

PEDIATRICS INCLUDING NEONATOLOGY

The course includes systematic instructions in growth and de-velopment, nutritional needs of a child, immunization schedules and management of common diseases of infancy and childhood, scope of Social Pediatrics and counseling.

1. GOAL

The broad goal of the teaching of undergraduate students in Pediatrics is to acquire adequate knowledge and appropriate skills for optimally dealing with major health problems of children to en-sure their optimal growth and development.

2. OBJECTIVES

2.1. KNOWLEDGE

At the end of the course, the student should be able to:

- 1.Describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof.
- 2.Describe the common paediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.
- 3.State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease.
- 4.Describe preventive strategies for common infectious disor-ders, malnutrition, genetic and metabolic disorders, poisonings, ac-cidents and child abuse.
- 5.Outline national programmes relating to child health including immunization programmes.

2.2. SKILLS

At the end of the course, the student should be able to:

- 1.Take a detailed pediatric history, conduct an appropriate physi-cal examination of children including neonates, make clinical diag-nosis, conduct common bedside investigative procedures, inter-pret common laboratory investigation results and plan and institute therapy.
- 2.Take anthropometric measurements, resuscitate newborn in-fants at birth, prepare oral rehydration solution, perform tubercu-lin test, administer vaccines available under current national pro-grams, perform venesection, start an intravenous saline and pro-vide nasogastric feeding.
- 3.Conduct diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascitic tap.
- 4.Distinguish between normal newborn babies and those requiring special care and institute early care to all new born babies includ-ing care of preterm and low birth weight babies, provide correct guidance and counseling in breast feeding.

5. Provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral of those who require hospitalization.

2.3. INTEGRATION

The training in pediatrics should prepare the student to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team in an integrated form with other disciplines, e.g. Anatomy, Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine and Physical Medicine and Rehabilitation.

3.1. DEPARTMENT OBJECTIVES

The objectives of training the undergraduate students in pediatrics are to ensure that at the end of the training he / she will be able to:

- 3.1.1. Diagnose and appropriately treat common pediatric and neonatal illness.
- 3.1.2. Identify pediatric and neonatal illnesses and problems that require secondary and tertiary care and refer them appropriately.
- 3.1.3. Advise and interpret relevant investigations.
- 3.1.4. Counsel and guide patient's parents and relatives regarding the illness, the appropriate care, the possible complications and the prognosis.
- 3.1.5. Provide emergency cardiopulmonary resuscitation to newborns and older children.
- 3.1.6. Describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof.
- 3.1.7. State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease.
- 3.1.8. Describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse.
- 3.1.9. Diagnose and effectively treat acute pediatric and neonatal emergencies.
- 3.1.10. Discharge medico-legal and ethical responsibilities.
- 3.1.11. Perform routine investigative and therapeutic procedures.
- 3.1.12. Motivate parents to consent for a diagnostic autopsy.

3.2. DEPARTMENT SKILLS

1. Obtain a proper relevant history and perform a humane and thorough clinical examination of all organs / systems in children including neonates.

2. Arrive at a logical working diagnosis after clinical examination.
3. Order appropriate investigations keeping in mind their need, relevance and cost effectiveness.
4. Plan and institute a line of treatment which is need based, cost effective and appropriate for common ailments taking into consideration :
 - a. Patient,
 - b. Disease,
 - c. Socio-economic status,
 - d. Institutional / governmental guidelines.
5. Recognize situations which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.
6. Demonstrate empathy and humane approach towards patients, relatives and attendants.
7. Develop a proper attitude towards patients, colleagues and other staff.
8. Maintain an ethical behavior in all aspects of medical practice.
9. Monitor growth and development of children and differentiate normal from abnormal.
10. Assess and manage fluid / electrolyte and acid-base imbalance.
11. Manage diarrheas / dysenteries: Assess dehydration; prepare and administer oral rehydration therapy (ORT).
12. Detect and institute corrective measures for nutritional deficiency.
13. Write a complete case record with all necessary details.
14. Write a proper discharge summary with all relevant information.
15. Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.
16. Organize antenatal, postnatal, well-baby and other clinics.
17. Motivate colleagues, community and patients to actively participate in national health programmes.
18. Organise and give training in first aid.
19. Adopt universal precautions for self-protection against HIV and hepatitis and counsel patients.
20. Maintain cold chain for vaccines.
21. Perform and read Mantoux test.
22. Start I.V. line and infusion in children and neonates.
23. Do venous cut down.
24. Give intradermal / SC / IM / IV injection.
25. Insert and manage a C.V.P. line.
26. Conduct CPR (cardiopulmonary resuscitation) and first aid in newborns/children including endotracheal intubation.
27. Pass a nasogastric tube.

28. Manage hyperpyrexia.

4. SYLLABUS

4.1. THEORY

4.1.1. VITAL STATISTICS

Introduction to pediatrics with special reference to age related disorders - Definition of mortality rates and ratios: infant, perinatal, maternal and neonatal - Causes and prevention of infant, perinatal and neonatal mortality - National programmes on maternal and child health including ICDS, IMNCI, RCH-I & RCH-II.

