

**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY,
69, ANNA SALAI, GUINDY, CHENNAI – 600 032.**



Regulations, Syllabus & Guidelines

FOR

POST – DOCTORAL FELLOWSHIP PROGRAMME

IN

LIVER TRANSPLANT AND HEPATOBILIARY ANAESTHESIA

AS APPROVED IN 49TH SAB HELD ON 07.01.2015

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The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

REGULATIONS FOR

POST – DOCTORAL FELLOWSHIP PROGRAMMES IN LIVER TRANSPLANT AND HEPATOBILIARY ANAESTHESIA

1. PREAMBLE :

In exercise of the powers conferred by Section 44 of the Tamil Nadu Dr. M.G.R. Medical University, Chennai Act 1987 (Tamil Nadu Act 37 of 1987) the Standing Academic Board of the Tamil Nadu Dr. M.G.R. Medical University, Chennai hereby makes the following Regulations for Post – Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia.

2. SHORT TITLE AND COMMENCEMENT :

The course shall be called as “POST-DOCTORAL FELLOWSHIP PROGRAMME IN LIVER TRANSPLANT AND HEPATOBILIARY ANAESTHESIA” of the Tamil Nadu Dr. MGR Medical University, Chennai.

This shall come into force from the academic year 2015 – 2016.

The regulations framed are subject to modification from time to time by the Standing Academic Board.

3. AIM AND OBJECTIVES :

Keeping in view the explosion of knowledge in modern medicine, the University introduces a series of Post – Doctoral Fellowship Programmes in different disciplines (speciality or sub – speciality), wherein suitable candidates will be imparted training in the concerned area.

These Post – Doctoral Fellowship Programmes aims that the candidate gets exposure in the concerned disciplines with particular emphasis on their clinical skills. The course is meant to give intensive hands – on clinical training with periodic evaluation by experienced teaching staff.

The Post –Doctoral Fellowship programmes offered by this University

cannot be equated with DM / M.Ch.

4. DURATION OF THE COURSE :

The Duration of the Courses is 1 year.

5. ELIGIBILITY FOR ADMISSION :

a. Candidates who have passed Medical Post Graduate degree Course recognized by the Medical Council of India are eligible to join in **POST-DOCTORAL FELLOWSHIP PROGRAMME IN LIVER TRANSPLANT AND HEPATOBILIARY ANAESTHESIA**. This includes M.D.(Anaes.) /DNB (Anaes) One year Post – PG experience is not required for admission to this course.

b. The Ph.D. in the concerned speciality is not considered to be eligible to apply for the Post – Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia.

c. Candidates who have obtained P.G. degree from any recognized University, within India, but outside the state of Tamil Nadu will have to produce Migration Certificate from their qualifying University. No Objection Certificate issued by the National Board of Examinations, New Delhi, is equivalent to Migration Certificate.

d. The candidates shall obtain Eligibility Certificate before the cut off date for admission in that particular Academic year.

6. ELIGIBILITY CRITERIA :

M.D.(Anaes.) /DNB (Anaes) candidates are eligible for the Post – Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia.

7. AGE :

No upper Age limit fixed for admission to Post – Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia.

8. ELIGIBILITY CERTIFICATE :

Candidates who have passed the qualifying examination as stated in Regulation No.6 above other than the Tamil Nadu Dr. M.G.R. Medical

University, Chennai shall obtain an “Eligibility Certificate” from this University by remitting the prescribed fees along with the application form and required documents before seeking admission in any one of the affiliated Medical Institutions. The application form is available in the University website: www.tnmgrmu.ac.in.

9. MIGRATION CERTIFICATE :

On completion of Post Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia, Migration Certificate will not be issued.

10. CONDONATION OF BREAK OF STUDY :

The Break of Study for a period of less than 90 days can be condoned by the Course Director and the Break of Study for the period of more than 90 days and less than one year is to be condoned by the University authorities. The application form is available in the University website: www.tnmgrmu.ac.in.

11. RE-ADMISSION OF THE BREAK OF STUDY :

1. The course shall be completed within the period of double the duration from the date of admission.
2. The Regulation for Re-admission are as per the University's common Regulation for Re-admission.

12. NO. OF ATTEMPTS ALLOWED FOR EXAMINATION:

The candidates of 1 year Post Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia, shall be allowed for a maximum of three attempts within a period of two years including the first appearance.

13. ADMISSION :

The admission for the Post – Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia is twice in a year (i.e.,) 1st January and 1st July.

(a) Admission upto 31st January – 28th February is the last

date

for Registration.

(b) Admission upto 31 st July
date for

31st August is the last
Registration.

An Institution can admit max. Two (2) students per year for Post-Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia. i.e either in January / July sessions or 1 candidate for each session (January or July). However, the total number of candidates per institution per course shall not exceed Two (2) per year.

