PROGRAM
DM
GASTROENTEROLOGY

Contents

AIM:

Disorders of Gastrointestinal tract and hepatobiliary system constitute one of the major causes of morbidity and mortality in Kerala state. Based on this there is a necessity to provide physicians with all necessary skills towards acquisition of qualification in gastroenterology so that he can manage disorders with competence.

OBJECTIVES:

1.Train Gastroenterologist with adequate knowledge and skills to tackle efficiently with all disorders of gastrointestinal tract and hepatobiliary system

2.Train candidates to perform research and emphasize the research oriented approach to new problems

3.Graduate the students at an internationally accepted standard

4.Train them with value based attitude and medical ethics

5.Train candidates to realize the importance of team approach to medical problems

Specific Objectives:

1.To train them so that they require enough scientific knowledge in the gastrointestinal and hepatobiliary practice to make appropriate clinical decisions in the management of patients

2.Gain skills in diagnostic and therapeutic procedure in gastroenterology and hepatobiliary system

3.Acquire skills in organizing and conducting research projects.

4.Educate and update themselves and colleagues in gastroenterology.

5.Advice colleagues from other subspecialty in GE-related problems.

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Surface Anatomy
Segmental Anatomy
Variation in Surface Anatomy
Large Vessels of the Liver
Lymph Vessels

Nerve Supply
Biliary System
Microanatomy

Liver Physiology and Metabolic Function

Hepatic Architecture
Excretory Pathway
Introduction to Liver Metabolism
Carbohydrate Metabolism
Synthesis and Metabolism of Fatty Acids
Lipid Transport
Liver Disease and Lipid Abnormalities
Serum Proteins Synthesized by the Liver
Hepatic Regeneration
Apoptosis

Inherited Metabolic Disorders of the Liver

∝1-Antitrypsin Deficiency
Glycogen Storage Disease
Porphyrias
Tryosinemia
Urea Cycle Defects
Bile cid Biosynthesis Defects
Byler Syndrome
Cystic Fibrosis

Hereditary Hemochromatosis

Cause of Iron Overload

Pathophysiology
Clinical Manifestations
Diagnosis
Treatment and Prognosis
Family Screening

Wilson's Disease

Clinical Features
The Copper Pathway
The Basic Molecular Defect
Diagnosis
Pathology
Treatment
Prognosis

Biochemical Liver Tests

Biochemical Liver Tests
Characteristic Biochemical Patterns: Interpretation and Approach
Frequency Encountered Clinical Problems
Quantitative tests of Liver Function

Viral Hepatitis A Through G

Hepatitis A Virus
Hepatitis B Virus
Hepatitis C Virus
Hepatitis D Virus
Hepatitis E Virus
Hepatitis G Virus and the GB Agents

Liver Abscesses and Bacterial, Parasitic, Fungal and Granulomatous Liver Disease

Liver Abscess
Bacterial and Spirochetal Infections of the Liver
Parasitic Disease that Involve the Liver
Fungal Liver Disease
Granulomatous Liver Disease

Vascular Diseases of the Liver

Budd-Chiari Syndrome
Veno-Occlusive Disease
Portal Vein Thrombosis

Ischemic Hepatitis
Congestive Hepatopathy
Peliosis Hepatis
Hepatic Artery Aneurysm
Atherosclerosis
Polyarteries Nodosa
Polymyalgia Rheumatica

Alcoholic Liver Disease

Epidemiology
Ethanol Metabolism
Pathogenesis of Alcoholic Liver Injury
Cofactors Influencing the Development of Alcoholic Liver Disease
Diagnosis
Complications
Treatment
Prognosis

Nonalcoholic Steatohepatitis and Focal Fatty Liver

Nonalcoholic Steatohepatitis
Focal Fatty Liver

Liver Disease Caused by Drugs, Anesthetics and Toxins

Definitions and General Importance of Drugs and Toxins as Causes of Liver Disease
Epidemiology
Pathophysiology
Clinicppathologic Features of Drug-Induced Liver Disease
Prevention and Management
Dose-Dependent Hepatotoxicity
Drug-Induced Acute Hepatitis
Chronic Hepatitis
Liver Disease Caused by Anesthetic Agents and Diagnosis of Jaundice In the Postoperative Period
Drug-Induced Cholestasis
Chonic Cholestasis
Liver Disease Caused by Anesthetic Agents and Diagnosis of Jaundice

