

Syllabus MD(Geriatrics)

The broad outline of the course contents is given below:

- A) **Basic Sciences:** Biology of human ageing, Epidemiology of human ageing, Immunology of human ageing, Effect of ageing on different organs, death.
- B) **Clinical Geriatric Medicine:** General Medicine, Geriatric Medicine, Cardiology, Pulmonary Medicine, Gastroenterology, Endocrinology, Nephrology, Neurology, Rheumatology, Hematology and Oncology.
Allied specialties: Orthopedics, Urology, Gynecology, Ophthalmology, ENT, Dentistry, Psychiatry, Pre - and post - anesthetic evaluation and management
- C) **Preventive geriatrics:** Rehabilitation, end of life care, legal, ethical and economic aspects

The details of the course contents under each of the four papers are outlined herewith:

Paper I: Basic Sciences of the following systems:

1. Anatomy
2. Physiology
3. Biochemistry
4. Pharmacology
5. Microbiology
6. Pathology

Paper II: General Medicine and Psycho-Geriatrics Introduction to Clinical Medicine:

- ☐ Headache
- ☐ Chest pain
- ☐ Chills and Fever
- ☐ Lassitude and Asthenia
- ☐ Cough
- ☐ Nausea and Vomiting
- ☐ Dysphagia
- ☐ Ascites
- ☐ Weakness, Tremor
- ☐ Dizziness, Vertigo, Disorders of Sensation, Seizures

Immunological Factors in Disease:

- Components of immune system
- ☐ Mechanism of the immune response
- ☐ Immune deficiency and lympho-proliferative disorders
- ☐ Types of immune reaction and their relation to disease
- ☐ Suppression of immune reactions and its effects

Infection and Diseases:

- Nature of microorganisms
- ☐ Epidemiology and spread of infections

Syllabus approved
ABalwani
2/12/21

Ananti
02/12/21

San
2.12.2021

Balwani
2/12/21

Kandlikar
02/12/21

- ☐ Immunity and Immunosenescence
- ☐ Diagnosis and management of infections
- ☐ Pyrexia of unknown origin

Chemotherapy of Infections:

- Antibiotics and other antibacterial agents
- ☐ Anti-virals
- ☐ Anti-fungals
- ☐ Anti-retroviral therapy

Disturbances in Electrolyte and Water Metabolism:

- ☐ Hyponatremia and hyponatremia
- ☐ Hyperkalemia and hypokalemia
- ☐ Calcium-phosphate and magnesium metabolism
- ☐ Disturbances in H⁺ ion concentration

Diseases of the Cardiovascular System:

- Cardiac Arrhythmias
- ☐ Cardiac failure
- ☐ Valvular Heart Disease
- ☐ Ischemic Heart Disease
- ☐ Pericardial diseases
- ☐ Cardiomyopathies, Myocarditis
- ☐ Atherosclerosis, hypertension
- ☐ Diseases of the aorta
- ☐ Peripheral Vascular Disease

Diseases of the Respiratory System:

- Disease of the Upper and Lower Respiratory Tract
- ☐ Bronchial Asthma, chronic Obstructive Pulmonary Disorder (COPD), Cor pulmonale
- ☐ Acute and Chronic Respiratory Failure
- ☐ Neoplasm of lung
- ☐ Diseases of Pleura, Mediastinum and Diaphragm

Diseases of the Gastrointestinal System:

- ☐ Diseases of the esophagus, Gastro-esophageal Reflux Disorder (GERD)
- ☐ Peptic Ulcer, Gastritis and other diseases of the stomach
- ☐ Inflammatory diseases of small and large intestine
- ☐ Diverticulosis
- ☐ Malignancy of stomach, small intestine, colon and rectum
- ☐ Mal-absorption syndrome
- ☐ Diseases of the peritoneum

Diseases of the Liver and Biliary Tract:

- ☐ Diagnostic procedures in liver disorders
- ☐ Derangement of hepatic/biliary metabolism
- ☐ Acute Hepatitis
- ☐ Chronic active hepatitis
- ☐ Cirrhosis of liver
- ☐ Tumors of liver
- ☐ Liver Abscess
- ☐ Infiltrative and Metabolic diseases of liver
- ☐ Disorders of Gall Bladder and Bile Duct
- ☐ Ascites

Diseases of the Pancreas:

- Diagnosis of pancreatic diseases

- ☐ Acute and chronic pancreatitis

- ☐ Tumors of pancreas

Diseases of the Kidney and Urinary System:

- Acute Renal Failure

- ☐ Chronic Kidney Disease

- ☐ Glomerulonephritis

- ☐ Nephrotic syndrome

- ☐ Vascular diseases of the kidney

- ☐ Infections of the urinary tract

- ☐ Obstructive Uropathy

- ☐ Urinary Incontinence

- ☐ Nephrolithiasis

- ☐ Renal Cell Carcinoma

Diseases of the Endocrine System:

- Thalamus and pituitary gland

- ☐ Diseases of the Anterior Pituitary

- ☐ Disorders of the neuro-hypophysis

- ☐ Hyper thyroidism and hypo -thyroidism

- ☐ Hyper parathyroidism and hypo -parathyroidism

- ☐ Diabetes Mellitus

- ☐ Hyperinsulinism /Glucagon and its effects

- ☐ Diseases of the Adrenal Cortex and Medulla

- ☐ Diseases of the testes and ovaries

Diseases of Blood and Blood Forming Organs:

- Blood formation and destruction

- ☐ Anemia

- ☐ Bone Marrow Failure

- ☐ Blood Groups and Blood Transfusion

- ☐ Myeloproliferative disorders

- ☐ Abnormal hemoglobins

- ☐ Disorders of platelets

- ☐ Hemorrhagic disorders

- ☐ Leukemia

- ☐ Lymphomas

- ☐ Diseases of Spleen and Reticulo-endothelial system

Diseases of Connective Tissue, Joints and Bones:

- Rheumatoid Arthritis, including Late Onset Rheumatoid Arthritis (LORA)

- ☐ Ankylosing spondylitis

10

- ☐ Systemic Lupus Erythematosus/ Vasculitis

- ☐ Scleroderma

- ☐ Polymyalgia Rheumatica

- ☐ Gout/ Pseudogout

- ☐ Osteoarthritis

- ☐ Diseases of bone - Metabolic and Endocrine

- ☐ Tumors of Bone

Diseases of the Nervous System:

- ☐ Diagnostic methods in Neurology
- ☐ Coma
- ☐ Headache
- ☐ Epilepsy
- ☐ Sleep Disorders
- ☐ Diseases of Cranial Nerves
- ☐ Cerebro-vascular Diseases
- ☐ Diseases of the Spinal Cord
- ☐ Diseases of the Peripheral Nervous System
- ☐ Pyogenic infections of the CNS
- ☐ Viral Infections
- ☐ Multiple Sclerosis and other demyelinating diseases
- ☐ Metabolic and Nutritional diseases of brain
- ☐ Degenerative diseases

Diseases of the Skin:

- Skin lesions of general medical significance
- ☐ Generalized pruritus
- ☐ Pressure ulcers
- ☐ Pigmentation of the skin
- ☐ Disorders of Melanin Metabolism
- ☐ Photosensitivity and other reactions to light
- ☐ Hirsutism and Alopecia
- ☐ Cutaneous manifestations of internal malignancy
- ☐ Psoriasis
- ☐ Scabies
- ☐ Fungal infections of skin

Psycho-Geriatrics:

- Epidemiology of Mental Disorders in the elderly
- ☐ Definition and Classification of Psychiatric Disorders
- ☐ Delirium /Acute confusional state
- ☐ Dementia
- ☐ Depression in old age
- ☐ Bipolar disorder
- ☐ Functional psychiatric disorders in old age
- ☐ Personality and behavioral disorders
- ☐ Psychogeriatric service - Principles of treatment
- ☐ Management of Psychiatric Illness
- ☐ Alcoholism and the elderly patient
- ☐ Care-giver problems

Paper III: Geriatric Medicine**General:**

- Demography, World Trends
- ☐ Trends in India and Developing countries
- ☐ The Aged and Society - Past and Present
- ☐ The evolution of Geriatric Medicine

Gerontology:

- Normal and abnormal aging

- ☐ Theories of aging
- ☐ Metabolic and Structural aspects of aging
- ☐ Biochemical changes in the Normal aging Brain
- ☐ Aging in tissues and cells
- ☐ Atherosclerosis and aging
- ☐ Ecology of Human Senses
- ☐ The milieu interior and aging

Geriatric Medicine:

- How are older patients different?
- ☐ Common patterns of disease in old age
- ☐ Alteration in pain and temperature responses
- ☐ Missing Symptoms
- ☐ Complications of Illness
- ☐ Non-specific presentations
- ☐ Masking by known disease
- ☐ History taking in the elderly
- ☐ Physical Examination of the old patient

Investigations in the elderly:

- Policy and interpretation
- ☐ Radiological, Hematological & Biochemical investigations
- ☐ ECG
- ☐ Urinalysis
- ☐ Radio isotope tests
- ☐ Bone Scan
- ☐ Imaging – Ultrasound, CT Scan, MRI
- ☐ How much to investigate?
- ☐ Concept of normal range

Immunology:

- ☐ Genetic aspects of Immunity and Immunological Diseases
- ☐ Mutation
- ☐ Alternative theories of Aging
- ☐ Cancer
- ☐ Immunological Surveillance