14. SELECTION OF CANDIDATES :

The candidates for the Post-Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia., can be selected by the centers on their own and the selection to be transparent.

- a. The candidates selected by the Institutions will become bonafide student of this University only after registration.
- b. The Post-Doctoral Fellowship Programmes of the Affiliated Institutions will be published in the University website.

15. COMMENCEMENT OF THE COURSE :

The one / two years Post - Doctoral Fellowship Programmes will commence on 1st January & 1st July of every year and the candidates are expected to get registered with this University within 30 days of their selection by the Affiliated Institutions. (i.e. 28th February & 31st August).

16. CURRICULUM :

The Regulation, Guidelines, Curriculum and the Syllabus for the Post Doctoral Fellowship Programmes is prescribed in these regulations are subject to modification by the Standing Academic Board from time to time.

17. REGISTRATION :

A Candidate admitted into 'POST-DOCTORAL FELLOWSHIP PROGRAMME IN LIVER TRANSPLANT AND HEPATOBILIARY ANAESTHESIA' under any one of the affiliated institutions of this University shall register his / her name with this University by submitting the prescribed application form for registration

duly filled in, along with the prescribed fee and a declaration in the format to the Controller of Examination of this University through the affiliated institution within 30 days from the cut-off date prescribed for admission. The application should have the date of admission of the course.

18. SCHEME OF EXAMINATION :

Commencement of examination for the Post Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia is on any day within the calendar month of January / July. The examination will be conducted with one internal Examiner i.e. the Course Director who is the Convener of the examination and Two External Examiner of which One from Government & One from Private Institution. The maximum age limit for the examiner is 70.

19. EXAMINATION PATTERN :

There is no theory examination for the Post Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia. The Institution must have periodical assessment on the performance of the students by maintaining a log book.

20. ATTENDANCE :

90% attendance is mandatory to become eligible for the examination and will be certified by the Course Director.

21. MINIMUM / MAXIMUM MARKS FOR PRACTICAL / CLINICAL / ORAL & INTERNAL ASSESSMENT :

The Examination pattern is as follows :

Exam	Maximum	Minimum
Practical	100	50

Orals / Viva	100	50
Internal Assessment	100	50
Log Book	50	25

The log book will be assessed by Examiners during the Clinical Examination. Projects presentation is mandatory and 25% of IA is for the project.

22. EXAMINATION :

There is No Theory Examination. Only Clinical Examination & Viva will be conducted.

A candidate who undergoes the Post-Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia shall satisfy the required eligibility criteria to appear for the Examination.

23. CLINICAL EXAMINATION HOURS :

The Clinical Examination will be conducted between 9 a.m. to 5.00 p.m.

24. PRACTICAL EXAMINATION :

Minimum 10 and Maximum 20 OSCE Stations will be given for examination (Objective Structured Clinical Examination).

Internal Assessment marks and attendance are to be submitted to the University one month before the Examination.

25. EXAMINATION CENTRE :

In case of more than one Centre conducting the same Course, the Examination Centre will be decided by the Controller of Examinations of this University and the Course Director of the Centre will be the Convener of the examination.

26. STIPEND :

The University will not give any stipend to the candidates admitted for Post-Doctoral Fellowship Programme in Liver Transplant and Hepatobiliary Anaesthesia, and the University will not interfere, if the private institutions are willing to give a stipend to the candidates admitted under them.

27. LOG BOOK :

The Log Book shall be verified by the Course Director periodically and should be submitted to the examiners at the time of examination for evaluation and only the marks to be sent to the University for result processing.

Submission of Log Book is compulsory to appear for University examination.

If the examiners suggest minor corrections and resubmission of the Log Book, the results of the candidates shall be with held and the Log Book shall be resubmitted by the candidate within three months. The Log Book shall be revalued by the same set of examiners and after getting approval, the results of the candidate shall be published.

28. Project :

Project should be submitted at the end of the year and it carries 25% of marks in the internal Assessment.

29. PROGRAMME DIRECTOR :

Must have 15 years of work experience with a teaching experience of 10 years and must possess Diploma / Fellowship / Ph.D. in the concerned field.

Programme Director should be responsible for

1. Journal Club
2. C.M.E. Programmes.
3. Internal Assessment
4. Hands on Training
5. Knowledge about complications.

30. VACATION :

There is no vacation.

Syllabus

Liver Transplant and Hepatobiliary Anaesthesia

Liver anaesthesiology is a highly specialized and a demanding specialty where good clinical knowledge, evidence based practices and technical skills should all be integrated to achieve better outcomes.