4.1.2. GROWTH AND DEVELOPMENT

Anthropometric and development assessment, normal and abnormal growth and development patterns, interpretation of growth curves and road to health chart - Psychological and behavioral problems; Approach to a child with growth retardation and short stature

4.1.3. NUTRITION

Normal requirements of protein, carbohydrate, fat, mineral, vitamins and trace elements for newborns, children, pregnant and lactating mothers - Exclusive breast feeding, advantages of breast feeding, infant feeding, weaning diets, planning of preterm nutrition, therapeutic diet chart - Recognition and treatment of nutritional deficiency disorders - Protein energy malnutrition : classification, causes, management including that of complications - National Nutritional and other child health and welfare programmes - Management of problems related to lactation failure - Hypervitaminosis

4.1.4. IMMUNISATION

National Immunization programmes; Vaccines and vaccine; preventable diseases - Principles of immunization; Vaccine preservation and cold chain ; Indications, contra-indications, adverse reaction and complications - Investigations and reporting of vaccine preventable diseases - Other newer vaccines - Haemophilus, Pneumococcal, hepatitis, meningococcal, mumps, rubella, influenza vaccine, varicella vaccine.

4.1.5. INFECTIOUS DISEASES

Natural history, clinical course, signs, symptoms, investigations, management and prevention of common bacterial, viral, parasitic and fungal infections with special reference to vaccine preventable disease, tuberculosis, mumps, rubella, typhoid, chicken pox and other common childhood exanthematous diseases, and parasitic infestations like Giardiasis, Malaria, Kala azar, Filariasis and Intestinal Helminthiasis and leptospirosis - Pediatric HIV, and Dengue fever

4.1.6. CENTRAL NERVOUS SYSTEM

Clinical diagnosis, investigations and treatment of acute CNS infections: Meningitis including tuberculosis, encephalitis, seizure disorders, febrile convulsions, Rheumatic Chorea - Cerebral palsy, mental retardation, hydrocephalus, Microcephaly - Infantile Hemiplegia.

4.1.7. GASTROINTESTINAL SYSTEM

Clinical diagnosis, relevant investigations and management of: 1.Gastro-oesophageal reflux, GI bleeding, short gut syndrome, acute and chronic diarrhea, complications of gastroenteritis and diarrhea control programme.

2.Common hepatic disorders: Hepatitis, Childhood Cirrhosis, Hepatosplenomegaly, Obstructive Jaundice, Portal Hypertension. 3.Abdominal tuberculosis, acute abdomen including surgical causes paralytic ileus, chronic constipation and rectal bleeding. 4.Budd - Chiari syndrome, Metabolic disorders like Wilson's disease.

4.1.8. GENITOURINARY SYSTEM

Clinical features, investigations, complications and management of acute glomerulonephritis; nephrotic syndrome; urinary tract infection; acute and recurrent - Acute and chronic renal failure.

4.1.9. CARDIO VASCULAR SYSTEM

Clinical features, diagnosis, investigation, prevention and treatment of acute rheumatic fever, rheumatic heart disease and complications - Recognition of congenital acyanotic and cyanotic heart diseases and management of cyanotic spells - Prevention, recognition and treatment of bacterial endocarditis - Diagnosis and management of congestive cardiac failure - Clinical features, diagnosis, prevention and treatment of pericardial effusion and myocarditis.

4.1.10. RESPIRATORY SYSTEM

Epidemiology, clinical features, investigation and management of acute respiratory infections of upper and lower tract and ARI control programme - Diagnosis and management of acute bronchial asthma, status asthmaticus, chronic suppurative lung diseases -Diagnosis and appropriate management of foreign body aspiration- Cystic fibrosis.

4.1.11. ENDOCRINE SYSTEM

Clinical recognition, causes, laboratory diagnosis, prevention and management of Hypothyroidism (cretinism) - Juvenile diabetes mellitus - CAH (Congenital Adrenal Hyperplasia)

4.1.12. HAEMATOLOGICAL SYSTEM

Recognition of clinical features, diagnosis, laboratory investigations and management of Nutritional and Haemolytic Anaemias- Diagnosis and basic investigations of bleeding and coagulation disorders in newborn and older children - Leukaemia and Lymphomas

4.1.13. NEONATOLOGY

Foetal physiology of normal pregnancy; Identification of ante-natal, intrapartum and immediate postnatal risk factors - Definition, Identification and classification of high risk neonate, Neonatal resuscitation, Gestational age assessment and Care of the normal newborn - Management of neonatal problems : Transient metabolic disorders, Infections, Minor developmental defects, Infants of diabetic mothers, Haemorrhagic Disease of Newborn, Respiratory distress, Feeding difficulties, Birth injuries, Anaemia and Jaundice - Management of meconium aspiration syndrome - Care of the preterm and low birth weight infant : temperature maintenance, feeding, prevention of complications, appropriate method of transfer to tertiary centre - Identification and referral of neonates with congenital malformations like cleft lip, cleft palate, tracheo-oesophageal fistula, diaphragmatic hernia, anorectal anomalies and neural tube defects.

4.1.14. GENETIC DISORDERS

Principles of inheritance and diagnosis of genetic disorders -Terminologies, Down 's syndrome - Genetic counseling

4.1.15. EMERGENCY PEDIATRICS

Clinical features, aetiology, laboratory diagnosis, prevention and management of : Status asthmaticus, Status epilepticus, Acute pulmonary oedema, Hypertensive emergencies, Peripheral circulatory failure due to dehydration and haemorrhage, Cardiac failure, Cyanotic spells, Scorpion and snake envenomation, and common poisoning like kerosine, datura, insecticide, and commonly used drugs etc.

4.1.16. MISCELLANEOUS DISORDERS

Common childhood symptoms that cause undue parental anxiety but are of no serious importance: recurrent common cold, stubbornness, temper tantrum, refusal to eat - Juvenile Rheumatoid Arthritis.