

Fellowship in Abdominal Organ Transplantation

Eligibility

Post MD/DNB/MCh any other equivalent degree recognized by MCI in General Surgery or Surgical Gastroenterology.

Duration

3 year (36 months)

Intake

2 students per year

Process for Fellowship Course

Advertisement in newspaper in month of June inviting application followed by interview.

Proposed Fees

Rs. 50,000/-

Curriculum

Abdominal Organ Transplantation

- Proposed course and curriculum for MCh in Abdominal Organ Transplantation

Section-1: History of Clinical Organ Transplantation

Section-2: Transplantation Biology

Immunology:

- Physiologic immunity
- Transplant antigens: HLA
- Transplant antigen biology
- Cellular Mechanism of Adaptive Immunity
- Humoral Mechanisms of Adaptive Immunity
- Innate Immunity
- Mechanisms of Immune Regulation
- The spectrum of alloimmunity, heterologous immunity, and relevant autoimmunity

- Fundamental concept regarding graft injury and regeneration: tissue injury, tissue quality, and recipient factors
- Mechanism of allograft tolerance
- Xenoimmunity

Experimental Transplantation

- In vitro models of alloreactivity
- Small animal models of transplantation
- Large animal models of transplantation
- Advancing transplantation in Silico: Studying global gene expression using functional genomics for transplantation research

Mechanisms of immune modulation

- Current pathways for immune manipulation
- Future pathways for immune manipulation

Section 3: Organ Procurement

Organ procurement and allocation

- Administration of organ procurement and allocation
- Deceased donor management

Technique for organ procurement

- Technique for organ procurement after brain death
- Technique for organ procurement after circulatory death
- Technique for living donor kidney procurement
- Techniques for living donor liver procurement

Organ Preservation and resuscitation

- Abdominal organ preservation and resuscitation
- Thoracic organ preservation and resuscitation
- Kidney paired donation networks

Section 4: Pre-operative management of transplant patients

Patient selection and indications for organ transplantation

- Patient selection and indications for kidney transplantation
- Patient selection and indications for liver transplantation
- Patient selection and indications for pancreas and islet transplantation
- Patient selection and indications for intestinal and multivisceral organ transplantation
- Role of primary care provider in the referral and care of abdominal organ Transplant patients

The Histocompatibility lab

- Alloantibodies, sensitization and virtual cross matching

Waiting list management

- Waiting list management for kidney transplantation
- Waiting list management for liver transplantation
- Waiting list management for pancreas and islet transplantation
- Waiting list management for intestinal and multivisceral transplantation

Intensive care in End Organ Failure

- Intensive care in hepatic failure
- Intensive care in cardio-pulmonary failure

Artificial organs and assist devices

- Dialysis
- The artificial liver: in vivo tissue engineering and organ printing
- The artificial pancreas
- Tissue and organ bioengineering

Organ acceptance and risk management assessment

- Organ assessment and acceptance for standard and expanded criteria donors
- Organ assessment and acceptance for donation after circulatory death donors

Section 5: Transplant procedure and surgical technique

- Kidney transplantation procedure and surgical technique
- Liver transplantation procedure and surgical technique

- Living donor liver transplantation procedure and surgical technique
- Pancreas transplantation procedure and surgical technique
- Islet cell transplantation and surgical technique
- Intestinal transplantation procedure and surgical technique
- Multivisceral transplantation procedure and surgical technique
- Vascularized composite allograft transplantation

Section 6: Post-transplant management

Immunosuppressive therapy

- Induction immunosuppressive therapy
- Maintenance immunosuppressive therapy
- Rescue immunosuppressive therapy
- Desensitization protocols for organ transplantation

Clinical allograft rejection syndromes: Diagnosis and management

- Clinical allograft rejection syndromes in kidney transplantation
- Clinical allograft rejection syndromes in liver transplantation
- Clinical allograft rejection syndromes in pancreas and islet transplantation
- Clinical allograft rejection syndromes in intestinal transplantation
- Clinical allograft rejection syndromes in vascularized composite Allotransplantation
- Clinical transplantation and tolerance

Clinical recurrent disease: Diagnosis and management

- Recurrent disease after kidney and pancreas transplantation
- Recurrent disease after liver transplantation

Histopathological syndromes of graft rejection and recurrent disease

- Histopathological syndromes of kidney allograft rejection and recurrent Disease
- Histopathological syndromes of liver allograft rejection and recurrent Disease

- Histopathological syndromes of pancreas and islet allograft rejection and Recurrent diseases
- Histopathological syndromes of intestinal allograft rejection and recurrent disease
- Histopathological syndromes of vascularized composite allograft rejection And recurrent disease

Post-operative monitoring

- Cardiovascular disease and preventive healthcare
- Monitoring for HLA antibody after organ transplantation
- Biomarkers and alloimmune monitoring after organ transplantation
- Protective immune competence after organ transplantation

Transplant Infectious diseases

- Donor derived infections after organ transplantation
- Perioperative infections after organ transplantation
- Late infectious disease after organ transplantation

Malignancy after transplantation

- General malignancy after organ transplantation
- Post-transplant lymphoproliferative disorders

Pregnancy and contraception in transplantation

The Transplant Pharmacopeia

- Drug specifically approved for transplant indications
- Infectious disease prophylaxis after organ transplantation
- Metabolic and endocrine management of the organ transplant recipient
- Off-label use of immunosuppressive agents in solid organ transplantation
- Drug interactions in organ transplantation

