



World Cancer Day

February 4

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Introduction

World cancer day is celebrated to raise cancer awareness and encourage its prevention, detection, and treatment

History of The Day

World Cancer Day was established on February 4, 2020 at the world cancer summit against cancer for the new Millenium, held in Paris





***Close the
care gap***

Key Cancer Facts

- ❑ Cancer is -
 - ❖ the leading cause of death in the developed world
 - ❖ the second leading in the developing world

- ❑ Cancer statistics:
 - There are 24 million new cases of cancer annually
 - 10 million people die from cancer every year
 - Up to 3.8 million lives could be saved each year by early detection and treatment

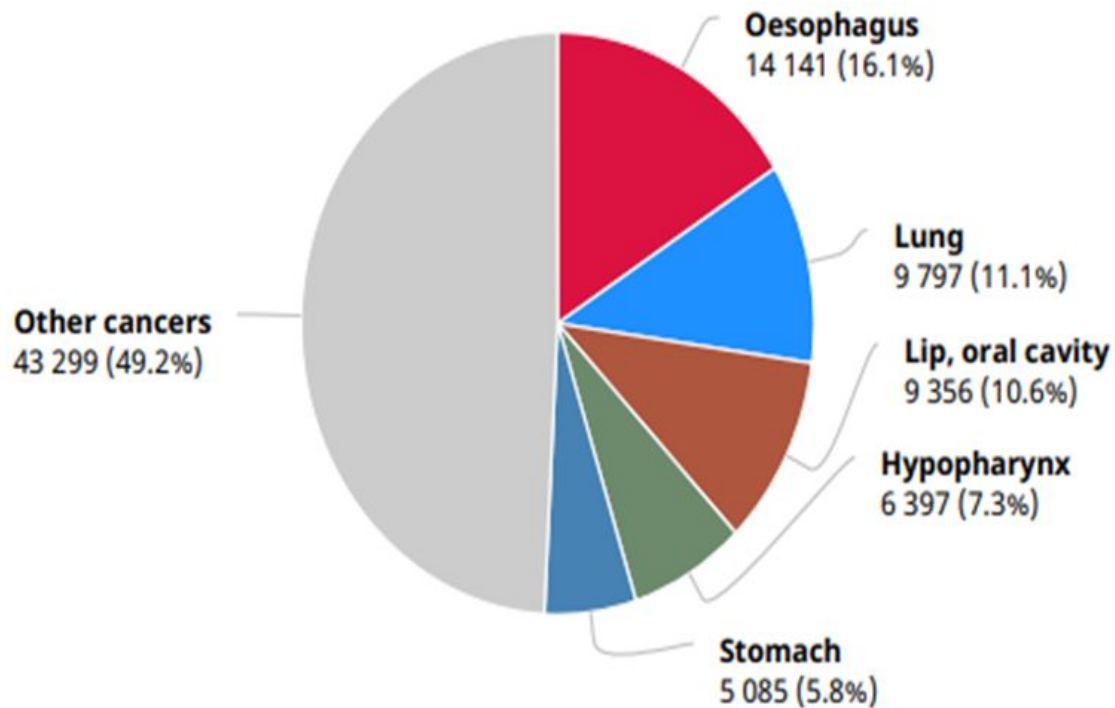
Most Common Cancers

Male: Lung , Oesophagus, Oral Cavity, Stomach, Prostate
Colon

Female: Breast, Cervix, Uterus, Oesophagus, Gallbladder,
Ovary, Oral cavity

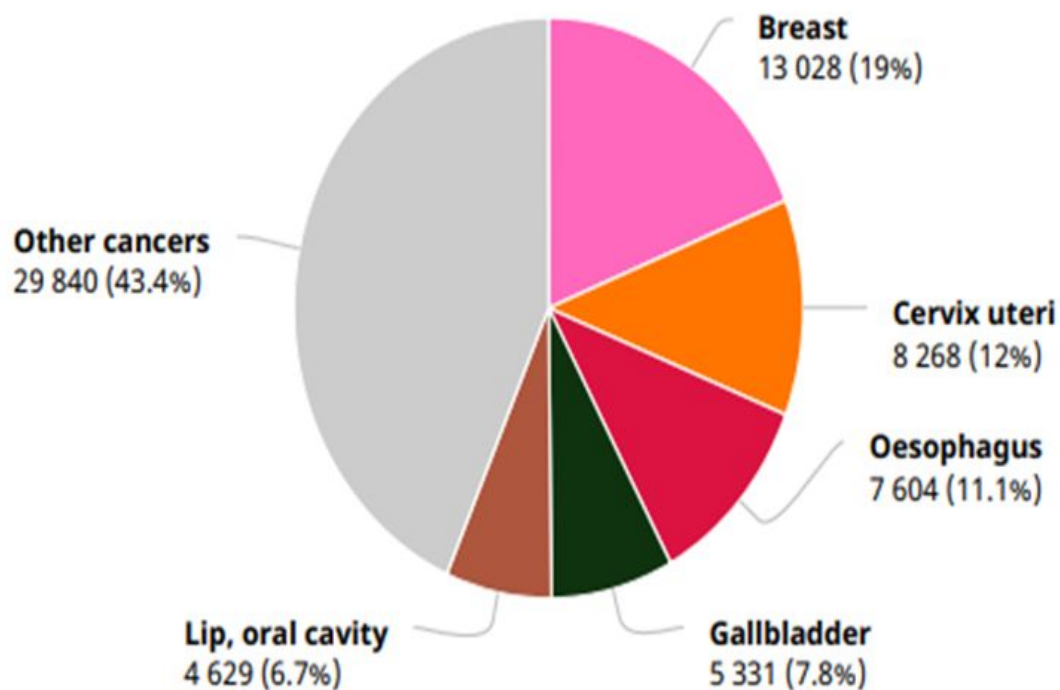
Children: Leukemia, Brain tumors and Lymphomas

Number of new cases in 2020, males, all ages



