THE TAMIL NADU Dr MGR MEDICAL UNIVERSITY CHENNAI

SYLLABUS-DM PEDIATRIC GASTROENTEROLOGY

INTRODUCTION

The speciality of Pediatric Gastroenterology has developed immensely the past 3 decades in India to be a full time specialty by its own right. It is now ready to train and teach interested pediatricians in the field of pediatric gastroenterology. A DM course would be appropriate advancement in this field

AIMS & OBJECTIVES

The training program should produce consultants with the following attributes:

1- Basic and broad knowledge in Paediatric Gastroenterology– To have the ability to arrive at a primary diagnosis and ability to generate a relevant differential diagnosis based on the accurate history including family history and physical examination.

2-To understand the indications and contraindications for diagnostic and therapeutic procedures.

3-Ability to think critically and analyse

4- To acquire skills at performing procedures

5- Ability to communicate effectively with parents, care takers with empathy and strike rapport with referring physicians

6- Appreciation of humanistic (compassionate, cost conscious, service oriented) and ethical aspects (accountability integrity) of medicine.

7- Ability to work as part of a team as gastrointestinal disease involves multidisciplinary management.

THEORY SYLLABUS

GENERAL CURRICULUM

Candidates will be required to properly utilize the services and acquire knowledge of basics of clinical medicine pertaining to the course along with skills to apply that knowledge in a given case

Basics Sciences

Applied anatomy, physiology, biochemistry, pathology, pharmacology, genetic, microbiology immunology and the basis of both congenital /acquired diseases of gastrointestinal, hepatic biliary pancreatic disease in various age groups from neonates to adolescents.

Nutritional assessment, planning nutritional therapy

Clinical science

Clinical, diagnostic, therapeutic aspects of various diseases of GI, liver, biliary and pancreas will be covered

BIOETHICS

1. Respect human life and the dignity of every individual.
2. Refrain from supporting or committing crimes against humanity and condemn all such acts.
3. Treat the sick and injured with competence and compassion and without prejudice and apply the knowledge and skills when needed.
4. Protect the privacy and confidentiality of those for whom we care and breach that confidence only when keeping it would seriously threaten their health and safety or that of others.
5. Work freely with colleagues to discover develop, and promote advances in medicine and public health that ameliorate and contribute to human well being.
6. Educate the public about present and future threats to the health of humanity.

7. Advocate for social, economic, educational and political changes that ameliorate suffering and contribute to human well being.
8. Teach and mentor those who a follow us, for they are the future of our caring profession.

CLINICAL TRAINING

GASTROINTESTINAL DISEASES-

Must know

1. Causes of both GI and non GI medical and surgical
2. Anatomy, physiology of esophagus, stomach, duodenum
3. Nutritional history and assessment,
4. To have the ability to identify the types namely- Organic, dysfunctional and psychogenic cause of chronic abdominal pain.
5. To know about peptic ulcer disease, H.pylori gastritis, eosinophilic gastritis, gastroparesis, infective cause of gastritis, corrosive injury
6. Motility disorders and Functional illnesses

Must Know

1. Esophageal, gastric, small intestinal and colonic sensory and motor physiology
2. Pathogenesis, clinical assessment and treatment of motor disorders of esophagus, stomach, small intestine and colon.
3. Recognise manometric features of major motor disorders of esophagus and anal sphincter
4. Pathophysiology, diagnosis and management of Functional bowel disease
    a) Physiology of brain-gut axis, visceral sensation
    b) Role of neurotransmitters in sensory and motor functions
    c) Use of psycho pharmaceuticals in treatment of Functional bowel disorders, cognitive therapy
5. Acute and chronic pseudo-obstruction

Must know

1. Mucosal immunology and mechanisms of gastrointestinal inflammation.
2. Causes – GI infective agents, GI tuberculosis,
3. Gut microbiota, Water & Fluid metabolism in Gut

4 .Intestinal worms – Nemetodes, cestodes, trematodes

5. Acute, persistent, chronic diarrhoea.

6 Malabsorption, short gut syndromes, celiac disease, protein losing enteropathy

7. Inflammatory bowel disease

8. Food allergy- GI & Non GI manifestations

9. Neonatal diarrhea, non infective causes , intractable diarrhea of infancy

10. Diarrhea in immunocompromised children, tropical enteropathy

11. GI anomalies- Upper and Lower Tract

12. Constipation- Organic Vs functional management

13. Inherited GI polyposis- The basics, appropriate investigation, management

14. Prevention of GI infections- Vaccines, hygiene improvement

15. Acute GI emergencies- GI foreign body, GI bleed, acute corrosive injury, intussusception, peritonitis, perforation, obstruction, fulminant colitis, Acute pancreatitis, acute liver failure

16. Dysphagia- Strictures-Esophageal stricture-Causes, barium contrast interpretation, therapeutic intervention, follow up, growth monitoring

17. GI malignancy-Lymphoma

HEPATOBILIARY AND PANCREATIC DISEASES

Must know

A. Biliary tract disease:

1. Anatomy and developmental anomalies

2. Bile secretion, factors regulating secretion and enterohepatic circulation. Biliary tract – Motor function and dysfunction (sphincter of Oddi Dysfunction).

