

Chapter 15

The Lung:

1. All of the following cause compressive atelectasis EXCEPT (*2004 old paper*)
 - (a) Pneumothorax
 - (b) Asthma
 - (c) Congestive cardiac failure
 - (d) Peritonitis
 - (e) Pleural effusion

2. Resorption atelectasis (*2004 old paper*)
 - (a) leads to the resorption of oxygen trapped in the dependent alveoli
 - (b) leads to mediastinal shift away from the affected lung
 - (c) is often irreversible
 - (d) is a rare complication post operatively
 - (e) is commonly seen with bronchial neoplasms

3. Pulmonary oedema
 - (a) caused by microvascular injury, is usually due to an increased capillary hydrostatic pressure
 - (b) of long standing, causes brown induration that is protective against infection
 - (c) caused by left heart failure, is due to increased plasma oncotic pressure
 - (d) secondary to pneumonia causes diffuse alveolar oedema, and is the most likely cause of death from the disease
 - (e) none of the above is true

4. In acute respiratory distress syndrome,
 - (a) the alveolar wall become lined with waxy hyaline membranes
 - (b) most of the endothelial damage is done to the alveolar epithelium
 - (c) the exudate produced can usually be resolved
 - (d) the damage is usually T cell mediated
 - (e) chest radiographs show diffuse bilateral infiltrates initially

5. In acute respiratory distress syndrome,
 - (a) the functional abnormalities are homogenously distributed throughout the lungs
 - (b) the infiltration of inflammatory cells means that the patient usually won't develop pneumonia as a complication
 - (c) the condition is usually responsive to oxygen therapy
 - (d) the mortality rate is high at 20%
 - (e) the lungs can be divided into infiltrated, consolidated, or collapsed areas

6. Acute interstitial pneumonia
 - (a) has a mean age of 30 for affected patients
 - (b) has no known aetiology

- (c) affects men far greater than women
- (d) has a low mortality rate of 5%
- (e) often follows an untreated urinary tract infection

7. The type of emphysema commonly caused by cigarette smoking is

(2004 old paper)

- (a) pan acinar
- (b) centriacinar
- (c) distal acinar
- (d) irregular
- (e) none of the above

8. Regarding the effects of cigarette smoking

- (a) Neutrophils and macrophages accumulate in the alveoli, possibly due to the direct actions of nicotine
- (b) There is no clear-cut association between heavy cigarette smoking and emphysema
- (c) Smoking causes an α_1 -antitrypsin deficiency by reducing production of the antiprotease
- (d) Emphysema caused by smoking is predominantly due to macrophage action
- (e) none of the above is true

9. Regarding emphysema

- (a) Expiratory airflow obstruction, measured with spirometry, makes the diagnosis
- (b) Weight loss is rare
- (c) Blood gas analysis is usually abnormal at rest
- (d) The clinical manifestations usually appear with loss of one quarter of the functioning pulmonary parenchyma
- (e) patients usually have a purulent productive cough

10. In emphysema (*old paper*)

- (a) a deficiency in α 1-antitrypsin is protective
- (b) centriacinar destruction leads to obstructive overinflation
- (c) the protease-antiprotease mechanism is the most plausible explanation of the disease
- (d) smokers have increased numbers of macrophages in the bronchi
- (e) elastase activity is unaffected by oxygen free radicals

11. Chronic bronchitis is characterised by (*old paper 2004*)

- (a) smooth muscle hypertrophy
- (b) leukocyte infiltration
- (c) mucus gland hypertrophy
- (d) increased size of goblet cells
- (e) a persistent cough for a year

12. The major morphological changes seen in chronic bronchitis include (*old paper*)

- (a) leukocyte infiltration
- (b) decreased goblet cell number
- (c) smooth muscle hypertrophy
- (d) increased mucosal gland depth (Reid index)
- (e) a Reid index of 0.4

13. In chronic bronchitis (*old paper*)

- (a) The hallmark is hypersecretion of mucus in the large airways
- (b) there is a marked increase in goblet cells in the main bronchi
- (c) infection is a primary cause
- (d) cigarette smoke stimulates alveolar leukocytes
- (e) dysplasia of the epithelium leads to emphysema

14. Regarding the pathogenesis of chronic bronchitis

- (a) Repeated infection is central to the development of the disease
- (b) When bronchitis is accompanied by moderate airflow obstruction, bronchiolitis is the dominant lesion
- (c) Goblet cell overactivity is a dysplastic change against the toxic effects of airborne pollutants, such as tobacco smoke
- (d) The disease is now most frequent in middle-aged women
- (e) none of the above are true

15. Regarding asthma

- (a) there has been no significant increase in the number of patients affected in the Western world, but rates are rising in Third world countries
- (b) intrinsic asthma refers to asthma induced by exposure to an inhaled allergen
- (c) Atopic asthma is the most common type
- (d) The disease may be due to an increased number of Type 1 helper cell (T_{H1})
- (e) in status asthmaticus, bronchiolitis obliterans is a common complication

16. Nonatopic asthma

- (a) is typically triggered by bacterial respiratory infection
- (b) have normal serum IgE levels
- (c) produces positive skin tests
- (d) is also called extrinsic type asthma
- (e) includes those affected by occupational asthma

17. What morphological features are NOT seen in asthma? (*old paper 2004*)

- (a) Curschmann spirals
- (b) Charcot-Leyden crystals
- (c) Thickened basement membrane
- (d) increased size of the submucosal glands
- (e) prominence of basophils and mast cells in the bronchial walls

18. In bronchial asthma (*old paper*)

- (a) extrinsic asthma is initiated by diverse non-immune mechanisms
- (b) bronchial wall smooth muscle is atrophic
- (c) immunoglobulin G (IgG) plays a role
- (d) sub-epithelial vagal receptors in the respiratory mucosa are insensitive to irritants
- (e) primary mediators include eosinophilic and neutrophilic mediators

19. In extrinsic asthma

- (a) when IgE is cross-linked by allergen on the surface of mast cells, they produce mediators that open tight junctions between epithelial cells
- (b) the process is best described as a type II hypersensitivity reaction
- (c) inhaled allergens elicit a T helper 2 dominated (T_H2) cell response favouring IgE production
- (d) factors such as major basic protein inhibit further epithelial damage
- (e) antigen that triggers the immune response remains in the airways

20. Intrinsic asthma (*old paper*)

- (a) is the classic example of a type I hypersensitivity reaction
- (b) is the most common type of asthma
- (c) is triggered by viral infections
- (d) patients have raised IgE levels
- (e) patients are positive for allergy skin tests