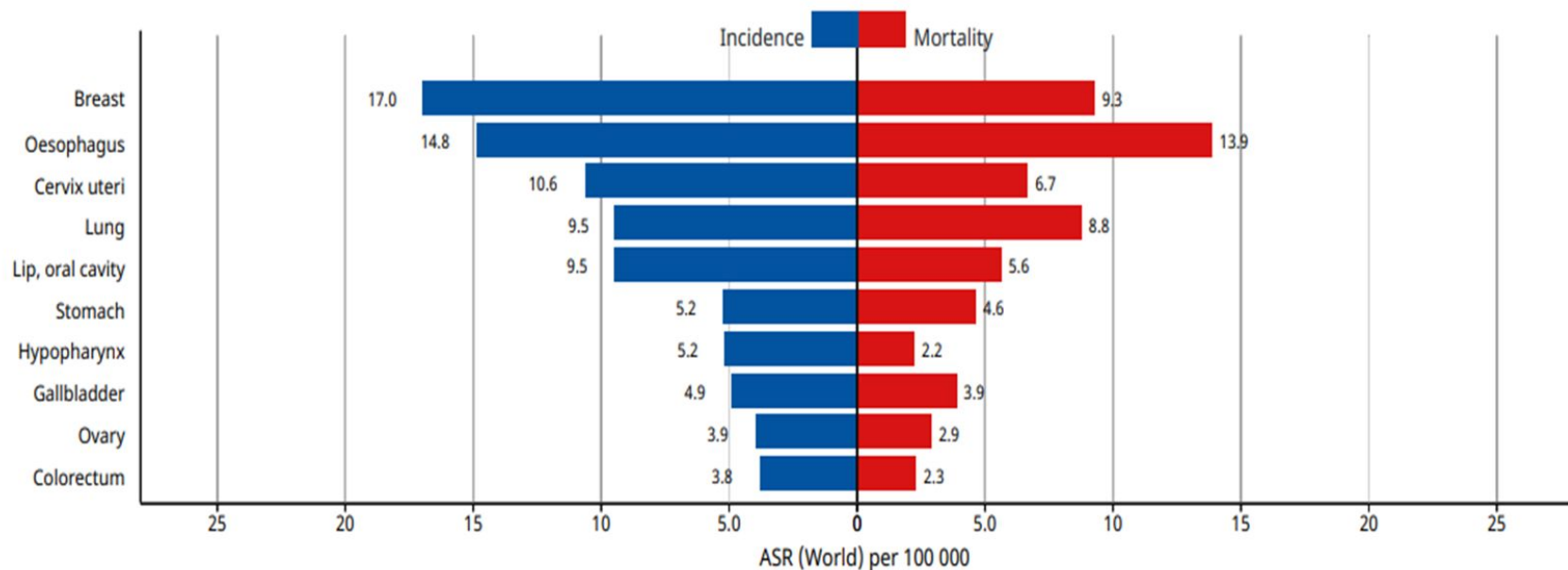
Total: 88 075

Number of new cases in 2020, females, all ages



Total: 68 700

Age-standardized (World) incidence and mortality rates, top 10 cancers



Approaches to control Cancer

There are four principal approaches to cancer control:

- Prevention
- Early Detection
- Diagnosis and Treatment
- Palliative care

Prevention

- Avoid use of tobacco and alcohol
- Get vaccinated
- Eat a healthy diet
- Maintain a healthy weight
- Increase physical activity
- Protect from the sun
- Get regular medical care



Treatment of Cancer

There are four standard methods:

- Surgery
- Chemotherapy
- Radiation therapy
- Immunotherapy/biologic therapy

Palliative Care

- This is the care and support given to improve the quality of life of patients
- Psychological, social, and spiritual problems are taken care of

Case 1

Mr. Rahman, 69-year-old male with a history of smoking 40 pack-year presented with the complaints of productive cough for 7 months, loss of weight of 6 kg over last 6 months and low grade fever for 3 months. On examination there was no significant finding.