In the Ppostoperative Period
Drug-Induced Fibrosis and Cirrhosis
Vascular Toxicity
Liver Tumors
Nonproprietary Medications and Environmental Agents

Pregnancy Related Hepatic and Gastrointestinal Disorders

Liver Problems Unique to Pregnancy
Liver Problems Complicating Pregnancy
Gastrointestinal Problems

Autoimmune Hepatitis

Diagnostic Criteria
Pathogenesis
Sub classifications
Variant Forms
Prevalence
Prognostic Indices
Clinical Manifestations
Treatment
Treatment Results
Future Directions

Primary Biliary Cirrhosis

Epidemiology
Pathogenesis
Clinical Features
Diagnosis
Differential Diagnosis
Associated Diseases
Complications
Management Natural History and Prognosis

Portal Hypertension and Gastrointestinal Bleeding

Etiology and Pathophysiology of Portal Hypertension

- Anatomic Sites of Collateral Formation and Bleeding
- Natural History and Prognosis of Variceal Hemorrhage
- Diagnosis
- Management

Ascites and Spontaneous Bacterial Peritonitis

- Pathogenesis of Ascites Formation
- Clinical Features of Ascites
- Complications of Ascites
- Treatment of Ascites
- Summary of Treatment in Cirrhotic Ascites
- Prognosis

Systemic Complications of Liver Disease

- Hepatic Encephalopathy
- Pulmonary Syndromes
- Hepatorenal Syndromes
- Endocrine Dysfunction
- Coagulation Disorder

Fulminant Hepatic Failure

- Definition
- Causes
- Clinical Presentation
- Differential Diagnosis
- Predictors of Outcome
- Management

Hepatic Tumors and Cysts

- Hepatic Tumors
- Tumor-Like Lesion
- Hepatic Cysts
- Approach to the Patient With Hepatic Mass Lesions

Hepatic Manifestations of Systemic Disease and Other Disorders of the Liver

Hematologic Malignancies
Hepatic Sarcoidosis
Hepatic Amyloidosis
Sickle Cell Disease Involving the Liver
Hepatic Dysfunction During Systemic Infection
Postoperative Chloestasis
Liver Abnormalities in Rheumatoid Arthritis
Nodular Disorders of the Liver

Liver Transplantation

Patient Selection for Liver Transplantation
Controversies in Patient Selection
Patient Selection Summary
Post-Transplantation Management
Complications Related to Immunosuppression
Post-Transplantation Summary

Soft Skills (Code DMGA5)

CO1: Competence to do clinical research.

CO2: Attitude to work as a member of a healthcare team.

CO3: Skill in teaching graduate and post graduate students.

CO4: Communication skills - with patients, caregivers and colleagues.

CO5: Knowledge of medical ethics and etiquette.

CLINICAL EXPERIENCE

Candidates for admission to the first year of the Postgraduate Higher Specialty Degree Course in D.M.GASTROENTEROLOGY shall be required to possess the following qualifications:

(a) He / She must have qualified for the M.D.(Medicine or M.D.(Pediatrics) of this University or any other University recognized as equivalent thereto by this authority of this University and the Medical Council of India.

(b) The admitting authorities of the university will strictly ensure that every candidate admitted to the Postgraduate Higher Specialty Degree Course in D.M. GASTROENTEROLOGY has obtained permanent registration certificate from any one of the State Medical Councils.

He / She must not be registered for any other post graduation course

THESIS:

MAINTENANCE OF LOG BOOK

1. Every Postgraduate candidate shall maintain a record of skills he has acquired during the three years training period certified by the Head of the Department under whom he has undergone training.

2. The Postgraduate candidates should also be required to participate in the teaching program.

3. In addition, the Head of the Department shall involve their Postgraduate candidates in Seminar, Journal Club and Group Discussions and assure their participation in Clinical, Clinico-Pathological conferences.

