

MD RESPIRATORY MEDICINE

Syllabus

Structure & Functions of Respiratory System, Cardiovascular system and mediastinum.

- 1- Anatomy
- 2- Development & aging of respiratory system
- 3- Physiology
- 4- Pathophysiology
- 5- Microbiology
- 6- Genetics
- 7- Pharmacology
- 8- Pathology
- 9- Immunology & defence mechanisms
- 10- Molecular biology
- 11- Biochemistry

Airways

- 1-Asthma
- 2-Acute Bronchitis
- 3-Chronic bronchitis/ COPD
- 4-Bronchiolitis
- 5-Bronchiectasis
- 6-Airway Stenosis, megaly & malacia
- 7-Tracheoesophageal Fistula
- 8-Upper airway disease
- 9-Vocal cord Dysfunction
- 10-FB aspiration
- 11-GERD

Thoracic Tumours

- 1-Lung cancer
- 2-Metastatic Pulmonary tumours
- 3-Mesothelioma
- 4-Metastatic & Other pleural tumours
- 5-Benign intrathoracic tumours
- 6-Mediastinal tumours
- 7-Chest wall tumours
- 8-Sarcoma
- 9-Lymphoma and related diseases.

Non TB Respiratory Infections

- 1- Upper Respiratory Infections
- 2- Lower respiratory infections
- 3- Community acquired pneumonia

- 4- Nosocomial pneumonia
- 5- Pneumonia in the immunocompromised host
- 6- Other pneumonias
- 7- Parapneumonic effusion & Empyema
- 8- Lung abscess
- 9- Fungal infections
- 10- Parasitic infections
- 11- Epidemic Viral infections

Tuberculosis

- 1- Pulmonary TB
- 2- Extrapulmonary TB
- 3- TB in the immunocompromised host
- 4- Latent TB infections
- 5- Non tuberculous mycobacterial diseases
- 6- Drug resistant Tuberculosis
- 7- Tuberculosis control programme

Pulmonary Vascular diseases

- 1- Pulmonary Embolism
- 2- Pulmonary edema
- 3- Primary Pulmonary Hypertension
- 4- Secondary Pulmonary Hypertension, Cor Pulmonale
- 5- Vasculitis and Diffuse pulmonary hemorrhage
- 6- Abnormal A-V communication
- 7- Hepatopulmonary Syndrome

Occupational and Environmental Diseases

- 1- Occupational Asthma
- 2- Reactive airway dysfunction syndrome
- 3- Pneumoconiosis and Asbestos related Disease
- 4- Hypersensitivity pneumonitis
- 5- Dust and Toxic gas inhalation disease
- 6- Indoor pollution related diseases
- 7- Outdoor pollution related disease
- 8- Smoking related disease
- 9- High altitude Disease
- 10- Diving related disease, Aviation and sports related pulmonary disorders.
11. Disability evaluation and compensation.

Diffuse Parenchymal (interstitial) Lung Diseases

- 1- Sarcoidosis
- 2- Idiopathic Interstitial pneumonias including Idiopathic Pulmonary Fibrosis (IPF)
NSIP, COP, AIP, RB-ILD, DIP, LIP

- 3- Cryptogenic organizing Pneumonia of unknown etiology/ Bronchiolitis obliterans organizing Pneumonia (BOOP)
- 4- Interstitial lung diseases specific to Infancy

Latrogenic diseases

- 1- Drug induced lung diseases
- 2- Complications of invasive procedures
- 3- Radiation induced Disease

Acute Injury

- 1- Inhalation Lung Injury
- 2- Traumatic thoracic injury

Respiratory Failure

- 1- Acute Lung Injury and Acute Respiratory Distress Syndrome
- 2- Obstructive Lung disease
- 3- Neuromuscular Disease
- 4- Chest Wall Diseases
- 5- Other restrictive lung Diseases

Pleural Diseases

- 1- Pleurisy
- 2- Pleural Effusion
- 3- Chylothorax
- 4- Haemothorax
- 5- Fibrothorax
- 6- Pneumothorax

Diseases of the chest wall and respiratory muscles including the diaphragm

- 1- Chest wall deformities
- 2- Neuromuscular disorders
- 3- Phrenic Nerve Palsy
- 4- Diaphragmatic hernia