21. Aspirin induced asthma

- (a) is not a contraindication for its use in ischaemic heart disease
- (b) occurs in patients with allergic rhinitis and nasal polyps
- (c) only occurs if large doses of aspirin are administered
- (d) is caused because aspirin paradoxically induces the cyclooxygenase pathway in these patients
- (e) presents as asthma, with no other concomitant symptoms

22. Bronchiectasis

- (a) usually arises from chronic bronchoconstriction
- (b) can arise as a complication of rheumatoid arthritis
- (c) has characteristic reversible bronchial dilation
- (d) is still a very common condition
- (e) has characteristic marked hypersecretion of mucus in the large airways

23. Bronchiectasis

- (a) requires repeated infections as the primary aetiology
- (b) is sometimes caused after influenza infection
- (c) is not a feature of inflammatory bowel disease
- (d) has clinical findings of chronic cough, fever and clear sputum
- (e) seen in cystic fibrosis is primarily due to repeated infection

24. The morphology of bronchiectasis

- (a) shows airway dilation up to four times normal size
- (b) usually affects the upper lobes
- (c) is usually unilateral, affecting only one lung
- (d) does not show metaplastic change
- (e) shows consistency of histological findings, that are independent of activity or chronicity of the disease

25. Regarding interstitial lung disease

- (a) Idiopathic pulmonary fibrosis is thought to be T helper 1 cell (T_H1) mediated
- (b) Idiopathic pulmonary fibrosis is best described as a chronic bronchiolitis
- (c) Desquamative interstitial pneumonia is thought to be a smoking related disorder
- (d) Radiation pneumonitis tends to cause granulomatous interstitial disease
- (e) Clubbing is an early clinical sign

26. In rheumatoid arthritis patients, the lung can be affected by the following conditions *except*

- (a) Chronic pleuritis
- (b) diffuse interstitial pneumonitis and fibrosis
- (c) intrapulmonary rheumatoid nodules
- (d) squamous metaplasia of the bronchi
- (e) pulmonary hypertension

27. Regarding pneumoconioses

- (a) There has been a steady increase in the numbers of patients with this disease
- (b) The most dangerous inhaled particles range from 1 to $5\mu\text{m}$
- (c) Larger air particles cause a greater inflammatory response and hence acute lung injury
- (d) Silica inhibits the actions of macrophages, which leads to this type of lung fibrosis
- (e) With continued exposure, all individuals will develop occupational respiratory diseases

28. Coal workers pneumoconiosis

- (a) causes increased susceptibility to tuberculosis
- (b) of the complicated type is common and affects all coal workers after a period
- (c) causes coal nodules
- (d) of the mild type (anthracosis) is peculiar to coal workers
- (e) predisposes the affected patient to lung cancer

29. Silicosis

- (a) is less prevalent than other exposure related respiratory diseases
- (b) caused by inhalation of amorphous silica is much more fibrogenic than crystalline quartz forms
- (c) is caused by toxic silica induced destruction of macrophages
- (d) type fibrosis caused by inhaled silica is less pronounced when mixed with other minerals
- (e) is usually detected when the patient becomes more dyspnoeic, and pulmonary function is markedly reduced

30. Regarding asbestos related illnesses

- (a) Family members of asbestos workers are not at increased risk of asbestos related cancers
- (b) Mesothelioma but not lung carcinoma is a common cancer related to asbestos exposure
- (c) Serpentine asbestos fibre types are the most pathogenic
- (d) Asbestos acts as a tumour initiator and promoter
- (e) Concomitant smoking is not an increased risk for carcinoma related to asbestos exposure

31. Regarding asbestos related illness

- (a) The most common finding with asbestos exposure is asbestos bodies
- (b) The most common finding with asbestos exposure is pleural plaques
- (c) Pleural plaques develop most commonly in the apices of the lung pleura
- (d) Pleural plaques contain asbestos bodies
- (e) Pleural effusions are a common occurrence in asbestos related disease

32. Sarcoidosis

- (a) is caused by exposure to silica compounds
- (b) causes caseating granulomas
- (c) causes bilateral hilar lymphadenopathy
- (d) causes eye and skin lesions most commonly, and lung pathology is less common
- (e) is more common in men

33. Regarding the morphology of sarcoid

- (a) Only the lung shows the classic granulomas
- (b) Central necrosis is common
- (c) Asteroid bodies enclosed within giant cells are present
- (d) Schaumann bodies are pathognomonic for sarcoid
- (e) Lymph node involvement is rare

34. Regarding sarcoidosis

- (a) The spleen is rarely affected
- (b) skin lesions occur in one third to one half of patients
- (c) Muscle involvement is common and usually symptomatic
- (d) Patients presenting with hilar lymphadenopathy alone have a poor prognosis
- (e) Most patients do not recover from this disease

35. Hypersensitive pneumonitis

- (a) is a complication of asthma
- (b) occurs most commonly after continued exposure to non-organic dusts
- (c) is caused in part by a type III (immune complex) hypersensitivity
- (d) is also called allergic bronchiolitis
- (e) causes caseating granulomas

36. Simple pulmonary eosinophilia

- (a) with acute eosinophilic pneumonia responds well to antibiotics that cover atypical infection
- (b) of Löffler syndrome is rapidly fatal
- (c) has intrinsic asthma as a primary example
- (d) associated with simple pulmonary eosinophilia has striking radiographs, but a benign clinical course
- (e) unlike other interstitial disorders, simple type eosinophilia does not produce giant cells

37. Smoking is associated with **(old paper, but only one answer from it)**

- (a) increased mesothelioma rates in asbestos workers
- (b) obstructive diseases such as emphysema, but not interstitial lung disease
- (c) chronic liver disease
- (d) particle deposition in alveolar macrophages
- (e) Löffler syndrome

38. Regarding pulmonary alveolar proteinosis

- (a) The congenital form of the disease represents most of the cases
- (b) It is an autoimmune disorder
- (c) Histologically, there is a highly cellular exudate
- (d) Secondary pulmonary alveolar proteinosis is common
- (e) Congenital forms of the disease are mild

39. Pulmonary Embolism

- (a) from de novo large-vessel in situ thromboses are rare
- (b) occurs in 30% of patients dying after severe burns
- (c) is the cause of death in approximately 10% of hospitalised patients
- (d) can occur as a complication of central venous lines
- (e) all of the above is true