**What are the possible
differentials?**

Case 2

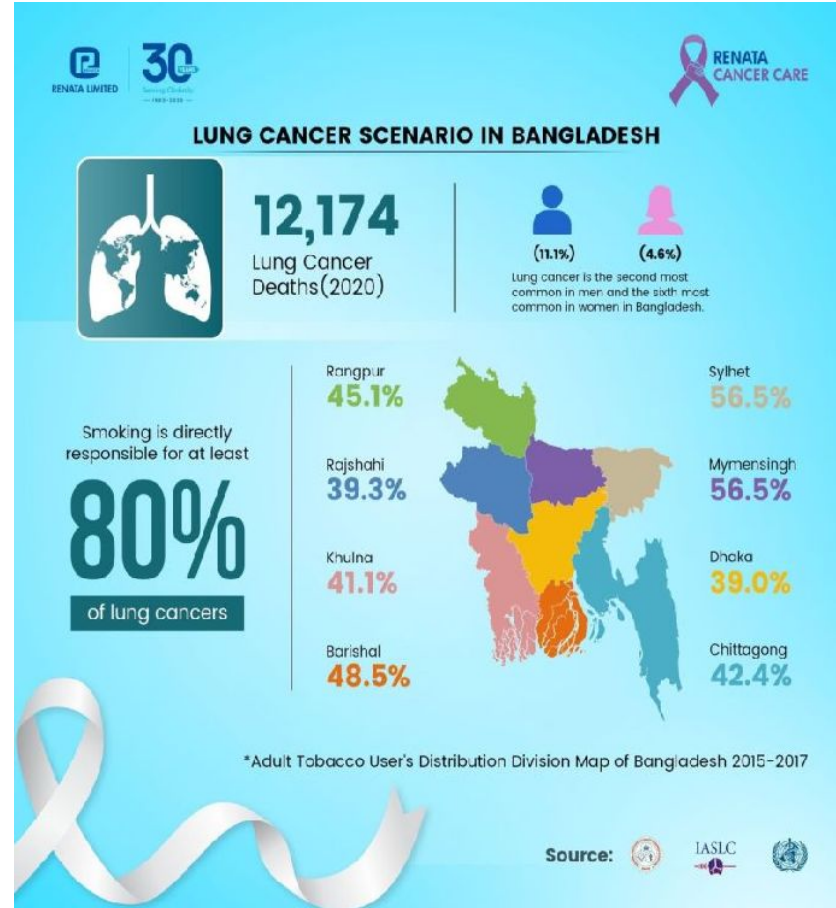
A 60-year old male smoker with history of 30 pack year presented with confusion for 1 day, 1 episode of haemoptysis 1 week back, weight loss for 6 months and occasional cough for 1 year. On examination there was no significant finding. Serum electrolytes revealed sodium level of 125 mmol/L.

The patient did not have any history of diarrhea or vomiting or any drug induced hyponatremia.

**What are the possible
differentials?**

LUNG CANCER

In Bangladesh, cancer is responsible for 10% of all deaths. Among them lung cancer is the second most common in men (11.1% of new cases) and the sixth most common in women (4.6%)