Nutrition:

- Nutritional requirement
- ☐ Changes in total body mass and body composition
- ☐ Nutritional Assessment
- ☐ Nutritional deficiency in old age
- ☐ Osteoporosis
- ☐ Osteomalacia and Vitamin D
- ☐ Iron and Vitamins
- ☐ Recommended intake of nutrients
- ☐ Prevention of nutritional deficiency

Cardiovascular System:

- Physiology and Pathology of Cardiovascular system in old age
- ☐ Investigation of Heart Diseases in old age
- ☐ Cardiac Arrhythmias
- ☐ Coronary Artery Disease and Acute Myocardial Infarction

- ☐ Hypertension and Hypertensive Heart Disease
- ☐ Postural Hypotension
- ☐ Valvular Heart Disease
- ☐ Chronic Congestive Heart Failure
- ☐ Aortic aneurysm
- ☐ Bacterial Endocarditis
- ☐ Peripheral Vascular Disease
- ☐ Deep Venous Thrombosis and Pulmonary Embolism

Endocrine and Metabolic Disorders:

- Changes with aging
- ☐ Diabetes Mellitus
- ☐ Diseases of the Pituitary, Parathyroid and Thyroid
- ☐ Obesity
- ☐ Sexual dysfunction
- ☐ Disorders of Sodium, Potassium, Calcium, Magnesium and Zinc
- ☐ Disturbances of Fluid Metabolism
- ☐ Hyperpyrexia / Heat Stroke

Central Nervous System:

- ☐ The Aging Brain
- ☐ Vascular lesions of the Central Nervous System
- ☐ Dementia
- ☐ Degenerative disorders including Parkinsonism
- ☐ Head Trauma
- ☐ Infections of the Nervous System
- ☐ Epilepsy
- ☐ Peripheral Neuropathy
- ☐ Disorders of Spinal cord and Nerve Roots
- ☐ Neoplasia

Genitourinary System:

- ☐ Structural changes with aging
- ☐ Acute and Chronic Renal Failure
- ☐ Infections of the Genito-urinary Tract
- ☐ Diseases of the Bladder and Prostate
- ☐ Urinary Incontinence
- ☐ Aging changes in the Genital Tract
- ☐ Post-menopausal bleeding
- ☐ Gynecological disorders in the elderly

Disorders of the Special Senses:

- ☐ Disorders of the Eye
- ☐ Hearing Disturbances
- ☐ Disturbance of Taste and Smell
- ☐ Dental Problems

Infections in the Elderly:

- Host Defenses - Natural Barriers
- ☐ White Cell response, Immune mechanism
- ☐ Diagnosis of Fevers
- ☐ Urinary Infection - Diagnosis and Treatment
- ☐ Pneumonias - Cause, Diagnosis and Treatment
- ☐ Septicemia

- ☐ Bacterial Endocarditis
- ☐ Antibiotic Treatment
- ☐ Rational Use of Antibiotics

Gastro-intestinal system:

- Changes with age
- ☐ Investigations of the Gastro-intestinal tract
- ☐ Disorders of the mouth
- ☐ GERD / Hiatus Hernia
- ☐ Acid Peptic Disease
- ☐ Disease of the Pancreas
- ☐ Diseases of the small Intestine
- ☐ Diseases of the large Intestine
- ☐ Fecal Incontinence
- ☐ GI Malignancy
- ☐ Disease of the liver and Biliary System
- ☐ Constipation – Prevention and Management

Respiratory System:

- ☐ Changes with age
- ☐ Infections of the Respiratory System
- ☐ Bronchial Asthma, Chronic Obstructive Airway Disease, Cor Pulmonale
- ☐ Bronchogenic carcinoma
- ☐ Respiratory Abnormalities in Extra-pulmonary conditions
- ☐ Respiratory Failure

Musculoskeletal System:

- The aging joints
- ☐ Degenerative Joint Disease
- ☐ Gout/ Pseudo-gout
- ☐ Rheumatoid Arthritis
- ☐ Infective Arthritis
- ☐ Myositis/ Myopathy
- ☐ Polymyalgia Rheumatica/ Temporal Arthritis
- ☐ Osteoporosis
- ☐ Osteomalacia

Hematopoietic System:

- Changes with aging
- ☐ Anemia in the elderly
- ☐ Leukemias and Lymphomas
- ☐ Para-proteinaemia
- ☐ Myelodysplastic syndromes
- ☐ Disorders of Hemostasis

Dermatology:

- Aging skin
- ☐ Senile purpura
- ☐ Bed sores
- ☐ Pruritus/ Intertrigo
- ☐ Cancers/benign lesions
- ☐ Pemphigus/ pemphigoid
- ☐ Herpes Zoster