Section 7: Long-term transplant outcomes

- Long-term outcomes after kidney transplantation
- Long-term outcomes after liver transplantation
- Long-term outcomes after pancreas transplantation

- Long-term outcomes after islet transplantation
- Long-term outcomes after intestinal and multi-visceral transplantation
- Long-term outcomes after vascularized composite allograft transplantation

Section 8: Pediatric transplant

- An introduction to pediatric organ transplantation
- Developmental immunity: from birth to adult
- Pediatric kidney transplantation
- Pediatric liver transplantation
- Pediatric intestinal and multivisceral organ transplantation

Specific paediatric considerations

- Growth and development after organ transplantation
- Cognitive development and functional outcomes after organ transplantation
- Nonadherence, psychosocial adaptation and its effects in pediatric Transplantation
- Management of the organ transplant recipient in the transition from pediatric To adult care

Section 9: Transplant administration

- Transplant coordination
- Transplant pharmacy services
- Inpatient transplant unit management
- Transplant clinical management
- Transplant centre management and leadership- a case for structured Intrapreneurship
- Transplant quality programs
- National and international transplant management and oversight

Section 10: Clinical trials and data management

- Building and sustaining a local transplant data management program
- National transplant data registries and population studies

- Clinical research methods and analysis in solid organ transplantation
- Comparative effectiveness in transplantation

Section 11: Transplant Policy

Transplant Ethics

- Transplant ethics for clinicians
- The ethics of organ allocation
- The ethics of living donation
- Cultural variations in organ transplantation

Economic and societal impact of transplantation and transplant policy

- Government and private insurance coverage for organ transplantation
- Drug development in solid organ transplantation and the approval process
For transplant immunosuppressants
- Organ specific benefits of transplantation: outcomes and economics
- National healthcare policy, transplant-specific statutes, and the future of organ Transplantation

Reference books:

- 1 Textbook of organ transplantation. Edited by Allan D. Kirk, Stuart J. Knechtle, Christian P. Larsen, Jorden C. Madsen, Thomas C. Pearson and Steven A. Webber. Publisher: Wiley Blackwell, First edition: 2014
- 2 Abdominal organ retrieval and transplantation bench surgery. Edited by Gabriel C Oniscu, Hohn L. Forsythe, John Fung. Publisher: John Wiley and Sons, Ltd; 2013
- 3 Abdominal solid organ transplantation: Immunology, indications, techniques and early complications. Edited by Antonio D. Pinna and Giorgio Ercolani

Teaching scheme:

Lecture: once a week

Seminars and journal clubs: once a week. Student is expected to present 1 seminar and 1 journal clubs per month.

Clinical Case discussions: once a week. Student is expected to present & discuss 6 clinical cases in a year.

CPC (Clinico - Pathological - Correlation) meetings: once a month. The attendance in this meeting is compulsory.

Ward rounds and postings:

Student will rotate through the postings in General ward, dialysis unit, Intensive Care Unit and kidney transplant ward, liver transplant ward. Each student will take ward rounds every day and take care of the patients admitted under the concerned section allocated to him.

OPD patient care:

Each student will attend three General OPDs and three liver transplant OPD per week.

Procedures:

All fellows are expected to complete the required curriculum modules to complement their clinical activities. The fellowship program will emphasize the following clinical aspects of organ transplantation.

Organ Procurement:

- Donation after brain death
- Donation after cardiac death
- Laparoscopic living donor nephrectomy
- Living donor hepatectomy
- Back table organ preparation with or without complex reconstruction
- Donor/recipient matching

Organ Transplantation (Adult and Paediatric Recipients):

- Kidney transplant (deceased and living donor)
- Laparoscopic kidney transplantation
- Robotic assisted laparoscopic kidney transplantation
- Liver transplant (deceased and living donor)
- Pancreas transplant

Non-Transplant Operations:

- Vascular dialysis access (fistula and grafts)
- Peritoneal dialysis access (open and laparoscopic)
- Complex hepatobiliary surgery (pre- and post- transplant patients)
- General surgery (pre- and post-transplant patients)

Post-Operative Management:

- Immunosuppression (for induction, maintenance or rejection)
- Infectious disease prophylaxis and complications

- Post-transplant medical and surgical complications

Fellows will obtain additional proficiency in the areas of outpatient clinic management, selection conference, histocompatibility and cross matching, and transplant pathology.

Examination:

Eligibility: 80% attendance is compulsory

Log Book: Each student will maintain logbook of the procedures performed, lectures, Seminars, journal clubs, Clinical Case discussions and CPC attended and presented by him and get it signed before appearing in examination.

Scheme: Theory and practical examination will be concluded within 15 days of the end of the course.

Theory

- Papers of 100 marks each.
- First paper will include basic science: Anatomy, physiology, immunology, pharmacology, Microbiology, pathology
- Second paper: Transplantation Surgery, intensive care, rehabilitation, immunosuppressants, intervention radiology, hepatology, nephrology, diabetology
- Third paper: Research methodology, Transplant infectious diseases, brain death, circulatory death, laws
- Passing percentage is 50%.

Practical

- Two clinical cases of 50 marks each
- Five problem oriented spots of 10 marks each.
- Viva of 50 marks.
- Passing percentage is 50%.

Each examination will have one internal and one external examiner.

Announcement of results:

Results will be announced within one week of the conclusion of the examination. The result will be only "Fellowship granted / denied " and marks will not be displayed. Repeats will be at the end of no earlier than 3 -6 months.

Award of Certificate:

Certificate will be awarded by the GUTS.