Mediastinal Diseases excluding tumours

- 1- Mediastinitis
- 2- Mediastinal Fibrosis
- 3- Pneumomediastinum

Pleuropulmonary manifestations of systemic/ Extrapulmonary disorders

- 1- Collagen vascular disease
- 2- Cardiac disease

- 3 - Abdominal disease
- 4- Haematological disease
- 5- Obesity
- 6- Hyperventilation syndrome

Genetic and Developmental Disorders

- 1- Cystic Fibrosis
- 2- Primary Ciliary Dyskinesia
- 3- Alpha-1 antitrypsin deficiency
- 4- Agenesis, Aplasia and Hypoplasia
- 5- Sequestration

Respiratory Diseases and Pregnancy

- 1- Asthma
- 2- Cystic fibrosis
- 3- Tuberculosis
- 4- Sarcoidosis
- 5- Restrictive Lung diseases
- 6- Pregnancy induced respiratory diseases

Allergic Diseases (IgE mediated)

- 1- Upper airway diseases
- 2- Asthma
- 3- Allergic Bronchopulmonary aspergillosis
- 4- Anaphylaxis

Eosinophilic Diseases

- 1- Non-asthmatic eosinophilic bronchitis
- 2- Acute and chronic eosinophilic pneumonia
- 3- Hypereosinophilic syndrome
- 4- Churg-strauss syndrome

Sleep related disorders

- 1- Obstructive sleep apnoea
- 2- Central sleep apnoea
- 3- Upper airway resistance syndrome
- 4- Obesity hypoventilation syndrome

Immunodeficiency disorders

- 1- Congenital immunodeficiency syndrome
- 2- Acquired immunodeficiency syndrome
- 3- HIV related diseases
- 4- Graft versus host diseases
- 5- Post-transplantation immunodeficiency

Orphan Lung diseases

- 1- Langerhans cell histiocytosis
- 2- Lymphangiomyomatosis
- 3- Pulmonary alveolar proteinosis
- 4- Amyloidosis

Symptoms and Signs

- 1- Dyspnoea
- 2- Wheeze
- 3- Stridor
- 4- Hoarseness
- 5- Cough
- 6- Sputum production
- 7- Chest Pain
- 8- Haemoptysis
- 9- Snoring
- 10- General symptoms of disease including fever, weight loss, oedema, Nocturia and Day time somnolence
- 11- Abnormal findings on inspection including cyanosis, abnormal breathing patterns, finger clubbing, chest wall deformities, superior vena cava syndrome and Horner's syndrome
- 12- Abnormal findings on palpation and percussion
- 13- Abnormal findings on auscultation

Pulmonary Function Testing

- 1- Static and Dynamic Lung Volumes- Interpretation and Performance
- 2- Body Plethysmography – Interpretation
- 3- Gas transfer- Interpretation
- 4- Blood gas assessment and Oximetry-Interpretation and Performance
- 5- Bronchial provocation testing- Interpretation and performance
- 6- Cardiopulmonary exercise testing- Interpretation and performance
- 7- Assessment of respiratory mechanics- Interpretation
- 8- Compliance measurements - Interpretation
- 9- Respiratory muscle assessment – Interpretation
- 10- Ventilation perfusion measurement – Interpretation
- 11- Shunt measurement – Interpretation
- 12- Sleep studies- Interpretation and performance
- 13- Measurement of regulation of ventilation- Interpretation

Other procedures

- 1- Blood test and serology relevant to Respiratory medicine
- 2- Analysis of exhaled breath components including NO,CO and breath condensate
- 3- Sputum induction
- 4- Sputum analysis
- 5- Tuberculin skin testing
- 6- Allergy skin testing
- 7- Thoracic ultrasound imaging