The curriculum will comprise of two major divisions:

1. Common core curriculum in transplantation medicine
2. Basic and advanced clinical and scientific curriculum in anaesthesiology for HPB surgeries and liver transplantation

We propose to cover the curriculum in the form of organized lectures, bedside teaching and teaching whilst in theatres and other interactive sessions. The syllabus for the entire program is broadly outlined below. This list is only a general overview of the subject areas which will be covered but is not limited and will be expanded to include emerging topics of interest.

Anatomy of the liver

- Liver and the portal system - includes segmental anatomy
- Splanchnic Circulation

Physiology, Pharmacology and Pathophysiology

- Hepatic physiology, functions and role in metabolism
- Blood supply of liver and the regulatory systems
- Drug handling by the liver
- Functional reserve of the liver - measurement
- End stage liver disease and clinical manifestations - an overview
- Cardiovascular system in cirrhosis
- Lung and the liver - pulmonary manifestations in liver disease
- The autonomic nervous system - physiology and pharmacology

- Kidneys in liver disease - physiology and pathology
- Neurological Issues - Hepatic encephalopathy
- Acid -base equilibrium
- Coagulation system - changes in liver disease
- Hypothermia and perioperative temperature control
- Physiology of liver resection and regeneration
- Interpretation of liver function tests
- Basics of transplant immunology
- Immunosuppression - basics and commonly used drugs - doses, monitoring and adverse effects
- Commonly used drugs in patients with end stage liver disease
- Commonly used antibacterial, antiviral and antifungal drugs

Biochemistry

- Mechanisms of Cell Death (Apoptosis and Necrosis)
- Biochemical basis of ischemia reperfusion injury
- Reperfusion injury
- Antioxidant biochemistry
- Promising treatment modalities for reperfusion injury

Clinical sciences

- History and evolution of liver transplantation
- Concept of living donor transplantation
- Organ procurement and donation – basics
- Anaesthesia for retrieval in cadaveric transplantation
- Maintaining brain dead donor - optimization
- Portal hypertension – Etiology, pathophysiology, complications, diagnosis, and portosystemic decompression treatments and outcome
- Medical management of portal hypertension and ascites

- Basic knowledge of functional liver diseases, parenchymal diseases and vascular abnormalities like Budd - Chiari syndrome
- Pathophysiological aspects of surgery in the cirrhotic patient
- Indications, contraindications and outcomes of liver transplantation - an overview
- Anesthesia for patients with hepatocellular disease - Risk assessment and perioperative management
- Anaesthesia for major liver resections - Risk assessment and perioperative management
- Preoperative assessment of a liver transplant recipient
- Anaesthesia for liver transplantation in adults - preoperative evaluation and perioperative management
- Anaesthesia for liver transplantation in children - preoperative evaluation and perioperative management
- Reperfusion syndrome in clinical liver transplantation
- Transfusion medicine
- Hemodynamic monitoring - Invasive and Non-invasive hemodynamic monitoring
- Shock states; Cardiopulmonary resuscitation
- Cardiac emergencies and their management
- Intensive care management of the liver transplant patient
- Infectious diseases and transplantation

Specialized training in each of the following areas

- Advanced cardiac life support
- Central venous catheterization (femoral, internal jugular and subclavian veins) - Ultrasound guided vascular access

- Right heart catheterization (pulmonary artery catheter placement)
- Arterial line placement (radial and femoral)
- Management of the difficult airway
- Transesophageal echocardiography (TEE)
- Arterial blood gas analysis and interpretation
- Use of Cell Saver and Rapid Infusion System
- Plasmapheresis
- Other liver support devices and implications
- Work up of patients for transplantation – Preoperative Evaluation, discussion in the multidisciplinary listing meeting
- Coagulation monitoring including Thromboelastogram (TEG), ROTEM and Sonoclot
- Cardiac output monitoring - PiCCO, TOE, Swan-Ganz
- Anaesthesia for endoscopic procedures in cirrhotic patients and for other procedures done by interventional radiology
- Anaesthetic management of
 - Living donor liver transplantation (LDLT)
 - Deceased donor liver transplantation (DDLT)
 - Acute liver failure presenting for liver transplantation
 - Split liver transplantation
 - Auxiliary liver transplantation
 - Paediatric liver transplantation
 - Donor Hepatectomy
 - Liver resections - including complex resections with vascular reconstruction
 - Hepaticojejunostomy
 - Whipples procedure

- Portosystemic shunt operations
- All other Hepatobiliary cases (both adults and children)
- Biliary atresia - Anaesthetic management

Intensive care management of patients undergoing liver related surgeries

- Understanding and recognizing complications related to liver transplantation and HPB surgeries
- Mechanical ventilation
- Cardiac output monitoring
- Intracranial pressure monitoring
- Renal replacement therapy
- ICU care bundles
- Tracheostomy
- Echocardiography in ICU

MODULES :

Theatres (Liver Theatres) – 9 months

Includes pre anaesthetic clinic

Liver intensive care – 3 months.