



College of Physicians and Surgeons of Mumbai

Syllabus for CPS-PG-Course

DPGHN-DIPLOMA IN PAEDIATRIC GASTROENTEROLOGY,

HEPATOLOGY AND NUTRITION

College of Physicians and Surgeons of Mumbai

CPS House, Dr. E. Borges Marg, Parel, Mumbai – 400012.

DPGHN-DIPLOMA IN PAEDIATRIC GASTROENTEROLOGY, HEPATOLOGY AND NUTRITION

COURSE DESCRIPTION

Eligibility Criteria for Candidates:

i. A candidate should possess MBBS degree/ equivalent degree as per provisions of Indian Medical Council Act.

&

ii. Candidates having a recognized 3 years degree Qualification (MD/MS/DNB) in any General Medicine or Paediatrics speciality

or 2 years Diploma Qualification in General Medicine or Paediatrics speciality

Duration of the Course : 2 years

SYLLABUS

INTRODUCTION :

Pediatric gastroenterology developed rapidly in the late 1960s ,& in the mid-1970s, with the development of pediatric nutrition, and in 1990s it reflected the growth in hepatology. In 1996,United European Gastroenterology Federation (UEGF),conducted the first postgraduate course in pediatric gastroenterology and hepatology.

Pediatric gastroenterology, hepatology, and nutrition must be recognized as a pediatric subspecialty. As the predominant body for pediatric gastroenterology, hepatology, and nutrition in Europe, ESPGHAN has set standards in training.

The aims of this training syllabus are

to harmonize training in pediatric gastroenterology, hepatology, and nutrition

to establish clearly defined standards of knowledge and skill.

to foster the development of a network of competent tertiary care centers in pediatric gastroenterology, hepatology, and nutrition;

to further enhance Indian contribution to international scientific progress in pediatric gastroenterology, hepatology, and nutrition.

AIMS OF TRAINING

During the period of training the trainee should have received:

broad range of clinical experience in gastrointestinal and hepatologic diseases of children, together with their associated nutritional problems;

broad experience with the nutritional disorders of children;

specific training in diagnostic techniques and their interpretation;

experience in basic or clinical research;

contact with adult gastroenterology/hepatology;

knowledge of the administrative and organizational aspects of care for chronic pediatric gastroenterology and hepatology diseases;

experience functioning as part of a multidisciplinary team that includes addressing psychosocial aspects of various G.I. Diseases.

TEACHING

A logbook will be maintained and staged evaluation will be documented.

Clinical Teaching

In service training through supervised outpatients and in-patient care.

Clinical features, clinical data analysis, investigative work-up, clinical decision making, emergency care and ethical aspects of all common diseases in the field of gastroenterology and hepatology.

Clinical case presentations by trainees and ward rounds with faculty.

b) Procedures on patients

Several diagnostic and therapeutic procedures are done in the speciality of gastroenterology. Most prominent of them being endoscopic procedures. They have to be taught to the trainees in a graded and staged manner under close supervision. Desirable minimum numbers of the endoscopic procedures to be done by the trainees are listed below.

Procedures No.

Upper GI Endoscopy 100

Endoscopic variceal ligation/sclerotherapy 25

Proctosigmoidoscopy (rigid) 25

Pile banding 10

Flexible sigmoidoscopy 15

Full length colonoscopy 10

Polypectomy 5

Imaging and laboratory

Relevant diagnostic techniques in radiology and other imaging , laboratory investigations must receive attention. The theory behind these techniques will be discussed.

Didactic and theoretical teaching

It will be organized in semesters through seminars and journal clubs & will cover all common gastroenterological diseases and those that gain importance through recent research and information in pathogenesis, diagnosis and therapy.

Basic sciences

Trainees will be taught basic science aspects of techniques and diseases that they encounter such as molecular biology, biochemistry, physics, etc.

APPENDIX 1

Recommended Core Topics Basic Sciences

Immune system of the gastrointestinal tract (GIT) and its importance in various

GI disorders

Molecular biology in relation to GIT

Genetic diseases of the GIT and the liver

Gene therapy

GI tumors and tumor biology

Gastrointestinal hormones in health and diseases

Embryology of the gut, liver, pancreas and congenital anomalies.