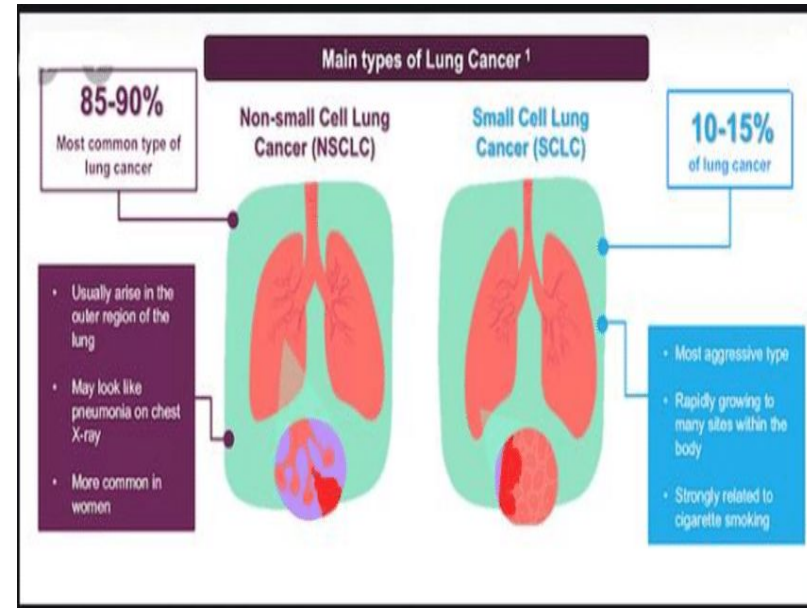
CLASSIFICATION

- Primary: Bronchogenic Carcinoma
- Secondary: Common sites are metastasis from colon, breast, prostate, kidney, thyroid, bladder, ovary

CLASSIFICATION

Classification of bronchogenic carcinoma:

- Small cell carcinoma
- Non small cell carcinoma:
 - Adenocarcinoma
 - Squamous cell carcinoma
 - Large cell carcinoma



Presentation

Symptoms:

- Cough (including change in the regular pattern of smoker's cough)
- Haemoptysis
- Shortness of breath
- Chest pain
- Weight loss

Signs:

- Finger Clubbing
- Dorsal Guttering of hands
- Lymphadenopathy
- Cyanosis
- Anaemia
- Signs of lung collapse such as dullness on percussion, reduced breath sounds
- Signs of airway obstruction such as wheeze, stridor

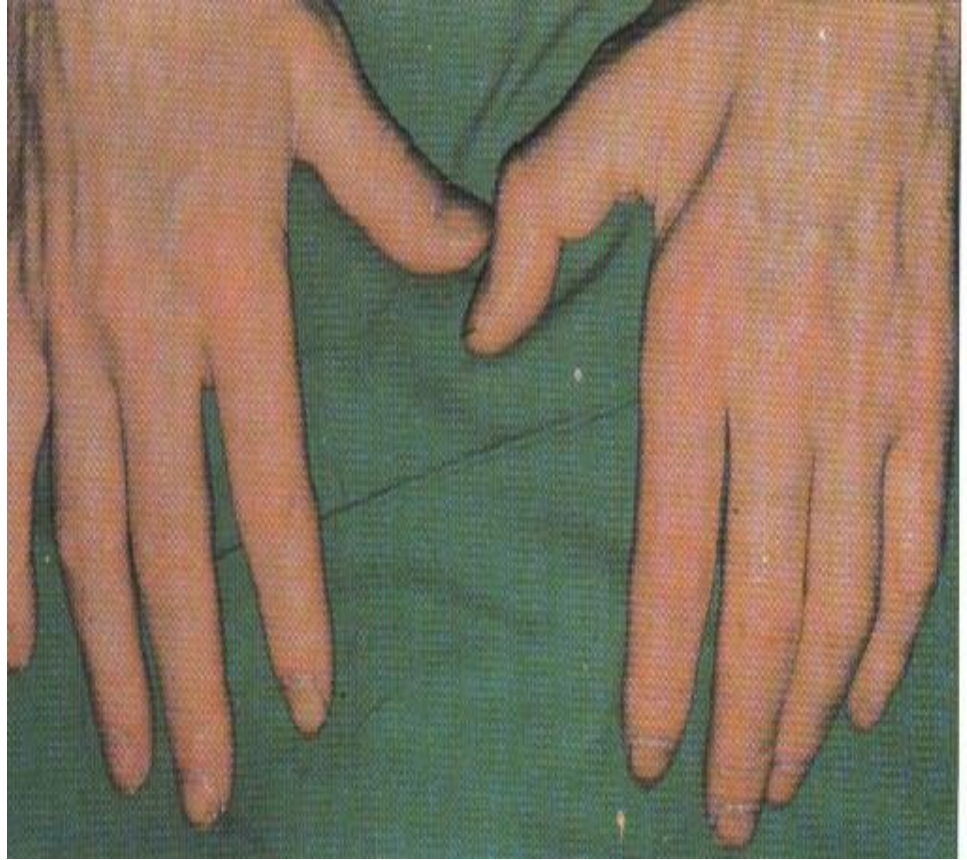
- Bronchial obstruction- Collapse



- **Horner's syndrome:**
Ptosis, miosis, enophthalmos and anhidrosis



- **Pancoast syndrome**
(pain in the inner aspect of the arm, sometimes with small muscle wasting in the hand)



Mediastinal spread

- Dysphagia
- Arrhythmia
- Pericardial effusion
- Bovine cough and alteration of voice

- **Superior vena caval obstruction**



Metastatic Spread-

- Focal neurological defects
- Epileptic seizures
- Personality change
- Jaundice
- Bone pain
- Skin nodules