40. Regarding pulmonary emboli
- (a) Most emboli cause pulmonary infarction
 - (b) The pulmonary infarct is classically haemorrhagic
 - (c) Death is sometimes caused by acute left heart failure
 - (d) Hypothermia is a common clinical finding
 - (e) Patients who have an embolus have a 3% chance of developing a second embolus
41. Regarding pulmonary hypertension
- (a) The normal pulmonary blood pressure is 25% that of the systemic pressure
 - (b) Pulmonary hypertension is usually a primary disease
 - (c) Hypertension resulting from diseases such as emphysema occur because of chronic precapillary vasoconstriction
 - (d) It is defined as an increase in mean pulmonary pressure to one fourth that of the mean arterial pressure
 - (e) It is one of the few causes of sudden death
42. Regarding respiratory infection
- (a) In women, urinary tract infections are more prevalent than respiratory infections
 - (b) Pneumonia defines an infective process in the lung parenchyma
 - (c) The most common cause of death in viral influenza epidemics is bacterial pneumonia
 - (d) The respiratory tract is the portal of entry for the development of pneumonias
 - (e) The most common cause for nosocomial pneumonia is *Strep pneumoniae*
43. Regarding community acquired pneumonias
- (a) *S pneumoniae* is part of the endogenous flora in 20% of adults
 - (b) They are mostly bacterial or viral
 - (c) 50% of patients have positive blood cultures
 - (d) *S pneumoniae* is invariably sensitive to penicillin
 - (e) Because of immunisation for *S pneumoniae*, *H influenzae* has replaced *S pneumoniae* as the most common pathogen responsible
44. Regarding Haemophilus influenzae
- (a) The encapsulated form of the bacteria is the most common form found in the oropharynx
 - (b) Type c causes the most serious invasive disease
 - (c) Pneumonia caused by this pathogen is usually lobar
 - (d) *H influenzae* is found in the pharynx of 30% of adults
 - (e) *H influenzae* is the most common pathogen for acute exacerbation of chronic obstructive pulmonary disease (COPD)
45. *Moraxella catarrhalis*
- (a) is a common cause of pneumonia in the elderly
 - (b) is the second most common cause of acute exacerbation of chronic obstructive pulmonary disease (COPD)
 - (c) is a common cause for acute otitis media in children
 - (d) all of the above is true
 - (e) none of the above is true

46. Regarding *Staph Aureus* pneumonia
- (a) It is a common pneumonia in association with endocarditis in IV drug users
 - (b) Whilst virulent, *S Aureus* pneumonia does not lead to post infective complications
 - (c) It commonly afflicts malnourished individuals and alcoholics
 - (d) It is a common cause of secondary bacterial pneumonia following mumps infection
 - (e) It is generally a community-acquired pneumonia
47. Regarding *Legionella* pneumonia
- (a) Organ transplant recipients are particularly susceptible
 - (b) *Legionella* antigens in the urine is the gold standard of diagnosis
 - (c) Legionnaires disease is also known as Pontiac fever
 - (d) One mode of transmission is thought to be from drinking contaminated water
 - (e) none of the above is true
48. In bacterial pneumonia (*old paper*)
- (a) patchy consolidation of the lung is the dominant characteristic of bronchopneumonia
 - (b) a lobar distribution is a function of anatomical variation
 - (c) *Klebsiella* pneumonia is a common pathogenic agent
 - (d) alveolar clearance of bacteria is achieved by lymphocytes
 - (e) The nasopharynx is inconsequential in defending the lung against infection
49. Lobar pneumonia (*old paper*)
- (a) is rarely caused by streptococci
 - (b) involves morphological changes of red to grey hepatisation
 - (c) is not usually associated with a productive cough
 - (d) is associated with immunosuppression
 - (e) is more common in the young and the elderly
50. From first to last, the morphological changes in lobar pneumonia occur in which correct chronological order?
- (a) grey hepatisation, red hepatisation, congestion, resolution
 - (b) red hepatisation, grey hepatisation, congestion, resolution
 - (c) congestion, grey hepatisation, red hepatisation, resolution
 - (d) congestion, red hepatisation, grey hepatisation, resolution
 - (e) congestion, red hepatisation, grey hepatisation, interstitial fibrosis
51. Which of the following is NOT a complication of pneumonia
- (a) abscess formation
 - (b) empyema
 - (c) organisation
 - (d) suppurative arthritis
 - (e) squamous metaplasia

52. Regarding community acquired infective pneumonitis
- (a) It can have a similar alveolar pattern of damage to that seen in acute respiratory distress syndrome (ARDS)
 - (b) The pneumonic involvement is always patchy
 - (c) Pleural effusions are common
 - (d) They are associated with a very elevated white cell count
 - (e) usually causes post infection fibrosis of the lungs
53. Regarding the influenza virus
- (a) antigenic shift is the mutation the haemagglutinin and neuramidase that allow the virus to escape host antibodies
 - (b) antigenic drift is the replacement of the haemagglutinin and neuramidase, through the recombination of RNA segments with those of animal viruses
 - (c) Influenza type B and C do not show antigenic drift or shift
 - (d) Type A does not affect birds
 - (e) It is a double stranded DNA virus
54. Regarding nosocomial pneumonia
- (a) They are common in patients, even without severe underlying disease
 - (b) Prolonged antibiotic therapy in hospital is preventative
 - (c) Gram negative rods are common pathogens
 - (d) Strep pneumoniae is a common pathogen
 - (e) This is not deemed a life-threatening disease in most patients
55. Regarding lung abscess
- (a) It is most frequently seen in bronchiectasis
 - (b) Abscess caused by aspiration are more common on the right
 - (c) Usually only one abscesses will develop as a result of infection
 - (d) They are always filled with suppurative debris
 - (e) Underlying carcinoma is present in 40% of cases
56. Regarding chronic pneumonia
- (a) It is most often seen in the immunocompromised
 - (b) There is usually long standing suppurative inflammation
 - (c) Some fungal infections, such as histoplasmosis, resemble tuberculosis infection
 - (d) Histoplasmosis is unlike other fungi in that it does not produce hyphae
 - (e) Unlike Candida, Histoplasma pneumonia in HIV patients is rare
57. Regarding pneumonia in HIV infected patients
- (a) Pulmonary non-Hodgkin lymphoma needs exclusion in these patients
 - (b) Patients are most commonly affected by atypical opportunistic infections, rather than the common pathogens for community acquired pneumonia
 - (c) Mycobacterium avium is a common pathogen in the early stages of immunosuppression
 - (d) Tuberculosis infection occurs in the late stages of immunosuppression
 - (e) none of the above is true

58. The incidence of lung cancer

- (a) is decreasing in women
- (b) is now higher than the incidence of breast cancer in women
- (c) has a peak incidence in the seventies age group
- (d) has 10% of cases occurring before the age of 40
- (e) has increased with an increase in smoking rates in the 1980's

