

COURSE CURRICULUM, FOR DM (HEPATOLOGY)

To train postgraduates in clinical, molecular, intensive care and transplant Hepatology so that they will be able to understand the subject better and diagnose, investigate and treat independently all types of hepatobiliary disorders, thus improving patient care.

The candidates would also be trained for the following:

- Understand ethical issues in human and animal research
- Perform independently a research project and publish a scientific paper in an indexed journal
- Collect and analyze data on liver diseases
- Set up independent units of Hepatology in the country

Eligibility: MD Medicine or Pediatrics or equivalent postgraduate qualification recognized under IMC Act 1956.

Duration of Course: Three years

Time Schedule of postings

Joint Programmes with other departments

Students CPC	1 per week
Students clinical meeting	1 per week
Staff CPC	1 per week
Staff clinical meeting	1 per week
Death review meeting	1 per week
Radiology round	1 per week
Liver biopsy round	1 per week

Departmental

Teaching rounds	2 per week
Journal Club	1 per week
Seminar	1 per week
Bedside	1 per week

Proposed time to be spent by DM students in various sections

Department of Hepatology	20 months
Liver ICU	6 mo
Department of Gastroenterology	2 mo
Department of Radiology	1 mo
Department of Surgery	1 mo
Department of Experimental Medicine for molecular Hepatology	1 mo
Anesthesiology ICU	1 mo
Department of Virology	1 mo
Department of Histopathology	3 weeks
Department of Cytology	1 week
Liver Lab	2 mo

Patient service programme:

1. Indoor bed strength 15 (Male = 10, Female - 5)
2. Clinics: 5 Days / week Monday to Friday

Proposed training:

Inpatient services: The DM Candidate will work as part of the total liver service. He/She will look after the workup of admitted patients and take part in ward rounds by the assistant professor and professor. The candidate will supervise the activities of Junior Residents and undertake teaching of liver and biliary diseases to them. The candidate will perform all diagnostic procedures as enumerated below and attend to consultation calls and hepatic emergencies of other units.

Outpatient Clinics: The DM candidate will work in 5 days/week of out patient clinics.

Liver lab: Candidate would spend a minimum of 1 month each in liver lab, and 2 months in experimental medicine. The candidate would be given training in laboratory techniques including ELISA, PCR, RFLP and LFTs. Molecular Hepatology is the new thrust area in Hepatology. Candidates would associate themselves with the research work going on in the department.

Diagnostic Procedures:

1. UGI and lower GI Endoscopy, both diagnostic and therapeutic
 - Endoscopic sclerotherapy
 - Endoscopic variceal band ligation
 - Variceal glue injection
2. Side viewing Endoscopy (ERCP)
 - Biliary stenting or NBD drainage
 - Stone extraction
3. Ultrasound of liver and biliary tract
 - Hemodynamic studies with duplex Doppler
4. Invasive hemodynamics
5. Liver biopsies
 - Percutaneous
 - Transjugular
6. Intensive care management of liver patients
 - Subclavian and transjugular catheterization
 - Ventilator use
7. Pre and post Liver transplantation
 - Follow up

ASSESSMENT SYSTEM FOR DM HEPATOLOGY

The common assessment system for the DM course being followed by The Tamil Nadu Dr. M.G.R Medical University will also be followed for the DM (Hepatology)

Theory paper

Part I :

Paper1 Applied Basic Science of Liver and Biliary System including Pancreas 100 marks

Part II

Paper 2 Pediatric Hepatology 100 Marks

Paper 3 Practice of Hepatology and pancreatic diseases 100 marks

Paper 4 Recent advances in Hepatobiliary and Pancreatic systems 100 marks

Practical Examination

Components of Practical Examination

Long case	100
Short Cases (2x 50)	100
Ward Rounds (4x 25)	100
OSCE	50
Log Book	50
Viva voice	100

Dissertation	50
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Internal assessment	50
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Syllabus

- Structure of liver, pancreas and biliary system
- Functions of liver, pancreas and biliary system
- Pathology of liver, pancreas and biliary system
- Investigations of hepatobiliary diseases
- Basic immunology
- Molecular biology
- Epidemiology
- Cirrhosis
- Non cirrhotic portal hypertension
- Portal hypertension and GI bleeding
- Ascites and renal dysfunction in liver disease
- Hepatic encephalopathy
- Non parasitic cystic diseases
- Viral infection of liver (Acute and chronic viral hepatitis)
- Other infections of liver
- Immune disorders of liver
- Alcoholic liver disease
- Liver transplantation
- Non alcoholic fatty liver
- Drug induced liver injury
- Acute liver failure
- Inherited metabolic disorder
- Vascular disorders of liver
- Tumors of liver and bile duct
- Biliary tract disease
- Liver in diseases of other systems
- Effect of liver disease on other systems
- Pediatric liver disease
- Liver disease in elderly
- Liver disease in pregnancy
- Use of antiviral and immunosuppressive agents in treatment of liver disease
- Nutrition in liver disease
- Liver pathology
- Liver imaging
- Diseases of the pancreas
- Principles of experimental design, clinical biostatistics and epidemiology
- This syllabus would be regularly covered by didactic lectures, literature review and research seminars.

Practical

- Liver biopsy
 - Percutaneous
 - Transjugular
- Ascitic tap

- Upper GI endoscopy
 - Variceal band ligation
 - Variceal glue injection
 - Sclerotherapy of varices
- ERCP
 - Diagnostic
 - Nasobiliary drainage
 - Biliary stenting
 - Stone retrieval
- Lower GI endoscopy
 - Diagnostic, full length
 - Banding
 - Sclerotherapy of rectal varices
- Ultrasound
 - Imaging of liver and biliary tree
 - Doppler assessment of portovenous system
 - Guided abscess drainage
 - Percutaneous transhepatic biliary drainage

RECOMMENDED READING

Journals

1. Hepatology
2. Liver transplantation
3. Journal of Hepatology
4. Seminars in Liver Diseases
5. Liver Clinics of North America
6. Journal of viral hepatitis
7. Journal of Gastroenterology and Hepatology
8. Gastroenterology
9. Gut
10. Digestive Disease Sciences
11. GI Endoscopy
12. Endoscopy
13. Indian Journal of Gastroenterology
14. Tropical Gastroenterology
15. GE Clinics of North America
16. Lancet
17. NEJM
18. Journal of Clinical Nutrition
19. Journal of Critical Care Management
20. European Journal of Gastroenterology and Hepatology
21. Hepatogastroenterology

Textbooks in Hepatology

1. Zakim' s Textbook of Hepatology
2. Sheila Sherlock Textbook of Hepatology
3. Schiffs' Textbook of Hepatology
4. Oxford Textbook of Hepatology
5. Yamada's Textbook of Hepatology
6. Sleseingers Textbook of Gastroenterology
7. Bockus Textbook of Gastroenterology