
2. Understand the diagnosis and treatment of chronic liver failure.
3. Understand the medical and surgical treatments of portal hypertension.
4. Understand the indications for liver transplantation.
5. Understand the various techniques used in liver transplantation.
6. Understand the diagnosis and management of complications in liver transplantation
7. Understand the diagnosis and management of complications in biliary tract surgery
8. Understand the multidisciplinary approach to the treatment of hepatic malignancy
9. Understand the management of the pre- and post operative liver transplant patient in the ICU setting
10. Understand how modern immunosuppressive drugs are used in liver transplantation and know their common side effects
11. Understand the infectious disease problems related to liver transplantation.
12. Understand the metabolic problems related to liver transplantation.
13. Understand and utilize the various laboratory assays used to monitor liver transplant patients and their immunosuppression protocols.
14. Understand MELD scoring system and how it applies to organ allocation; and the role of the organ procurement organization in this process.
15. Understand the basic principles of pre-operative evaluation and post-operative care associated with liver transplantation and major liver operations.
16. Know the development of the extraperitoneal spaces.
17. Be able to assess the suitability of the Iliac vessels for transplantation intraoperatively.
18. Be able to perform vascular suturing with assistance during anastomosis of the renal allograft.
19. Be able to reflect the colon laparoscopically during hand assisted laparoscopic donor nephrectomy.
20. Be able to demonstrate the ability to postoperatively manage renal transplant recipients and donors.

PRACTICE-BASED LEARNING

1. Understand and review the literature to improve and enhance patient care
2. Know how to prepare a literature search and present to the renal transplant team the relevant medical literature regarding a complication in a renal transplant patient and develop a plan to prevent this complication in the future.

INTERPERSONAL AND COMMUNICATION SKILLS

1. Effectively communicate with others on the transplant team in a leadership role
2. Communicate effectively and compassionately with patients, family members, multidisciplinary team members, ancillary services and primary providers.
3. Understand effective collaboration with interns in making decisions about findings on physical examination and management of pre and post-operative care.
4. Understand effective collaboration with other residents, faculty and other health professionals, as part of the multidisciplinary team managing end-stage renal failure patients.

PROFESSIONALISM

1. Learn and practice the ethical principles required for proper caring for the surgical population including justice, confidentiality, and the provision of informed consent.
2. Learning empathy and sensitivity, especially with respect to various social and cultural contexts.
3. Understand integrity and honesty.
4. Understand professional dress and behavior at all times.
5. Understand ethical behaviors in his/her daily interactions with peers, faculty, patients, and staff.
6. Understand the importance of consistently being prompt to clinics, rounds, and the operating room.

SYSTEMS-BASED PRACTICE

1. Understand liver transplant allocation and the role of the organ procurement organization
2. Understand the contributions of team members in the evaluation of a liver transplant recipient
3. Partner with other team members to provide quality care.
4. Understand the roles of the various team members in the care of patients with liver disease.
5. Understand the liver transplant allocation system (MELD/PELD) and the role of the organ procurement organization.
6. Understand the contributions of various team members in the evaluation of a liver transplant recipient.
7. Understand the cost benefit analysis of renal transplantation vs. dialysis
8. Understand the appropriate use of clinical pathways.

PGY-3 or PGY-4: Objectives

MEDICAL KNOWLEDGE

1. Describe the segments of the liver and normal biliary anatomy
2. Describe the classification of choledochal cysts
3. Describe the Bismuth classification
4. Describe the features of acute liver rejection
5. Describe the structures found within the portal triad
6. Describe the complications of portal hypertension
7. Describe the steps involved in the metabolism of bilirubin
8. Describe how antigens are presented to the immune system and how it responds
9. Explain how autoreactive t-cells are eliminated during development
10. List the options for anastomosis of the renal transplant.
11. List the side effects of common immunosuppressive medications.
12. List the complications of common immunosuppressive medications.
13. Describe the surgical complications of renal transplantation.

PATIENT CARE

1. Describe the appropriate work up for a liver transplant recipient with abnormal liver function
2. Describe the work up for a liver transplant recipient with low urine output
3. Describe the work up for a liver transplant recipient with an altered mental status
4. Discuss the proper interpretation of the Swan-Ganz catheter
5. Discuss 3 modes of mechanical ventilation
6. Describe several operative therapies for portal hypertension and potential consequences
7. Participate in the initial evaluation, work up and presentation of a liver transplant recipient
8. Describe the techniques of liver transplantation
9. Describe the techniques of hepatic resection
10. Interpret the various common laboratory abnormalities encountered in liver transplantation
11. Choose and interpret the radiological studies employed in liver transplantation
12. Technical:
 - Actively participate in liver transplant surgery
 - Demonstrate techniques for liver mobilization, and hepatic jujunal 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.
13. Demonstrate the development of the extraperitoneal spaces.
14. Demonstrate the ability to assess the suitability of the Iliac vessels for transplantation intraoperatively.
15. Demonstrate the ability to perform vascular suturing with assistance during anastomosis of the renal allograft.
16. Demonstrate the ability to reflect the colon laparoscopically during hand assisted laparoscopic donor nephrectomy.
17. Demonstrate the ability to postoperatively manage renal transplant recipients and donors.

PRACTICE-BASED LEARNING

1. Identify appropriate resources and modify practice
2. Prepare a literature search and present to the renal transplant team the relevant medical literature regarding a complication in a renal transplant patient and develop a plan to prevent this complication in the future.

INTERPERSONAL AND COMMUNICATION SKILLS

1. Actively assume leadership role on team
2. Demonstrate effective collaboration with interns in making decisions about findings on physical examination and management of pre and post-operative care.
3. Demonstrate effective collaboration with other residents, faculty and other health professionals, as part of the multidisciplinary team managing end-stage renal failure patients.

PROFESSIONALISM

1. Demonstrate integrity and honesty.
2. Demonstrate professional dress and behavior at all times.
3. Consistently demonstrate ethical behaviors in his/her daily interactions with peers, faculty, patients, and staff.
4. Consistently be prompt to clinics, rounds, and the operating room.

SYSTEMS-BASED PRACTICE

1. Attend an OPO case review meeting
2. Actively participate in multidisciplinary meetings
3. Describe the cost benefit analysis of renal transplantation vs. dialysis
4. Demonstrate appropriate use of clinical pathways.