59. Squamous cell lung carcinoma (*old paper*)

- (a) has a five year survival rate of 60%
- (b) is closely correlated with a smoking history
- (c) is commonest at the periphery of the lung
- (d) is commonest in females
- (e) metastasises at a very early stage

60. Regarding bronchogenic carcinoma (*old paper*)

- (a) It most often arises in or about the hilum of the lung
- (b) distant metastasis is solely due to lymphatic spread
- (c) metastases most commonly appear in the liver
- (d) small cell carcinoma is the most common type
- (e) surgical resection is often effective for small cell carcinoma

61. Adenocarcinoma

- (a) is most common in men
- (b) is the most common lung cancer in smokers
- (c) most commonly occurs in or around the hilum
- (d) tends to metastasise early and widely around the body
- (e) produce large lesions

62. Small cell carcinoma

- (a) is the most common type of cancer in the lung
- (b) occurs mainly in the periphery of the lung
- (c) are always high grade
- (d) unlike squamous cell carcinoma, have no causal relationship with smoking
- (e) are unlikely to produce hormones, as they are so undifferentiated

63. Regarding pleural effusions

- (a) Normally 15mL of serous acellular clear fluid lubricates the pleural surfaces
- (b) Pathological effusion is in 50% of cases due to primary pleural pathology
- (c) Haemorrhagic pleuritis is usually associated with infection
- (d) Haemothorax is commonly associated with tumour
- (e) Empyema is commonly due to infection in the same lung

Answers:

1. All of the following cause compression atelectasis EXCEPT (2004 old paper) p714

- (a) Pneumothorax
- (b) asthma: Resorption atelectasis, caused by mucus plugs.**
- (c) congestive cardiac failure
- (d) Peritonitis (causes abnormal elevation of the diaphragm)
- (e) Pleural effusion

Compression atelectasis occurs whenever there is compression of lung tissue, because the pleural cavity is filled with a solid tumour, fluid exudate or air. The mediastinum shifts away from the affected lung.

2. Resorption atelectasis (2003 old paper) p714

- (a) is a consequence of complete obstruction of an airway, which in time leads to the resorption of oxygen trapped in the dependent alveoli, without impairment of blood flow through the affected walls. (THIS PART WAS IN THE 2003 PAPER...all other parts of this question are made up by me)**
- (b) Since lung volume is diminished the *mediastinal shift is toward the* affected lung
- (c) *is reversible*, as the lung parenchyma can usually be re-expanded, except that seen in contraction
- (d) is a *commonly seen complication* post operatively
- (e) is seen with bronchial neoplasms, *but it tends to cause subtotal obstruction, thereby producing localised emphysema*

3. Pulmonary oedema p714-715

- (a) caused by microvascular injury, *is due to damage to the capillaries of the alveolar septa*
- (b) of long standing, causes brown induration that *predispose to infection*.
Haemosiderin laden macrophages are abundant.
- (c) caused by left heart failure, is due to *increased plasma osmotic pressure*
- (d) secondary to pneumonia causes localised alveolar oedema, *but infection and sepsis likely cause of death from the disease*
- (e) none of the above is true**

4. In acute respiratory distress syndrome, p716

- (a) the alveolar wall becomes lined with waxy hyaline membranes, with similar appearances to surfactant insufficiency (hyaline membrane disease) of pre-term babies**
- (b) the initial endothelial *damage is done to the capillary epithelium, but eventually both are affected*
- (c) the exudate produced is *difficult to resolve, and causes intra-alveolar fibrosis*
- (d) the damage is usually neutrophil mediated
- (e) chest radiographs show *diffuse bilateral infiltrates later*, but the CXR is often normal initially

5. In acute respiratory distress syndrome, p716
- (a) the functional abnormalities are **NOT** homogenously distributed throughout the lungs
 - (b) **Fatal cases often have a superimposed pneumonia** as a complication
 - (c) the condition is usually **unresponsive** to oxygen therapy
 - (d) the **mortality rate is high at 60%**
 - (e) **the lungs can be divided into infiltrated, consolidated, or collapsed areas**
6. Acute interstitial pneumonia p716, paragraph 2
- (a) has a **mean age of 50 for affected patients**
 - (b) **has no known aetiology, the radiological findings (see 4a) and the complications are the same as for ARDS**
 - (c) affects **men and women equally**
 - (d) has a **high mortality rate of 50%**
 - (e) often follows an **illness of less than 3 weeks duration that resembles an upper respiratory tract infection**
7. The type of emphysema commonly caused by cigarette smoking is (2004 old paper) p718
- (a) pan acinar, the entire pulmonary architecture (the acini) are involved, but not the entire lung. Occurs in patches (lower zone, anterior margins. **Seen with α_1 -antitrypsin deficiency.** α_1 -AT is a Protease inhibitor, produced by the liver, which inhibits the action of elastase, cathepsin 3 and proteinase 3
 - (b) **centriacinar** involves the lobules, central, or proximal parts of the acini are affected, but the distal areas are spared \therefore normal and emphysematous areas exist within the same acinus. **Seen most in smokers**, in association with bronchitis
 - (c) distal acinar (paraseptal) occurs adjacent to areas of fibrosis, scarring and atelectasis, and is more severe in the upper half of the lungs. Produces cyst like spaces 0.5cm-2cm in diameter, and is **likely to be the cause of spontaneous pneumothorax in young adults**
 - (d) Airspace enlargement with fibrosis (irregular emphysema), named because the acinus is irregularly involved. Invariably associated with scarring. **Most common form, as healed inflammatory processes** in the lung are common.
 - (e) none of the above (**wrong**)
8. Regarding the effects of cigarette smoking
- (a) **Neutrophils and macrophages are accumulate in the alveoli, possibly due to the direct actions of nicotine**
 - (b) **There is a clear-cut association** between heavy cigarette smoking and emphysema
 - (c) Smoking causes a **“functional” α_1 -antitrypsin deficiency as a result of oxidative inactivation**
 - (d) Emphysema caused by smoking is due to **neutrophil and macrophage** action
 - (e) none of the above is true (**wrong**)

9. Regarding emphysema p721

- (a) **Expiratory airflow obstruction, measured with spirometry, makes the diagnosis**
- (b) Weight loss is *common, and often is as striking as seen in neoplasia*
- (c) Blood gas analysis is usually *normal at rest, but respiratory rate is increased. Those with predominantly bronchitis have abnormal gas analysis (blue bloaters)*
- (d) The clinical manifestations usually appear with loss of *one third of the functioning pulmonary parenchyma*
- (e) patients usually have a *slight* cough. *Those with predominantly bronchitis have purulent sputum and productive cough.*

