

# 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 pediatric 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 center 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 Pediatric 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 crossmatching, 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.

**APPLICATION FORM FOR FELLOWSHIP COURSE**

**Name:**

**Birth date:**

**Nationality:**

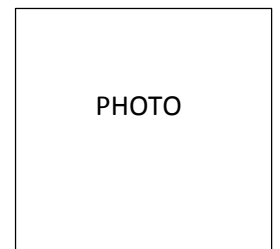
**Religion:**

**Marital status:**

**Name of specialty for which applied:**

**Educational Qualifications:**

Examination Passed	Subject	Year of passing	Name of Institution	Name of University



**Previous experience:**

Post held	From	To	Total period	Employer's address

**Special achievements:**

Details of prizes, Medals, Scholarships & National/ International Awards and Additional Qualification such as membership of scientific society etc.

**No. of papers published :** National  
International

**Registration with Central/State Medical Council:**  
Registration Number:

**Permenant address:**

**Correspondence Address**

Mobile: \_\_\_\_\_

**E mail:** \_\_\_\_\_

**Preferred mode of communication:** Correspondence Address/ e mail/ mobile

I hereby declare that I am an Indian National and all statements made in this application are true, complete and correct to the best of my knowledge.

Date: \_\_\_\_\_

Place: \_\_\_\_\_

Signature of the applicant

**Enclosures**

1. Proof of Birth date
2. PG qualification certificate
3. Experience certificate of previous appointments
4. Proof of special achievements and papers published
5. Copy of registration with central/state medical council
6. No Objection Certificate from present employer/ Head of the dept./ Head of institute if applicable
7. References from 2 faculty members with more than 10 years' experience