Physiology of the gastrointestinal tract including liver and pancreas

Esophagus

Basic anatomy, histology and physiology

Congenital anomalies

Motility of the esophagus and motor disorders

Mechanism of deglutition and dysphasia

Approach to a patient with dysphasia

Gastro-esophageal reflux disease

Tumors of the esophagus

Esophageal webs, membranes and diverticulum

Management of benign and malignant esophageal strictures

Esophagus and systemic diseases
Infectious diseases of the esophagus
Foreign bodies in the esophagus and stomach
Esophageal perforation
Drug induced esophagitis
Stomach
Anatomy, histology, functions
Physiology of acid and bicarbonate secretion in health and diseases
Defence mechanisms against acid and pepsin
Gastrointestinal motor function in health and diseases.
Gastritis (nonspecific and specific)
Helicobacter pylori infection
Peptic ulcer
Dyspepsia
Stress and stomach
Gastric hypersecretory states including Zollinger-Ellison syndrome
Ulcer complications and their management
Bezoars
Diverticuli and hernia of the stomach
Small Intestine
Anatomy, blood supply, histology
Motility of the small intestine
Congenital anomalies
Normal absorption of the nutrients
Intestinal electrolyte absorption and secretion
Malabsorption syndromes Pathophysiology, manifestations and approach
Celiac sprue
Infection related diseases
Intestinal microflora in health and diseases
Tropical sprue
Whipple's disease
Infectious diarrhoea and food poisoning
Parasitic diseases
Small intestinal ulcers

Short bowel syndrome and intestinal transplantation.

Eosinophilic gastroenteritis

Food allergies

Intestinal obstruction and pseudo-obstruction

Short bowel syndrome

Acute appendicitis

Mal-rotation of the gut

Bezoars

Management of diarrhea acute as well as chronic.

Glymphomas

Small intestinal tumors

Small intestinal transplantation

Colon

Basic anatomy blood supply, histology and functions

Motility of the colon and disorders of motility

Congenital anomalies

Megacolon

Constipation

Colonic pseudo-obstruction

Fecal incontinence

Antibiotic associated diarrhoea 9. Inflammatory bowel disease

Ulcerative colitis

Crohn's disease

Indeterminate colitis

Ileostomies and its management 10. Diverticular disease of the colon

Radiation enterocolitis

Colonic polyps and polyposis syndromes

14. Other inflammatory diseases of colon including a. Solitary rectal ulcer syndrome b. Diversion colitis c. Collagenous and microscopic colitis d. Non specific ulcerations of the colon 15.

Hemorrhoids

16. Diseases of the anorectum

Pancreas

Anatomy, physiology, blood supply, developmental anomalies

Physiology of the pancreatic secretion

Pancreatic function tests

Acute pancreatitis

Recurrent acute pancreatitis

Chronic pancreatitis

Cystic fibrosis and other childhood disorders of the pancreas

Hereditary pancreatitis. Biliary Tree

Anatomy, Physiology

Physiology of bile formation and excretion 3. Enterohepatic circulation

Bilirubin metabolism.

Approach to a patient with jaundice

Gallstones, its complications, and management

Acute acalculous cholecystitis

Miscellaneous disorders of the gallbladder

Acute cholangitis

Benign biliary structure

Benign and malignant neoplasms of the biliary system.

Congenital diseases of the biliary systems

Liver

Anatomy, physiology, blood supply

Functions of the liver

Microcirculation of liver

Liver function tests

Portal hypertension : i. Extrahepatic portosplenic vein obstruction

Non cirrhotic portal fibrosis

Cirrhosis

Acute viral hepatitis

Chronic hepatitis

Fulminant hepatic failure

Subacute hepatic failure

Cirrhosis of liver

Ascites

Hepatorenalsyndrome

Autoimmune liverdisease

Metabolic liverdisease

Sclerosing cholangitis- primary andsecondary

Primary biliarycirrhosis

Hepatic venous outflow tractobstruction

Wilson'sdisease

Hemochromatosis

Liver inporphyria

Hepaticumors

Infections of theliver

Liver in congestive heartfailure

Liverbiopsy

Liver transplantation and artificial liversupport

Neonatal Hepatitis and BiliaryAtresia

Peritoneum and Retroperitoneum

Ascites

Chronicperitonitis

Budd-Chiarisyndrome

Diseases of theretroperitoneum

Nutrition

Normal nutritionalrequirements

Assessment of nutritionalstatus

Protein energymalnutrition

Manifestations and management of nutritional deficiency andexcess

Nutritional support in various GI disorders (mal-absorption, acute and chronic pancreatitis, inflammatory bowel disease), IEM, Wilson's disease.

Nutrition in special conditions like Obesity, Sports.

Neonatal Nutrition issues 8.TPN/PPN.