10. In emphysema (*old paper*)

- (a) a deficiency in α 1-antitrypsin *causes emphysema (panacinar type)*
- (b) centriacinar destruction leads to obstructive overinflation (*in old paper resource, but not stated in the text*)
- (c) **the protease-antiprotease mechanism is the most plausible explanation of the disease**
- (d) smokers have increased numbers of macrophages in the *alveolar space*
- (e) elastase *activity is increased* by oxygen free radicals

11. Chronic bronchitis is characterised by (*old paper 2004*)

- (a) smooth muscle hypertrophy (*seen in asthma, not bronchitis*)
- (b) *chronic lymphocyte* infiltration
- (c) **mucus gland hypertrophy of the trachea and bronchi**
- (d) increased size of goblet cells
- (e) *a persistent productive cough for at least 3 months in at least two consecutive years*

12. The major morphological changes seen in chronic bronchitis include (*old paper*)

- (a) predominant *lymphocyte* infiltration
- (b) *slight increase* in goblet cell number, but markedly so in small airways
- (c) smooth muscle hypertrophy (*seen in asthma, not bronchitis*)
- (d) **increased mucosal gland depth, compared to the thickness of the wall between the epithelium and the cartilage (Reid index). Index is increased in proportion to the severity of the disease**
- (e) a Reid index of 0.4 *is normal*

13. In chronic bronchitis (*old paper*)

- (a) **The hallmark is hypersecretion of mucus in the large airways**
- (b) there is a marked increase in goblet cells in the *small airways*
- (c) Repeated infection is *significant to the maintenance* of the disease, *but is probably secondary in the development*
- (d) cigarette smoke stimulates alveolar *macrophages*
- (e) *destruction of the epithelium*, secondary to repeated inflammatory attack leads to emphysema

14. Regarding the pathogenesis of chronic bronchitis p722
- (a) Repeated infection is **significant to the maintenance** of the disease, **but is probably secondary in the development**
 - (b) When bronchitis is accompanied by moderate airflow obstruction, **emphysema is the dominant lesion**
 - (c) Goblet cell overactivity is a protective **metaplastic change** against the toxic effects of airborne pollutants, such as tobacco smoke
 - (d) The disease is **still most frequent in middle-aged men**
 - (e) **none of the above are true.**
- 90% of affected patients are smokers.

15. Regarding asthma p723
- (a) there has been **a significant increase in the number of patients affected in the Western world over the past 3 decades**
 - (b) **EXtrinsic** asthma refers to asthma induced by exposure to an inhaled allergen
 - (c) **Atopic asthma is the most common type**
 - (d) The disease may be due to **an increased number of Type 2 helper cell** (T_{H2}), which induces B cells to produce IgE. T_{H1} cells inhibit T_{H2} , and produce non-asthma inducing IFN- γ , and IL-2, which help, kill viruses and activate m ϕ and cytotoxic T cells instead. Apparently there is an imbalance.
 - (e) **in late bronchitis, not asthma**, bronchiolitis obliterans is a common complication

16. Nonatopic asthma p726
- (a) is typically triggered by **viral respiratory** infection
 - (b) **have normal serum IgE levels. The theory places more emphasis on the hyper-responsiveness of the bronchial tree.**
 - (c) produces **negative skin tests. It is thought that an inflammation of the respiratory mucosa reduces the threshold for subepithelial vagal receptors to irritants**
 - (d) is also called **intrinsic type asthma**
 - (e) Those affected by occupational asthma are in the atopic group, and the sensitivity is due to **repeated exposure to the irritant**

17. What morphological features are NOT seen in asthma? (**old paper 2004**) p726
- (a) Curschmann spirals (mucus plugs with shed epithelium)
 - (b) Charcot-Leyden crystals (collections of crystalloid eosinophil membrane protein)
 - (c) Thickened basement membrane (with inflammatory cell infiltrate)
 - (d) increased size of the submucosal glands
 - (e) prominence of **eosinophils and mast cells in the bronchial walls**

18. In bronchial asthma (**old paper**)(p724-726)
- (a) extrinsic asthma is initiated by a **type I hypersensitivity reaction to an allergen**
 - (b) bronchial wall **smooth muscle is hypertrophic and hyperplastic**
 - (c) **immunoglobulin E (IgE)** plays a role
 - (d) sub-epithelial vagal receptors in the respiratory mucosa are **highly sensitive** to irritants
 - (e) **primary mediators include eosinophilic and neutrophilic mediators**

19. In extrinsic asthma (p725 fig 15-11)
- (a) when IgE is cross-linked by allergen on the surface of mast cells, they *release preformed mediators* that open tight junctions between epithelial cells
 - (b) the process is best described as a *type I (ONE) hypersensitivity reaction*
 - (c) inhaled allergens elicit a T helper 2 dominated cell response favouring IgE production**
 - (d) factors such as major basic protein *cause further epithelial damage*
 - (e) antigen that triggers the immune response *is able to get into the mucosa because of the opening of the tight junctions*
20. Intrinsic asthma (*old paper*) p724-6
- (a) *Extrinsic asthma* is the classic example of a type I hypersensitivity reaction
 - (b) *Extrinsic asthma* is the most common type of asthma
 - (c) is triggered by viral infections (this was the only answer in this question. I made the others up)**
 - (d) patients have *normal IgE levels*
 - (e) patients are *negative* for allergy skin tests
21. Aspirin induced asthma (p726)
- (a) *is a contraindication for use* (MIMS)
 - (b) occurs in patients with allergic rhinitis and nasal polyps**
 - (c) occurs with *minute doses* of aspirin
 - (d) is caused because aspirin inhibits the cyclooxygenase pathway, which, in these patients which leaves the *lipooxygenase pathways intact, causing leukotriene induced bronchoconstriction*
 - (e) causes *concurrent urticaria*
22. Bronchiectasis p727
- (a) can occasionally arise from *mucus plug obstruction/impaction*
 - (b) can arise as a complication of rheumatoid arthritis**
 - (c) has characteristic *irreversible bronchial* dilation. Pneumonia causes temporary dilation of bronchioles
 - (d) is *an uncommon condition* as treatments for infections have improved
 - (e) has characteristic marked hypersecretion of mucus in the large airways (*seen in bronchitis*). *Permanent dilation of bronchi resulting from and associated with necrotising infections. Clinically it is manifested by cough fever, and copious sputum. Obstruction and infection are the major influences*
23. Bronchiectasis p727
- (a) requires repeated *infections and obstruction* as the primary aetiology
 - (b) is sometimes caused after influenza infection, adenovirus, HIV, TB, Staph Aureus, H influenzae, Pseudomonas**
 - (c) can be a feature of inflammatory bowel disease, SLE, post transplant (rejection)**
 - (d) has clinical findings of chronic cough, fever and *purulent sputum*
 - (e) seen in cystic fibrosis is *primarily due to chronic obstruction of airways by thick tenacious sputum*, leading to a susceptibility to repeated infection which then causes the bronchiectasis