4. Every Postgraduate candidate should be encouraged to present short title papers in conferences and to make improvements in it and submit them for publication in reputed medical journals. Motivation by the Head of Departments is essential in this area to sharpen the research skills of the postgraduate candidates.

5. The Head of the Department shall scrutinize the Log Book once in every three months.

6. At the end of the course, the candidate should summarize the contents and get the Log Book certified by the Head of the Department.

7. The Log Book should be submitted at the time of clinical examination for scrutiny of the Board of Examiners.

DISSERTATION

1. All candidates registered to undergo Postgraduate Higher Specialty Degree Course in D.M.Medical Gastroenterology shall be assigned a topic for Dissertation / Thesis within 4 months of his / her admission to the course and title of the topics assigned to the candidates be intimated to the Controller of Examinations of this University.

2. The candidate shall have the opinion in lieu of Dissertation / Thesis to submit a monograph on any topic pertaining to his / her specialty. The Head of Department shall assign topic of the monograph to the candidates.

3. The Dissertation /Thesis shall be in a bound volume of minimum of 50 pages and not exceeding 75 pages of typed matter (Double line spacing and on one side only) excluding certification, acknowledgements, annexure and Bibliography.

4. Four copies of Dissertation shall be submitted four months prior to the commencement of the University Examinations on the prescribed date to the Controller of Examinations of this University.

EVALUATION OF DISSERTATION

1. The Dissertation shall be evaluated by three examiners (one internal and two external) prior to the commencement of the University theory examination.

2. Two copies of statement of result (accepted / not accepted) for dissertation shall be sent by the Examiners to the Controller of Examinations of this Deemed University. The Controller of Examinations shall forward a copy of the statement of result to the Chairman of the Board of Examiners who will consolidate the result at the time of clinical examinations.

3. If the Examiners suggest minor corrections and resubmission of dissertation, the candidate shall be informed by the Controller of Examinations of this Deemed University regarding the corrections that the candidate has to carry-out and the dissertation shall be revalued preferably by the same examiners and on receipt of their approval, the dissertation of the candidate shall be declared to have been ‘accepted’.

4. If the candidate fails in the written/clinical examination but his dissertation is approved, the results awarded for the Dissertation shall be carried over for the subsequent examinations.

5. If the Dissertation is 'not accepted' by two/all the Examiners, the candidate shall not be permitted to appear for the written/clinical examinations. The candidate shall resubmit a fresh dissertation four months prior to the commencement of the subsequent session of theory examinations and shall be eligible to appear for the examination only on approval of the dissertation.

METHODS OF TRAINNING:

DURATION OF THE COURSE

(a) The period of certified study and training for the Postgraduate Higher Specialty Degree Course in D.M.Medical Gastroenterolgy should there be three academic years.

(b) No exemption shall be given from the period of study and training.

COMMENCEMENT OF THE COURSE

The academic year for Postgraduate Higher Specialty Degree Course in D.M.Medical Gastroenterology shall commence during the first week of April of every year.

COMMENCEMENT OF EXAMINATIONS

There shall be two University Examination sessions in an academic year April and November/December.

WORKING DAYS IN AN ACADEMIC YEAR

Each academic year shall consist of not less than 300 working years.

ATTENDANCE REQUIREMENT FOR ADMISSION TO EXAMINATION

No candidate shall be permitted to appear for the University Examination unless he / she puts in 80% attendance during his / her period of study and training and produces the necessary certificate of study, attendance and progress from the Dean of the college.

CONDONATION OF ATTENDANCE

There shall be no condonation of attendance for Postgraduate students.

TRAINING PROGRAMME IN GASTROENTEROLOGY

He/She will be directly involved in day-day care of all patients in the OPD's and patients admitted in wards under gastroenterology department. After initial evaluation he/she has to consult the respective consultant for further treatment plan.

He/She will have to do emergency duties as specified by the HOD.