3. Acute. Recurrent and chronic pancreatitis, FCPD, genetic disorders of pancreas., identification of complications. Heriditary, familial and genetic disorder of pancreas,

Liver Disease-

Neonatal Cholestasis with reference to biliary atresia how early to identify, neonatal hepatitis, endocrinal and chromosomal causes, inherited liver diseases

When to suspect metabolic liver disease

Basics of neonatal liver cell failure-Pathogenesis, causes, investigations and management

Chronic cholestatic liver disease-PFIC, biliary malformations, hepatobiliary ascariasis, Choldocholithiasis, cholangitis, biliary pancreatitis, Wilson disease, Autoimmune, overlap syndromes, cholangiopathies and NAFLD

Portal hypertension – Cirrhotic/Non cirrhotic epidemiology, pathophysiology, etiology and management

NUTRITION

Must know:

1. Feeding history, complimentary feeding and family pot feeding in infants
2. Weight /Height/BMI
3. Diet history with reference to proximate principles, vitamins Basic nutritional concepts

2. Assessment of nutritional status including specific nutritional deficiencies and excesses.

3. Metabolic response to starvation and patho-physiological effects of under nutrition.

4. Special formula for food allergy. Metabolic liver disease

5. Restriction/ elimination /replacement diets in special situations

6. Exclusive enteral/partial enteral/total pareneneral nutrition

7. Re-feeding syndromes

8. Metabolic response to illness and injury, nutritional requirements during stress.

9. Obesity management.

10. Implementation and management of nutritional therapy including modified diets, external tube feeding.

Desirable to know:

1. Nutrition management of non-gastrointestinal disease

Managing patients with home parenteral nutrition

GASTROINTESITNAL AND HEPATIC PATHOLOGY

Must know:

1. Recognise spectrum of normal histology of GI tract Hepato-biliary system and Pancreas
2. Differentiation between EHBA & NH, ductal paucity, Hepatic infections, Wilson, Autoimmune, Chronic viral hepatitis, GI disease like abetalipoprotenemia, intestinal lymphangiectasia, eosinophilic disorders, Inflammatory Bowel diseases, GI lymphoma.

GASTROINTESTINAL RADIOLOGY

Must know:

1. Role of barium swallow, barium meal series and follow through, barium enema, double contrast studies, b. Understand logical sequence of using these techniques
2. Ability to evaluate and interpret plain film, radiographs, barium studies of GI tract, CT, ultrasound, MRI, scintigraphy, PET, vascular studies.
3. Ability to perform ultrasound abdomen
4. Familiar with radiation safety practices.
5. Lectures/self instruction programs – videotapes, video discs.

SURGERY

Must know:

1. Indication, common complications and long term consequences of the following surgical procedures:

   - Anti-reflux procedures, peptic ulcer surgery, caustic injury to upper GI tract, hernias and gastric volvulus, abscess and fistulas, , porto-systemic shunts, hepatic resections and liver transplantation, surgery for IBD, surgery for pancreatic and biliary diseases, surgery for malignant disease of GI tract

2. a) Surgery vs Endoscopy vs Interventional radiology – which procedure, where?

   b) Laproscopy vs open surgery

Objectives in GI/Liver Emergencies

1Resuscitation and initial management of acutely ill children

2. Diagnosis, assessment investigations, monitoring of children

3. Disease specific management

4.Therapeutic intervention after stabilisation

Focus for children in ICU

1. Naso gastric tube placement
2. Abdominal paracentesis
3. Sengstaken Blakemore tube placement
4. Interpretation of focussed abdominal sonography in trauma

SKILL TRAINING- GASTROINTESTINAL ENDOSCOPY

Must know

When to do? Preparation and preprocedural instructions

1. Understanding of indications, contraindications and complications.
2. Ability to interpret results of endoscopy
3. Ability to recommend an endoscopic procedure based on clinical, lab and imaging data.
4. Ability to integrate endoscopy findings and therapy into patient management plan
5. Ability to recognize personal limits while performing procedures and know when to request help.