24. The morphology of bronchiectasis p728
- (a) **shows airway dilation up to four times normal size**
 - (b) usually affects the *lower lobes*
 - (c) is usually *bilateral, affecting both lungs*
 - (d) can show pseudostratification of columnar epithelia and squamous *metaplastic change*
 - (e) histological findings *are dependent* on activity and chronicity of the disease. Full-blown disease shows intense acute and chronic inflammation, and in some instances the necrosis destroys bronchial walls and abscesses develop. Fibrosis occurs as a late event, leading to obliteration of the bronchiolar lumina
25. Regarding interstitial lung disease p729
- (a) Idiopathic pulmonary fibrosis is thought to be *T helper 2 cell (T_H2)* mediated therefore IL-4 and IL-13 are found in lesions
 - (b) Idiopathic pulmonary fibrosis is best described as *repeated cycles of acute alveolitis*
 - (c) **Desquamative interstitial pneumonia is thought to be a smoking related disorder**
 - (d) Radiation pneumonitis tends to cause *fibrosing* interstitial disease. Most do, Sarcoid, and hypersensitivity pneumonitis cause granulomatous lung disease.
 - (e) clubbing is a *late* clinical sign
26. In rheumatoid arthritis patients, the lung can be affected by the following conditions *except* p731-2
- (a) Chronic pleuritis
 - (b) diffuse interstitial pneumonitis and fibrosis
 - (c) intrapulmonary rheumatoid nodules
 - (d) **squamous metaplasia of the bronchi**
 - (e) pulmonary hypertension. 40% of patients with classic rheumatoid have some lung dysfunction
27. Regarding pneumoconioses p733
- (a) There has been a steady *decline in the numbers of patients* with this disease in the western world, due to workplace legislation
 - (b) **The most dangerous inhaled particles range from 1 to 5µm**
 - (c) *smaller air particles reach the pulmonary fluids* and reach toxic levels rapidly and hence cause acute lung injury
 - (d) Silica triggers *macrophages to release a number of products*, which mediates the inflammatory response and initiates fibroblast proliferation and leads to lung fibrosis
 - (e) With continued exposure, *only a small percentage of exposed individuals* will develop occupational respiratory diseases

28. Coal workers pneumoconiosis p734

- (a) unlike silicosis, **does not cause** increased susceptibility to tuberculosis
- (b) of the complicated type is **uncommon and affects <10% of coal workers**, and causes pulmonary dysfunction, pulmonary hypertension, and cor pulmonale, even if further exposure to coal dust is prevented
- (c) **causes coal nodules, which are larger coal macules**
- (d) of the mild type (anthracosis) is **seen in urban dwellers and smokers**
- (e) **does not predispose the affected patient to lung cancer, but silica exposure does.**

29. Silicosis p734-735

- (a) is **the most** prevalent of the exposure related respiratory diseases
- (b) caused by inhalation of amorphous silica is **less** fibrogenic than crystalline quartz forms
- (c) is caused by toxic silica **induced activation and release of fibrogenic mediators such as IL-1, TNF, fibronectin and fibrogenic cytokines**
- (d) **type fibrosis caused by inhaled silica is less pronounced when mixed with other minerals**
- (e) is usually detected when the patient **has a routine CXR** and pulmonary function is either normal or only slightly impaired

30. Regarding asbestos related illnesses p736

- (a) **Family members of asbestos workers are at increased risk of asbestos** related cancers, so therefore there was some public outcry at its continued mining and use
- (b) Mesothelioma **and lung carcinoma** are common cancer related to asbestos exposure
- (c) **Serpentine asbestos fibre types are the least pathogenic** as they are curly and are cleared by the ciliary escalator. Amphiboles are straight and impact, and get further down
- (d) **Asbestos acts as a tumour initiator and promoter, and is unique in this regard compared with other inorganic dusts**
- (e) Concomitant smoking has **a 55% increased risk** for carcinoma, but not mesothelioma related to asbestos exposure

31. Regarding asbestos related illness p736

- (a) The **unique** finding with asbestos exposure is asbestos bodies
- (b) **The most common finding with asbestos exposure is pleural plaques**
- (c) Pleural plaques develop most commonly in the **anterolateral parietal pleura and over the domes of the diaphragm**
- (d) Pleural plaques **do not contain** asbestos bodies, these are in the lung parenchyma
- (e) Pleural effusions are an uncommon occurrence in asbestos related disease, are **usually serous but may be bloody**

32. Sarcoidosis p737

- (a) **pneumoconiosis** is caused by exposure to silica compounds. Sarcoid has an HLA genotype but the cause is unknown, ?immune regulation disorder
- (b) causes **non-caseating** granulomas
- (c) **causes bilateral hilar lymphadenopathy or lymphadenopathy on chest radiographs in 90% of cases**
- (d) **Lung pathology is most common** and eye and skin lesions are of next frequency,
- (e) is more common in **women, 10x more common in blacks**

33. Regarding the morphology of sarcoid p738

- (a) All affected tissue shows the classic *non-caseating granulomas*
- (b) Central necrosis is rare, *unlike TB*
- (c) Asteroid bodies enclosed within giant cells are present**
- (d) Schaumann bodies and asteroid bodies *are also present in TB*
- (e) Lymph node involvement is a *feature in almost all cases*

34. Regarding sarcoidosis p738-739

- (a) The spleen is *commonly* affected microscopically in $\frac{3}{4}$ of patients, but is enlarged in $\frac{1}{5}$
- (b) skin lesions occur in one third to one half of patients, resembling SLE**
- (c) Muscle involvement is common *but usually asymptomatic*
- (d) Patients presenting with hilar lymphadenopathy *alone have a good prognosis*
- (e) *65% of patients recover from this disease* with minimal or no residual effects

35. Hypersensitive pneumonitis p739

- (a) in contrast to asthma, *is due to hypersensitivity to the antigen primarily in the alveoli*
- (b) occurs most commonly after continued exposure to *organic dusts, which contain bacteria and bacterial products, fungi and animal proteins*
- (c) is caused in part by a type III (immune complex) hypersensitivity, but type IV is also implicated due to the formation of granulomas in 65% of patients**
- (d) is also called *allergic alveolitis*
- (e) causes *non-caseating granulomas*
Seen in farmer's lung, bird fancier's lung etc.