He/She will have to be actively involved in the daily academic schedule as specified by the HOD. He/She should take part in the Seminars (Tuesday) and Journal club (Wednesday) in the first year. Second and third year students should take part in case discussion once discussion once a week (Thursday) and also participate in combined GI Meet (Monday)

All of them should actively participate in the Radiology and Pathology meet held as per schedule.

F. SKILLS:

Minimum procedures to be performed at the end of third year are as follows.

1. Diagnostic OGD	200
2. Diagnostic colonoscopies	50
3. Diagnostic sigmoidoscopies	100
4. Therapeutic OGD	50
5. Therapeutic colonoscopies	25
6. Liver biopsies	25
7. Assisting in ERCP, Sphincterotomy, Dilatation & other therapeutic procedures	25

Logbook will be meticulously maintained.

TRAINING IN OUTSIDE CENTRES

The Head of the Postgraduate Department shall make necessary arrangements for their Postgraduate candidates to undergo training in various skills in other centers, if such facilities are not available in the institution or hospital.

G.SCHEME OF EXAMINATION

(AT THE END OF THIRD YEAR)

PAPER	**PATTERN**	**MAXIMUM MARKS**		**PASSING MINIMUM**
Paper I Basic Sciences	10 Essays (10 marks each)	100	400	200
Paper II Clinical Gastroenterology	10 Essays (10 marks each)	100		
Paper III Clinical Hepatology	10 Essays (10 marks each)	100		
Paper IV Recent advances	10 Essays (10 marks each)	100		
Clinical	1 long case of 150marks 2 short cases of 75 marks	300	300	150
Oral	Spotters	100	200	100
	Viva Voce	100		

Aggregate passing minimum 500/100

Paper – I	Basic Sciences
Paper – II	Clinical Gastroenterology
Paper – III	Clinical Hepatology
Paper – III	Recent advances

Minimum passing: The candidate should score at least 50 marks in each of the theory papers. Minimum passing for the practical examination should be 50 % i.e. 250 marks out of 500.

In case of failure the candidate should appear for both theory and practical examination next time.

MIGRATION / TRANSFER OF CANDIDATES

1. Migration / Transfer of candidates from any recognized Medical College to this University shall not be granted unless a "NO OBJECTION CERTIFICATE" is obtained for the Medical Council of India.

2. The provision of combination of attendance shall be granted to a transferee for admission to the examinations of this University on satisfactory fulfillment of the regulations of this University.

RE-ADMISSION OF AFTER BREAK OF STUDY

1. Candidates having a break of study of five years and above from the date of admission and more than two spells of break will not be considered for re-admission.
2. The five years period of break of study shall be calculated from the date of first admission of the candidate to the course inclusive of all the subsequent spells of break of studies.
3. A candidate having a break of study shall be re-admitted after satisfactory fulfillment of the regulations of the University at the commencement of an academic year only and shall undergo the full duration of the course. No exemption for the period of study already undergone or for the

examinations already passed shall be granted. He / She will be required to appear for all the examinations as prescribed in the regulations.

RECOMMENDED BOOKS:

Suggested text book reading

1. Sleisenger &Fordtran's Gastrointestinal and Liver Disease (Pathophysiology / Diagnosis / Management) – Mark Feldman, Bruce F.Scharscmidt, Marvin H.Sleisenger
2. Textbook of Gastroenterology – Tadataka Yamada, David H.Alpers, Loren Laine, Chung Owyang, Don W.Powell
3. BERK – Bockus Text Book of Gastoenterology (Eight Volumes)
4. Sheila Sherlock – Diseases of Liver and Biliary System
5. Sciff-Text Book of Liver Diseases
6. Oxford Text Book of Liver Diseases
7. Text Book of Endoscopy – Peter Corton
8. Atlas of Endoscopy
9. Gastro Intestinal Pathology – Morson
10. Gastro Intestinal Radiology

LIST OF JOURNALS:

Suggested journal reading

1. Gastroenterology
2. GUT
3. Gastroenterology Clinis of N.America
4. Journal of Hepatology
5. European Journal of Gastroenterology and Hepatology
6. Indian Journal of Gastroenterology
7. Scandinavian Journal of Gastroenterology
8. Tropical Gastroenterology
9. American Journal of Gastroeneterology