Paraneoplastic syndromes

Small cell carcinoma:

- SIADH causing to hyponatremia
- Ectopic ACTH production
- LEMS (Lambert Eaton Myasthania Syndrome)

Adenocarcinoma:

- Hypercalcemia due to secretion of parathyroid hormone related peptides (PTHrP)
- Gynaecomastia
- Paraneoplastic ataxia

Paraneoplastic syndromes

Squamous cell carcinoma:

- Clubbing
- Hypertrophic pulmonary osteoarthropathy
- Hypercalcemia due to PTHrP
- Ectopic TSH production

Paraneoplastic syndromes

- Nephrotic syndrome
- Polymyositis
- Dermatomyositis
- Eosinophilia
- Polyneuropathy
- Myelopathy

Complications

- Recurrent pleural effusion
- Recurrent pneumonia
- Respiratory failure

INVESTIGATIONS

Initial tests:

- CBC: possible findings include low Hb, high ESR
- Sputum for cytology for malignant cells, AFB, Gene Xpert, Gram stain, C/S

INVESTIGATIONS

Imaging:

- Chest X ray : Mass lesions, pleural effusion, lobar collapse, malignant rib destruction
- Contrast enhanced CT scan: Mediastinal/metastatic spread

How can we confirm the diagnosis ?

Biopsy and Histopathology:

- Flexible bronchoscopy and biopsy
- Percutaneous needle biopsy under CT guidance
- Pleural aspiration and biopsy in patients with pleural effusion
- Needle aspiration or biopsy of affected lymph nodes, skin lesions, liver or bone marrow in those with metastatic disease

Case 1

Mr. Rahman 69-year old, male, smoker, farmer by occupation presented with the complaints of productive cough for 7 months, loss of weight of 6 kg for 6 months. On examination there was no significant finding. Sputum cytology was done and revealed no malignant cells



Chest X ray was done which came back normal

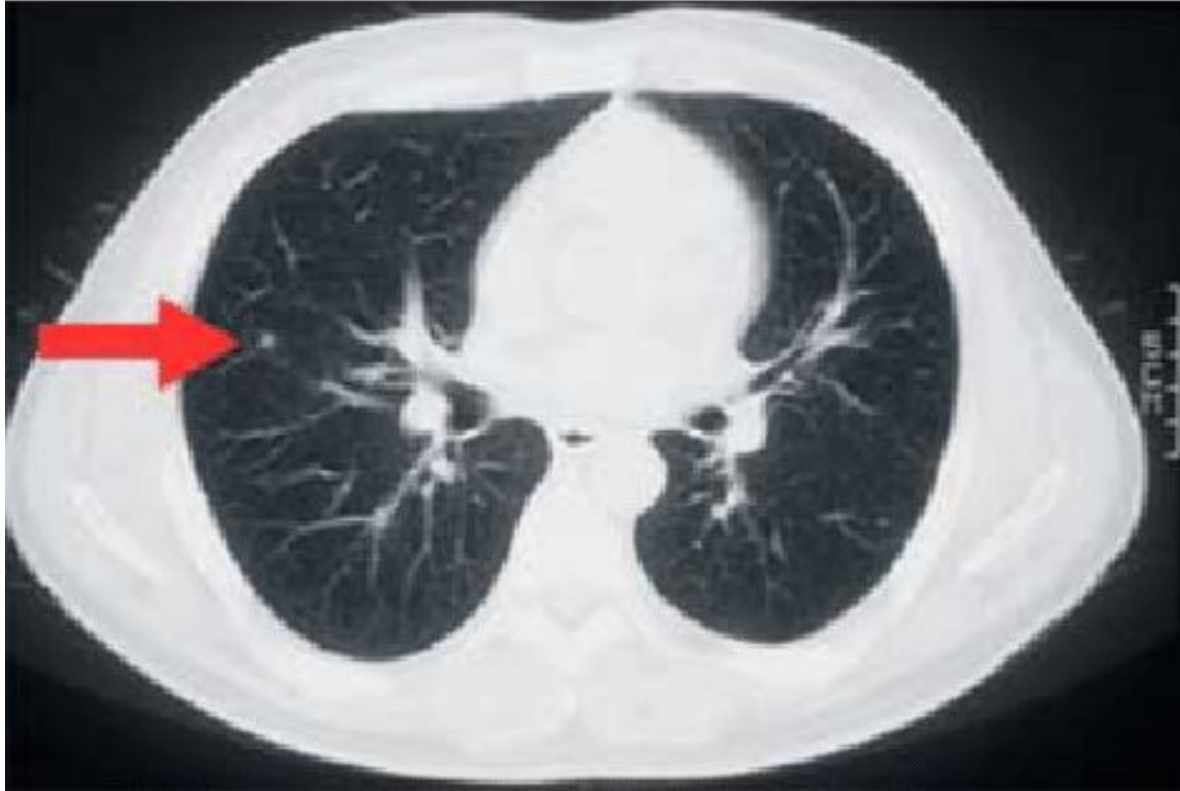
He received several courses of antibiotic but his symptoms did not improve