36. Simple pulmonary eosinophilia p740

- (a) with acute eosinophilic pneumonia responds well to *corticosteroids*
- (b) of Löffler syndrome is benign and also known as *simple pulmonary eosinophilia*
- (c) has *extrinsic* asthma as a primary example
- (d) associated with simple pulmonary eosinophilia has striking radiographs, but a benign clinical course**
- (e) in simple pulmonary eosinophilia like other interstitial disorders, produces *occasional giant cells*

37. Smoking is associated with **(old paper, answer (d) only)** p740

- (a) mesothelioma rates in asbestos workers *are not affected by smoking*
- (b) obstructive diseases such as emphysema, *and interstitial lung disease, but these are less common, such as desquamating interstitial pneumonia*
- (c) chronic liver disease *(not a feature of smoking related disease)*
- (d) particle deposition in alveolar macrophages eg smokers' macrophages**
- (e) Löffler syndrome *(not stated)*

38. Regarding pulmonary alveolar proteinosis p741

- (a) The *acquired form of the disease* represents most of the cases
- (b) It is an autoimmune disorder, even though it is called acquired**
- (c) Histologically, *there is an accumulation of acellular surfactant in the alveolar spaces*
- (d) Secondary pulmonary alveolar proteinosis is *rare and follows silicosis, immunodeficiency disorders, and malignancies*
- (e) Congenital forms of the disease *are rapidly fatal and require lung transplant*

39. Pulmonary Embolism p742

- (a) from de novo large-vessel in situ thromboses are rare
- (b) occurs in 30% of patients dying after severe burns
- (c) is the cause of death in approximately 10% of hospitalised patients
- (d) can occur as a complication of central venous lines
- (e) all of the above is true**

40. Regarding pulmonary emboli

- (a) *Only 10% of* emboli cause infarction
- (b) The pulmonary infarct is classically haemorrhagic**
- (c) Death is sometimes caused by acute *right* heart failure
- (d) *Increased temperature* is a common clinical finding
- (e) Patients who have an embolus have a *30% chance of a second embolus, hence the need for 3 months of anticoagulant therapy*

41. Regarding pulmonary hypertension p743-44

- (a) The normal *pulmonary blood pressure* is $\frac{1}{8}$ that of the systemic pressure
- (b) Pulmonary hypertension is *usually secondary to*: obstructive or restrictive lung disease, congenital heart disease, recurrent PE, autoimmune disorders that affect the pulmonary vascular bed (eg systemic sclerosis)
- (c) Hypertension resulting from diseases such as emphysema occurs because of *reduction in the number of capillaries*, increasing vascular resistance
- (d) It is defined as an increase in mean pulmonary pressure to one fourth that of the mean arterial pressure**
- (e) *PE* is one of the few causes of sudden death

42. Regarding respiratory infection p747

- (a) *Respiratory infections are more prevalent than any other*
- (b) Pneumonia defines an *infective or non-infective inflammatory process* in the lung parenchyma
- (c) The most common cause of death in viral influenza epidemics is bacterial pneumonia**
- (d) The respiratory tract is the principle portal of entry for the development of pneumonias, but the *lungs are affected by haematogenous spread also*
- (e) The most common cause for nosocomial pneumonia is *poo bugs: Klebsiella, Serratia marcescens, E coli, pseudomonas, MRSA*

43. Regarding community acquired pneumonias p748
- (a) **S pneumoniae is part of the endogenous flora in 20% of adults**
 - (b) They are mostly *bacterial or viral*
 - (c) **20-30% of patients** have positive blood cultures
 - (d) S pneumoniae is *variably sensitive to penicillin*
 - (e) *S pneumoniae is still the most common pathogen responsible*
44. Regarding *Haemophilus influenzae* p748
- (a) The **unencapsulated form of the bacteria is the most common form** (95%) found in the oropharynx, and the encapsulated form dominates the unencapsulated types by producing an antibiotic haemocin that kills the unencapsulated types
 - (b) Type **b** causes the most serious invasive disease
 - (c) Pneumonia caused by this pathogen is *usually lobular and patchy*
 - (d) H influenzae is *ubiquitously found in the oropharynx*
 - (e) **H influenzae is the most common pathogen for acute infective exacerbation of chronic obstructive pulmonary disease (COPD).**
45. *Moraxella catarrhalis* p748
- (a) is a common cause of pneumonia in the elderly
 - (b) is the second most common cause of acute exacerbation of chronic obstructive pulmonary disease (COPD)
 - (c) is a common cause for acute otitis media in children
 - (d) **all of the above is true**
 - (e) none of the above is true
46. Regarding *Staph Aureus* pneumonia p748
- (a) **It is a common pneumonia in association with endocarditis in IV drug users**
 - (b) Whilst virulent, S Aureus pneumonia leads to post infective complications such as *empyema and lung abscess*
 - (c) *Klebsiella* commonly afflicts malnourished individuals and alcoholics
 - (d) It is a common cause of secondary bacterial pneumonia following *viral respiratory infection* in healthy young adults and children
 - (e) It is *an important cause of nosocomial* pneumonia
47. Regarding Legionella pneumonia
- (a) **Organ transplant recipients are particularly susceptible**, and immunocompromised individuals have mortality rates of up to 50%
 - (b) Legionella antigens in the urine is a means for rapid diagnosis, *but culture is the gold standard of diagnosis*
 - (c) Pontiac fever is the *self-limiting* upper respiratory infection associated with Legionella
 - (d) One mode of transmission is thought to be from *aspirating contaminated* drinking water
 - (e) none of the above is true (*wrong*)

48. In bacterial pneumonia p748-9 (*old paper*)

- (a) **patchy consolidation of the lung is the dominant characteristic of bronchopneumonia**
- (b) the anatomic, but still classic categorisations of *lobar pneumonia* are often *difficult to apply to an individual case because patterns overlap*
- (c) Klebsiella pneumonia is *an occasional pathogenic agent*, seen in alcoholics and the malnourished. It is the most common cause of gram-negative pneumonia
- (d) alveolar clearance of bacteria is achieved by *macrophages*
- (e) The nasopharynx is *very important* in defending the lung against infection

49. Lobar pneumonia p749-51 (*old paper*)

- (a) is most commonly caused by *Streptococcus pneumoniae*
- (b) **involves morphological changes of red to grey hepatisation**
- (c) is *usually associated* with a productive cough
- (d) *Lobular/atypical pneumonia* is associated with immunosuppression
- (e) is a *marker of severity* rather than that seen in population groups. Mycoplasma is a common cause for atypical pneumonia in the young and young adults and is characterised by patchy inflammatory changes, rather than a lobar pneumonia