Miscellaneous

Upper and lower gastro-intestinal bleeding

Gastro intestinal tuberculosis

HIV and the GIT, hepatobiliary and pancreatic systems

GIT and liver in systemic diseases

Cutaneous manifestations of GI diseases

Vascular diseases of the GIT

Gastrointestinal side effects of drugs especially NSAIDs

Gastro-intestinal symptoms physiology and interpretation

Nausea, vomiting

Pain abdomen 11. Diarrhea 12. Constipation 13. Dysphagia 14. Jaundice

Vascular Diseases of the GI Tract GI Radiology

Reading and interpreting the common x-ray films including

_ X-ray films of the abdomen

_ Barium studies, ultrasound examination

_ CT scans, MR scans and angiography and ERCP films

GI Pathology

Reading and interpreting histological slides of common gastrointestinal and liver

Endoscopic Training

Endoscopic training is an integral part of training in superspecialty of gastroenterology. A trainee will work in collaboration with an adult G.I. department for the endoscopy. He will have knowledge of instruments and its application. i. Endoscopes ii. Accessories

iii. Sterilization of endoscopes and accessories iv.

Electrosurgical instrument

Keeping of endoscopes and accessories.

APPENDIX 2

Core objectives :The trainee will gain experience with and understanding of the following:

Epidemiology of the principal diseases encountered in pediatric gastroenterology and hepatology in childhood

Diagnostic and therapeutic procedures required for examination of the gastrointestinal tract and liver:

upper gastro intestinal endoscopy

colonoscopy

endoscopic procedures (e.g., polypectomy, removal of foreign bodies, sclerotherapy) endoscopic

retrograde cholangiopancreatography where appropriate

small intestinal and rectal biopsy

liver biopsy

motility studies (e.g., pH monitoring, transit studies, and knowledge of manometry)

pancreatic function tests (e.g., screening tests, fecal elastase, and knowledge of intubation tests)

Nutritional skills that include knowledge of the following: 1) Assessing nutritional status

dietary requirements of children

pathophysiology of malnutrition

theory and techniques of enteral and parenteral nutritional support

role of nutrition support teams and special therapeutic diets

Skills will be in cooperation with other specialists (surgeons, pathologists, radiologists, laboratory scientists, adult specialists)

Syllabus

Training requirements for tertiary specialists include basic knowledge;

Basic Pediatric topics in gastroenterology will include understanding of the following:

The association of abnormal embryogenesis with clinical disorders (e.g., diaphragmatic hernia, malrotation, atresias, biliary atresia)

Physiology of the gastrointestinal tract including liver and pancreas: e.g., causes of malabsorption, steatorrhea, and protein-losing enteropathy
Fluid-balance disturbances and causes and treatment of dehydration

Recognition and interpretation of common symptoms including failure to thrive in infancy, chronic diarrhea, recurrent abdominal pain, and vomiting

Presentation, investigation, and treatment of major gastrointestinal disorders (e.g., celiac disease, gastroesophageal reflux, chronic inflammatory bowel disease, etc.)

Basic knowledge of mucosal immunology

Causes and management of acute gastroenteritis: which children need admission?

Clinical skills will include the following:

Assessing nutritional status of infants and children, including axometry of height and weight

Assessing dehydration, and planning fluid therapy

Interpretation of plain radiographs and of contrast and other imaging studies

Managing enteral and parenteral nutrition

Prescribing elimination diets

Knowledge of techniques for measuring dynamic nutritional parameters (e.g., resting energy expenditure)

Technical skills will include the following:

Small intestinal biopsy

Upper gastrointestinal endoscopy, diagnostic/therapeutic

Colonoscopy

Pancreatic function tests

Esophageal pH and motility studies (e.g., transit studies and knowledge of manometry) Liver biopsies

Sclerosis of esophageal varices and other vascular malformations

Placement of endoscopic gastrostomy when appropriate

Polypectomy

Removal of foreign bodies

Management skills include the following:

Conducting a clinical audit

Managing admission policies, endoscopy lists, etc

Understanding contracting and purchasing when appropriate Organizing a postgraduate teaching program

Research skills include the following:

Designing clinical trials using medical statistics

Organizing and presenting data

Computer literacy including the ability to conduct a literature database search

The trainee will gain the ability to recognize and initiate diagnostic tests, and outline management of the following:

Pyloric stenosis Intussusception Hirschsprung disease

Peptic ulceration and *Helicobacter pylori* infection Vomiting

Constipation

Recurrent or protracted diarrhea Acute and recurrent abdominal pain Persistent jaundice in the young infant Intestinal bleeding

Intestinal obstruction

Differentiation of abdominal masses Acute liver failure

Short gut syndrome

Chronic inflammatory bowel disease

Small intestinal failure and intractable diarrhea syndrome Infections of gastrointestinal tract and liver

Gastroenterologic problems with acquired immune deficiency syndrome (AIDS) Gastrointestinal food allergy

Acute diarrhea including use of oral rehydration therapy Outbreak of hospital-acquired diarrhea

Chronic liver disease and metabolic liver disease Management before and after liver transplantation

Intestinal motility problems

Gastrointestinal problems in handicapped children Chronic undernutrition/failure to thrive

Feeding disorders, including self-starvation

Specific nutrient deficiencies iron, folate, vitamins (B12, D, E, and K, thiamine, riboflavin, ascorbic acid), zinc, copper, selenium, and essential fatty acids

Syllabus for Paediatric Nutrition

Clinical nutrition is a major component and the following curriculum is devised.