He was then started on a trial of anti tubercular therapy

However his symptoms did not improve after 2 months of antitubercular therapy and he started to complain of episodes of hemoptysis

A chest CT was done on suspicion of lung cancer

CT scan revealed a small nodular opacity on the right lung field



Percutaneous needle biopsy was taken under CT guidance and histopathology revealed **squamous cell carcinoma** of the right lung

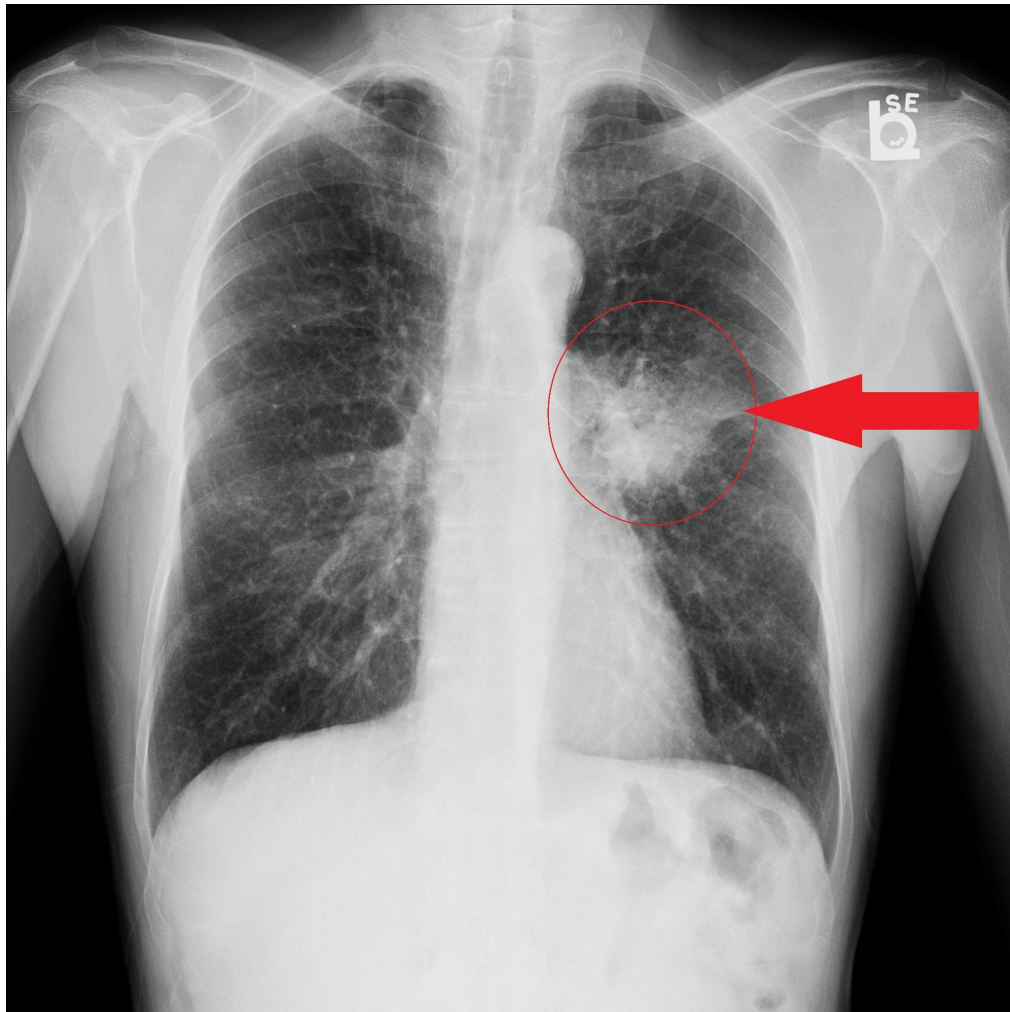
Case 2

A 60-year old male smoker with history of 30 pack year presented with confusion for 1 day, 1 episode of haemoptysis 1 week back, weight loss for 6 months and occasional cough for 1 year. On examination there was no significant finding. Serum electrolytes revealed sodium level of 125 mmol/L.