50. From first to last, the morphological changes in lobar pneumonia occur in which correct chronological order? p750

- (a) grey hepatisation, red hepatisation, congestion, resolution
 - (b) red hepatisation, grey hepatisation, congestion, resolution
 - (c) congestion, grey hepatisation, red hepatisation, resolution
 - (d) **congestion, red hepatisation, grey hepatisation, resolution**
 - (e) congestion, red hepatisation, grey hepatisation, interstitial fibrosis
- Red hepatisation changes to grey due to disintegration of RBC's in the area of consolidation

51. Which of the following is NOT a complication of pneumonia p750

- (a) abscess formation, common with type 3 pneumococci or Klebsiella
- (b) empyema
- (c) organization, which may convert a portion of the lung into a solid mass
- (d) infection can disseminate to the heart valves, pericardium, joints, brain, kidneys or spleen.
- (e) **squamous metaplasia**

52. Regarding community acquired infective pneumonitis (atypical) p751

- (a) **It can have a similar alveolar pattern of damage to that seen in acute respiratory distress syndrome (ARDS)**
- (b) The pneumonic involvement is patchy or *lobar unilaterally or bilaterally*
- (c) Pleural effusions are *uncommon*
- (d) They are associated with a *mildly* elevated white cell count
- (e) Eradication of the infection leads to *reconstitution of the normal architecture of the lung*

Seen as epidemics in schools, camps, and prisons. Caused by M pneumoniae, flu virus A&B, Chlamydia pneumoniae, Q fever

53. Regarding the influenza virus p751-2
- (a) antigenic **DRIFT** is the mutations the haemagglutinin and neuramidase that allow the virus to escape host antibodies
 - (b) antigenic **shift** is the replacement of the haemagglutinin and neuramidase, through the recombination of RNA segments with those of animal viruses
 - (c) Influenza type B and C do not show antigenic drift or shift, and hence behave like chicken pox virus, and other diseases of childhood**
 - (d) **Type A affects birds**: The H(aemagglutinin)5 N(euramidase)1 strain is a type a flu virus
 - (e) It is a **single stranded RNA virus**
54. Regarding nosocomial pneumonia p752
- (a) They are **common in patients with severe underlying disease**: immunosuppression, prolonged antibiotic therapy, or patients with CV lines etc, and very common in intubated patients
 - (b) **Prolonged antibiotic therapy in hospital is a risk factor**
 - (c) Gram negative rods are common pathogens**
 - (d) **Strep pneumoniae is a not a major pathogen**
 - (e) **They are serious and life threatening**
55. Regarding lung abscess p753
- (a) It is most frequently seen in **aspiration of infective material**
 - (b) Abscess caused by aspiration are more common on the right**
 - (c) Usually **multiple abscesses will develop as a result of infection**
 - (d) **They are not always filled with suppurative debris**, if they have communication with an airway
 - (e) Underlying carcinoma is present in **10-15%** of cases
56. Regarding chronic pneumonia p754
- (a) It is most often seen in the **immunocompetent and is a localised lesion**
 - (b) There is usually long standing **granulomatous** inflammation
 - (c) Some fungal infections, such as histoplasmosis resemble tuberculosis infection**
 - (d) Histoplasmosis **is like other fungi in that it produces hyphae**
 - (e) **Like Candida**, Histoplasma pneumonia in HIV patients is a common opportunistic pathogen
57. Regarding pneumonia in HIV infected patients p757
- (a) Pulmonary non-Hodgkin lymphoma needs exclusion in these patients**
 - (b) Patients are commonly affected by atypical opportunistic infections however, **the common pathogens for community acquired pneumonia cause pneumonia in these patients as well, and frequently**
 - (c) Mycobacterium avium is a pathogen in the **late stages** of immunosuppression
 - (d) **Tuberculosis and bacterial infections occur in the early stages of immunosuppression**
 - (e) none of the above is true (**wrong**)

58. The incidence of lung cancer p757
- (a) is *increasing* in women *as they increasingly smoke, but at a slow rate*
 - (b) is now higher than the incidence of breast cancer in women**
 - (c) has a peak incidence in the *fifties age group (40-70)*
 - (d) *has 2%* of cases occurring before the age of 40
 - (e) has *declined at a slower rate with an increase in smoking rates in the 1990's*
59. Squamous cell lung carcinoma p759-60
- (a) has a five year survival rate of **15%**
 - (b) is closely correlated with a smoking history**
 - (c) is commonest at the hilum, *1st or 2nd order bronchi of the lung*
 - (d) is *commonest in males*
 - (e) metastasises outside the thorax at a *late* stage
60. Regarding bronchogenic carcinoma (*old paper*) p759-60
- (a) It most often arises in or about the hilum of the lung**
 - (b) distant metastasis is due to both *haematologic and lymphatic spread*
 - (c) metastases most commonly appear in the *adrenals (>50%) >liver (30-50%)> brain (20%)= bone*
 - (d) *Squamous cell carcinoma= adenocarcinoma (25-40%), small cell carcinoma (20-25%) large cell (10-15%)*
 - (e) surgical resection is *often ineffective for small cell carcinoma*, as it metastasises at such an early stage of development. Small cell cancers respond well to radiotherapy/chemotherapy and spread early, whereas squamous cell carcinomas do not respond to treatment well and metastasise late
61. Adenocarcinoma p760-761
- (a) is most common in *women*
 - (b) is the *most common lung cancer in non-smokers*, and is less associated with smoking than squamous cell, but still has a high association (75%) with smoking (cf squamous type: 95% are smokers)
 - (c) most commonly occurs in *the periphery*
 - (d) tends to metastasise early and widely around the body**
 - (e) produce *small lesions*
62. Small cell carcinoma p762
- (a) is the *3rd most common* type of cancer in the lung
 - (b) occurs in the *periphery or centrally in the lung*
 - (c) are always high grade**
 - (d) *like* squamous cell carcinoma, *have a high causal relationship with smoking*
 - (e) can *produce polypeptide hormones such as ACTH, and ADH (most common to small cell carcinoma)*
63. Regarding pleural effusions p766 table 15-14
- (a) Normally 15mL of serous acellular clear fluid lubricates the pleural surfaces**
 - (b) Effusion is primarily due to an *underlying disease elsewhere*
 - (c) Haemorrhagic pleuritis is usually associated with *tumour*
 - (d) Haemothorax is commonly associated with *trauma, ruptured aortic aneurysm*
 - (e) Empyema is commonly due to infection in the *adjacent lung*