Scientific Basis of Paediatric Nutrition

Genetics, biochemistry and physiology relevant to nutrition Nutrition in fetal, infant and child development

Body composition and energy metabolism Principles of growth and its regulation Pathophysiology of malnutrition

Short and longterm consequences of over and undernutrition

Nutritional Requirements in Health and Disease

Energy requirements Macronutrient requirements Micronutrient requirements

Feeding & Nutrition of the Normal Child Infant (milk feeding, particularly breastfeeding) Toddler (complementary feeding)

Child (healthy diet) Adolescent (healthy diet)

Recognition of Nutritional Problems and Nutritional Assessment

Anthropometry

Dietary assessment Clinical assessment Biochemical assessment

Metabolic methods of assessment

Principles and Practice of Nutritional Support

Changes in diet and special diets Enteral and parenteral nutrition formulas Delivery systems and routes

Monitoring, assessment and complications

Investigation & Management of Nutritional Problems Related to

Gastrointestinal disease Intestinal failure Hepatobiliary disease Protein-energy malnutrition

Neurodisability

Cystic fibrosis

Critical and intensive care

Childhood cancer and immunodeficiency Renal disease

Bone disease Cardiac disease

Food intolerance and allergy Specific nutrient deficiencies Overweight and obesity Anorexia nervosa

Failure to thrive and eating disorders Neonatal problems

Surgical GI problems, especially short gut syndrome Inborn errors of metabolism

TRAINING PROGRAM

Structure of the Program : Will be in the form of the modules. 10 in No. 3 – Gastroenterology

3- Hepatology

3- Nutrition

1 – Neonatal Nutrition

Facilities and Infrastructure Available :

A) Nutrition support team :

10 bedded Nutrition Rehabilitation and Research Centre is present at Urban Health centre of LTMGH .

Consist of

Resident Doctor, Dietician, Clinical Nutritionist and a Pediatrician.

Interdisciplinary working

paediatric surgery : For surgical Gastroenterology

Adult Gastroenterology : For endoscopy and procedures.

Community and Child Public Health Nutrition : For Nutritional Survey and analysis.

DPGHN-DIPLOMA IN PEDIATRIC GASTROENTEROLOGY, HEPATOLOGY AND NUTRITION**Examination Pattern****Theory Examination:**

PAPER I	PAPER II	PAPER III
ANATOMY PHYSIOLOGY	THERAPEUTICS	APPLIED SCIENCES & RECENT ADVANCES
Section I	Section I	Section I
Q.1. 10 Marks	Q.1. 10 Marks	Q.1. 10 Marks
Q.2. 10 Marks	Q.2. 10 Marks	Q.2. 10 Marks
Q.3. 10 Marks	Q.3. 10 Marks	Q.3. 10 Marks
Q.4. 10 Marks	Q.4. 10 Marks	Q.4. 10 Marks
Q.5. 10 Marks	Q.5. 10 Marks	Q.5. 10 Marks
Total 50 Marks	Total 50 Marks	Total 50 Marks
Section II	Section II	Section II
Q.6. 10 Marks	Q.6. 10 Marks	Q.6. 10 Marks
Q.7. 10 Marks	Q.7. 10 Marks	Q.7. 10 Marks
Q.8. 10 Marks	Q.8. 10 Marks	Q.8. 10 Marks
Q.9. 10 Marks	Q.9. 10 Marks	Q.9. 10 Marks
Q.10. 10 Marks	Q.10. 10 Marks	Q.10. 10 Marks
Total 50 Marks	Total 50 Marks	Total 50 Marks
Section I + II = 100 Marks	Section I + II = 100 Marks	Section I + II = 100 Marks
Total Theory = 300 Marks, Passing = 150 (i.e. 50%) Marks in aggregate		

Practical Examination:		Marks
Paper - IV	Clinical Practical	100
Paper - V	Oral & Viva	100
Paper - VI	Case	100
Total Marks	(Aggregate marks for passing is 50% out of total.)	300

BOOKS:

Textbook of Pediatric Gastroenterology and Nutrition by Stefano Guandalini. 2010 edition2)

Essential Pediatric Gastroenterology, Hepatology, and Nutrition Stefano Guandalini.

Pediatric Gastroenterology in India RiyazArkal

Handbook on pediatric Nutrition American Academy ofPediatrics

Nutrition and Child development KEElizabeth

Pediatric Endoscopy HarlanWinter

Atlas on pediatric endoscopyWiley

Pediatric TPN KeithKanarek