The patient did not have any history of diarrhea or vomiting or any drug induced hyponatremia

CBC did not reveal any abnormalities. SIADH was suspected

A chest X ray was then done which revealed a hilar opacity in the left lung

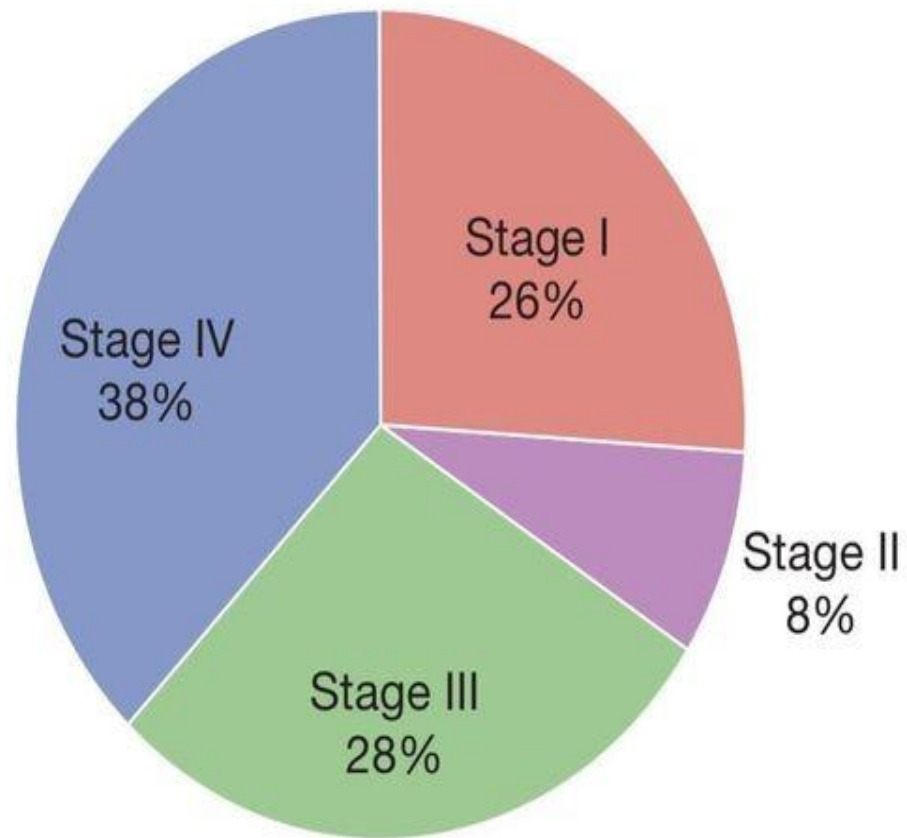


A bronchoscopic biopsy was obtained which revealed **small cell carcinoma** on histopathological study

Screening and Early Detection in the context of Bangladesh:

- At the moment, Bangladesh lacks a formal lung cancer screening program
- Despite the availability of low-dose CT in Bangladesh, screening is only accessible through out-of-pocket payment for high-risk individuals

Stage distribution at the time of diagnosis



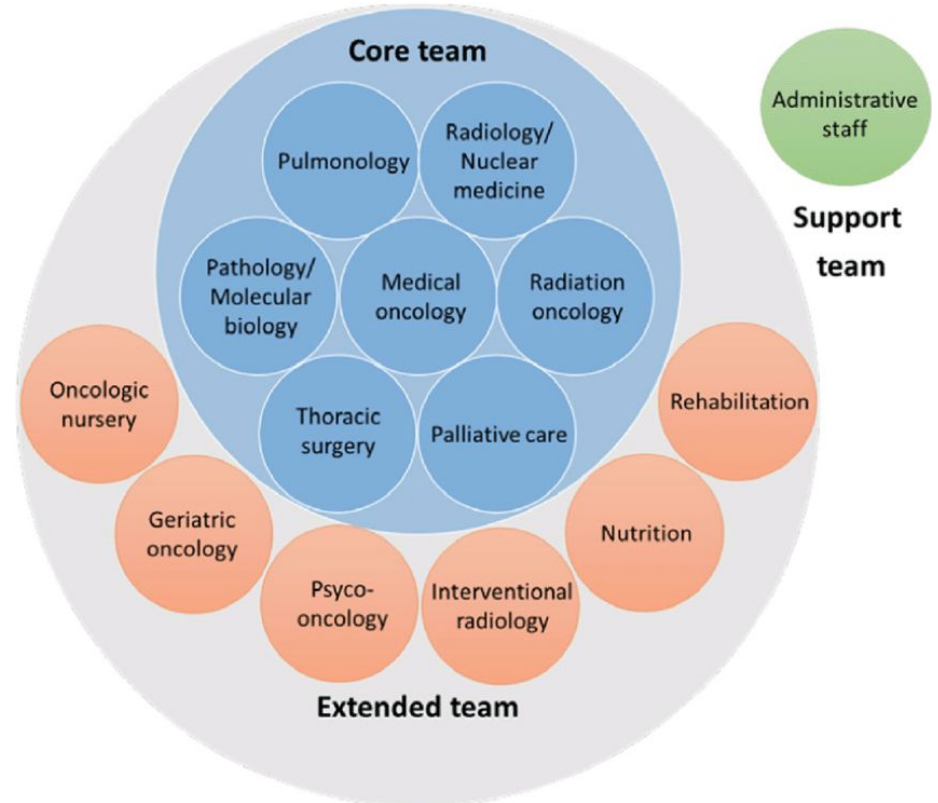
Late stage diagnosis of lung cancer can occur due to