Skills:

1. Esophago-gastro-duodenoscopy – biopsy
2. Therapy of variceal and non variceal upper GI bleed – EST, EVL. Glue injection

Injection therapy for ulcer bleeds, and advanced procedures when necessary

3.Colonoscopy - Diagnostic & Therapeutic (polypectomy, securing hemostasis in bleed)

4. Esophageal dilatation – wire guided / non wire guided Savary Gillard / CRE / pneumatic dilatation for anastomotic congenital, peptic strictures and Achalasia cardia

5. Small bowel evaluation- Enteroscopy.

Desirable- ERCP – placement of stent / NBD

Endoscopy Training:

a) Threshold number of procedures to be performed independently before competence is assessed (minimum number of procedures)

1.Proctosigmoidoscopy- 50

2 Esophago-gastroduodenoscopy 100

3 Upper GI mucosal biopsy-50

4 Therapy of non variceal haemorrhage (active bleed 10) Variceal haemorrhage (active bleed 5) 20

5. Esophageal dilatation 10

6. Flexible sigmoidoscopy 30

7. Colonoscopy 20

8. Snare polypectomy / homeostasis 10

9. Esophageal & Anorectal manometry- 10

Desirable-pH metry interpretation, post liver transplant follow up, specialised procedures

10. Placement of naso-jejunal tubes and PEG/PEJ.

TRAINING PROGRAM

Will include

1. Clinical- case discussion
2. Mortality & morbidity discussion,
3. Audit meet
4. Lectures, seminars, jounal club
5. Research projects
6. Stimulation lab
7. Inter departmental meet Radiology, Pathology,
8. Departmental clinical meeting, grand rounds, CPC

9. Joint academic meeting with other Departments

10. Certification by medical education cell

11. Research Activities

12. One month posting during the curriculum in Pathology, Radiology, pathology, ICU, Liver transplant unit

RESEARCH

1. **Candidates will be trained in the ability to**

a**.** Frame a research question

b.Plan a study to answer the question

c Collect the relevant information

d. Evaluate appropriately the collected data to draw a conclusion

Log book

Daily activities be maintained in log book. A copy of the report of procedures performed to be maintained duly signed by Head of the department at least 2 months prior to practical exams.HOD should certify the minimum of procedures performed.

COMPETENCY ASSESSMENT

Candidates will be continuously evaluated by their performances, in all areas and domains, daily bed side work, clinical discussions, journal presentation, procedures. Periodical assessment will be done by the faculty and feedback will be noted. Proper documents will be maintained.

Assessment: As part of overall evaluation of trainees in gastroenterology

1. Management of patients on (OP) and hospitalized patients (IP) –

- Follow up patients with long term disease (e.g IBD)
- Growth monitoring
- Counselling of families.

2) Maintain a log book of all procedures performed

3) Chronological Exposure:

- Skills to be achieved under supervised training

I st year - Upper GI endoscopy / biopsy

- Flexible sigmoidoscopy,
- Know how about the cleaning/Disinfection and drying of the scopes.
- Liver biopsy, large volume paracentesis

IInd year - Therapy of variceal and non variceal upper GI bleed

- Colonoscopy, polypectomy
- Dilatation of esophageal strictures, pneumatic dilatation for achalasia cardia

IIIrd year - - Esophgeal and anorectal motility

- 24 hour pH

Enteroscopy

Interpretation of capsule endoscopy study

ERCP

1. Communication / Commitment / Contribution / Compassion towards patients and Innovation	-	10 Marks
2. Implementation of Newly learnt techniques	-	10 Marks
3. Documentation of case sheets / discharge Summary / Review	-	10 Marks
4. Number of cases presented in Clinical Meetings/ Journal Clubs / Seminars / Papers presented in Conference.	-	10 Marks
5. No. Of Medals/ Certificates won in the conference / Quiz competitions and other academic meetings with details.	-	10 Marks
	Total	50 Marks

VIVA INCLUDING COMPETENCY ASSESSEMENT – 100 MARKS (50+50)

Assessment	I	- February	-	First Year
	II	- August	-	First Year
	III	- February	-	Second Year
	IV	- August	-	Second Year
	V	- February	-	Third Year
	VI	- May	-	Third Year

FINAL EXAMINATION: THEORY AND PRACTICAL ASSESSMENT

Theory Examination

Paper I – Applied Basic Medical Sciences – Applied anatomy, physiology, biochemistry, pathology, pharmacology, genetic, immunology microbiology

Paper II – General, Nutrition and Preventive Gastroenterology

Paper III – Hepatobiliary and pancreatic diseases

Paper IV – Recent Advances in the specialty

Each paper will contain:

1. Essay questions : 2X15 Makrs = 30 Marks
2. Short notes : 10X7 Marks = 70 Marks

Total 100 Marks

Practical:

Particulars	Time for examination of cases	Time for Examiners to question the candidates	Maximum marks
Long case	1 case x 60 mins	60 mins	100
Short case	2 cases x 15 mins	30 mins	100
Ward rounds	3 cases x 10 mins	30 mins	100
OSCE	5 stations x 3mins	15 mins	50
VIVA VOCE		15 mins	100
Log Book			50
Total			500

***A postgraduate student should have one Poster and one Oral presentation in State/ National conferences**

*** One prospective original study during the course leading to publication in peer reviewed journals**

OSCE Stations :

1. Intervention

2. Clinical Photograph

3. Endoscopic Photograph

4. Histopathology Specimen

5. Counselling of a patient for a major surgical intervention