- ☐ Leg ulcer

Malignancy in old age:

- Incidence, Clinical Significance
- ☐ Presentation
- ☐ Investigation and Management
- ☐ Counseling

Pharmacological Aspects of Aging:

- ☐ Pharmacokinetics in the elderly
- ☐ Pharmacodynamics
- ☐ Drug Selection and Dosage
- ☐ Drug Interactions
- ☐ Adverse Drug Reactions
- ☐ Drug Compliance
- ☐ Drug Misuse/Drug abuse

Surgery in the Elderly:

- Pre-operative Assessment
- ☐ Priorities for surgery
- ☐ Surgical Emergencies
- ☐ Fractures
- ☐ Pathological fractures
- ☐ Benign lesions
- ☐ Gangrene - Amputation
- ☐ Elective Surgery
- ☐ Post-operative problems and Management
- ☐ Anesthesia in old age

Special Problems:

- ☐ Pressure Sore
- ☐ Care of the Chronically ill
- ☐ Care of patients with terminal illness
- ☐ Religion and Illness
- ☐ Falls
- ☐ Nursing home placement

Paper IV: Social and Preventive Geriatrics including Rehabilitation, and Advances in Geriatrics

Social Geriatrics:

- Types of Family - Joint family system- promotion of Joint Family System – Role of Elders and the younger generation
- ☐ Isolation, loneliness and dependency - Dependency ratio – Generational equality
- ☐ Social changes due to urbanization and industrialization with respect to Elders
- ☐ Financial aspects - sources of income, old age pension
- ☐ Role of Government and NGOs in up-liftment of socio-economic status of older people
- ☐ International and national policies on ageing and old age care
- ☐ Geriatric Service for the Elderly in Western Countries and in India - Structure of geriatric Service - Family as basic Unit - Models of Geriatric Service
- ☐ Day Hospital, Day Care Centre, Long Stay Care Institution, Home for the Aged Functions of the Day Hospital - Staff and patients of day Hospital
- ☐ Nursing Home in Western Countries - Goals of Geriatric Care - Need for similar services in India

- ☐ Psycho-geriatric services - structure and facility – Domiciliary Assessment and community Care
- ☐ Terminal Care Services - social and Spiritual problems in Terminally ill
- ☐ Ethical Issues in Geriatric Medicine - Self determination and decision making in treatment options - Informed Consent - Quality of life – Age limits on health care
- ☐ Euthanasia - Acts of Omission and Commission

Preventive Geriatrics:

- Preventing Diseases and promoting health in old age - Types of preventive activities - Risk factor management in elderly - screening
- ☐ Health belief model - General Health practices in elderly
- ☐ Exercise in the elderly - Physical and Mental domain - Benefits of Exercise
- ☐ Development of Anticipatory Care and its Rationale - methods of Anticipatory Care
- ☐ Health promotion and Health Education in the Elderly
- ☐ Anti-Aging interventions

Rehabilitation:

- The concepts and History of Rehabilitation
- ☐ The goals of Rehabilitation
- ☐ Principles of Rehabilitation - Assessment, goals, priorities and monitoring progress
- ☐ Rehabilitation in old age - Special features in relating to aging, multiple pathology, Policies, expectation, carers, acute illness, social and financial support
- ☐ Clinical evaluation of rehabilitation - impairment, disability and handicap ☐ Prevalence of disability, types of disability
- ☐ Rehabilitation as Team work - Team leadership, therapist, physiotherapy, occupational therapy, social worker, physician and nursing personnel.
- ☐ Self care evaluation and management of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) - Self Care Assessment Tools
- ☐ Aids and application - tools for living
- ☐ Role of physiotherapy in the elderly
- ☐ Contractures and other deleterious effects of immobility
- ☐ Pressure Ulcer - factors, prevention and management
- ☐ Rehabilitation of Stroke in the elderly
- ☐ Rehabilitation of specific diseases - Parkinsonism, Paraplegia, Fracture neck of femur, acute and chronic arthritis, lower limb amputation, low back pain
- ☐ Organization and effectiveness of rehabilitation services – Community Services
- ☐ Geriatric Unit, Day hospital, Day Care Centre, Long Stay Care Institution -role of rehabilitation in the above services

Advances in Geriatric Medicine:

- Alzheimer's Disease
- ☐ Parkinsonism
- ☐ Osteoporosis
- ☐ Urinary Incontinence
- ☐ Falls / Prevention of Fractures
- ☐ Parenteral Nutrition
- ☐ Stroke Clinic and Memory Clinic
- ☐ Anti-aging research

Handwritten signature
2/12/21

Handwritten signature
02/12/21

Handwritten signature
2/12/21

Handwritten signature
02/12/21

Handwritten signature
2.12.2021