- Absence of appropriate screening tools
- Limited access to healthcare facilities
- Delayed consultations after symptom onset
- Inappropriate use of antitubercular regimens
- Delays in conducting diagnostic tests

- Biopsy is the standard method for confirming a histologic diagnosis
- Due to limited resources and financial constraints, many centers resort to fine-needle aspiration cytology for diagnosis rather than biopsy

Management

Management of lung cancer requires a multi disciplinary approach involving oncologists, thoracic surgeons, respiratory physicians, psychologists etc



Management Options

- Surgical Treatment
- Radiotherapy
- Chemotherapy
- Systemic therapy (targeted therapy and immunotherapy)
- Palliative Care Options
- General Management

Surgical Treatment

- Surgery is the main curative treatment for early stage lung cancer
- Offers 5 year survival rates of over 75% in stage 1 disease (tumour confined within visceral pleura) and 55% in stage 2 disease (ipsilateral peribronchial or hilar node involvement)

Performing thoracic surgery in Bangladesh comes with certain challenges. These include:

- ❖ High cost of the procedure
- ❖ Patient-related factors such as-
 - Smoking
 - Poor nutritional status
 - Reduced lung capacity
- ❖ Limited number of skilled thoracic surgeons
- ❖ High prevalence of tuberculosis and other infectious diseases leading to dense pleural adhesions, making surgery more difficult

Despite these challenges, the mortality rate associated with thoracic surgery in Bangladesh is relatively low, at approximately 3.3%

Radiotherapy (RT)

RT is a treatment option for lung cancer at all stages, including:

- Postoperative RT for positive surgical margins
- Definitive RT for early stage disease
- Concurrent or sequential chemo-RT for locally advanced disease
- Palliative RT for metastatic disease

- According to the WHO, Bangladesh needs approximately 160 to 180 RT centers
- The country currently has 15 government-operated centers and 11 non government operated centers

Chemotherapy

- Chemotherapy is the mainstay of treatment for small cell carcinoma
- In general chemotherapy is less effective for non small cell cancers

Chemotherapy available for Lung Cancer in Bangladesh

- Cisplatin
- Carboplatin
- Cyclophosphamide
- Docetaxel
- Doxorubicin/Epirubicin
- Etoposide
- Gemcitabine
- Irinotecan

Newer Modalities of Treatment

The introduction of targeted therapy and immunotherapy has led to significant changes in the systemic treatment of NSCLC

Newer modalities of treatment

Targeted Therapies:

- Afatinib
- Alectinib
- Brigatinib
- Crizotinib
- Erlotinib
- Gefitinib
- Osimertinib

Immunotherapy:

- Pembrolizumab
- Nivolumab

Palliative Care Options

When no curative treatment is possible the following options can be of use:

- Palliative bronchoscopic laser treatment and endobronchial stenting
- Malignant pleural effusions:
 - Drainage with intercostal drain
 - Long term indwelling pleural catheters
 - Pleurodesis with sclerosing agents such as talc

General Management

- Nutritional support
- Psychological support

Management in Case 1

A PET scan was done for the patient which revealed no metastatic disease

As the disease was confined to the right lung surgical resection was performed (Lobectomy of the affected segment)

Management in Case 2

PET scan revealed metastatic spread to liver and bones

SIADH was treated with fluid restriction. As this was a case with distant metastasis, the patient could not receive any curative treatment and was rather treated with palliative radiotherapy

Prognosis

- The overall prognosis in bronchial carcinoma is very poor, with around 70% of patients dying within a year of diagnosis and only 6-8% of patients surviving 5 years after diagnosis
- The best prognosis is with well differentiated squamous cell tumours that have not metastasized and are amenable to surgical resection

Take Home Message

- Build awareness about prevention of cancer
- For lung cancer early diagnosis is important
- High index of suspicion is required, especially in smokers
- Normal chest x ray cannot always rule out lung cancer

THANK YOU