- 8- Thoracentesis
- 9- Closed needle pleural biopsy
- 10- Medical thoracoscopy
- 11- Flexible bronchoscopy
- 12- Transbronchial lung biopsy
- 13- Transbronchial needle aspiration
- 14- Endobronchial ultrasound
- 15- Bronchalveolar lavage
- 16- Bronchography
- 17- Rigid bronchoscopy
- 18- Interventional bronchoscopic technique including fluorescent bronchoscopy, brachytherapy, endobronchial radiotherapy, afterloading laser and electrocoagulation cryotherapy, Photodynamic therapy and airway stents.
- 19- Transthoracic needle aspiration & biopsy
- 20- Fine needle lymphnode aspiration for cytology
- 21- Right heart catheterization
- 22- Chest X-ray
- 23- Fluoroscopy

Procedures performed collaboratively

- 1- Thoracic imaging (X-ray, CT, MRI)
- 2- Nuclear medicine techniques (Pulmonary and Bone scan PET)
- 3- Electrocardiogram
- 4- Echocardiography
- 5- Ultrasound
- 6- Transoesophageal ultrasound
- 7- Oesophageal pH monitoring
- 8- Cytology/Histology
- 9- Microbiology testing

Treatment modalities and prevention measures

- 1- Systemic and inhaled drug therapy
- 2- Chemotherapy
- 3- Other systemic antitumour therapy
- 4- Immunotherapy including de-/ hyposensitization
- 5- Oxygen therapy
- 6- Ventilatory support (Invasive/ Noninvasive/CPAP)
- 7- Cardiopulmonary resuscitation
- 8- Assessment for anaesthesia/Surgery
- 9- Endobronchial therapies
- 10- Intercostal tube drainage
- 11- Pleurodesis
- 12- Home care
- 13- Palliative care
- 14- Pulmonary rehabilitation
- 15- Nutritional interventions
- 16- Surfactant therapy
- 17- Gene therapy

- 18- Principles of stem cell therapy
- 19- Smoking cessation
- 20- Vaccination and infection control
- 21- Other preventive measures

Core generic abilities

- 1- Communication including patient education and public awareness
- 2- Literature appraisal
- 3- Research
- 4- Teaching
- 5- Audit/ quality assurance of clinical practice
- 6- Multidisciplinary teamwork
- 7- Administration and management
- 8- Ethics

Competencies in the fields shared with other specialties

- 1- Intensive care
- 2- High dependency units

Knowledge of associated fields relevant to adult Respiratory medicine

- 1- Thoracic surgery
- 2- Radiotherapy
- 3- Paediatric respiratory medicine
- 4- Chest physiotherapy
- 5- Other relevant medical specialties

Further areas relevant to respiratory medicine

- 1- Epidemiology
- 2- Statistics
- 3- Evidence based medicine
- 4- Quality of life measures
- 5- Psychological factors in the development of respiratory diseases
- 6- Psychological consequences of chronic respiratory diseases
- 7- Public health issues
- 8- Organization of Health care
- 9- Economics of health care
- 10- Compensation and legal issues

Thesis: PG Degree students should do a thesis on a socially and clinically relevant topic under the guidance of a PG teacher. This should be submitted 6 months prior to the examination

Conferences: An MD student should attend a minimum of one national and one state conference in the subject during the course. It is preferable that they should present a paper/poster in the conference and desirably publish a research paper in a journal of repute.

Recognised textbooks, reference books & journals**a) Text Books:**

Respiratory Diseases (I & II) - Crofton & Douglas
Text Book of Pulmonary & critical care medicine-SK Jindal
Pulmonary Diseases & Disorders - A. Fishman
Diseases of Chest (I,II,III &IV) - Fraser & Pare

b) Reference books:

Principles of Critical Care - Farokh E. Udwadia
Pulmonary Function Testing - Gregg L. Ruppel
Bronchoscopy -Udaya B. S.Prakash
Principles & Practices of Sleep Medicine - Kryger & Roth
Clinical application of Blood Gases - Barry A.Shapiro
Occupational Lung Disorders - Park & Park
Paediatric Respiratory Illnesses- Ravindran Chetambath
High Resolution CT of the Lung - W. Richard Webb
Surgical Aspects of Tuberculosis - Gibbons
Tuberculosis – Toman

c) Journals:

Thorax
American Review of Critical Care & Respiratory Diseases.
Indian Journal of Chest Diseases
European Journal of Respiratory Diseases.
Clinics in Chest Medicine.
Recent Advances in Respiratory Medicine.
Lung India
