

Pleural Effusions

Aetiology

- Transudates
 - Heart failure, liver failure, renal failure, nephrotic syndrome
 - Hypoalbuminaemia
- Exudates
 - Malignant
 - Infective (simple parapneumonic, complicated parapneumonic, empyema)
 - Connective Tissue Disorder - particularly lupus, RA
 - Chylous - thoracic duct obstruction from trauma or malignancy
 - Drug Induced

Classification

- Via Light's Criteria and based on comparison of serum and pleural fluid LDH and protein
- Light's criteria designate any effusion as an exudate if one of the three criteria are met
 - LDH fluid: serum of > 0.6
 - Protein fluid: serum of > 0.5
 - LDH $> 2/3$ of the upper limit of normal of serum
- Criteria are optimised for sensitivity to not miss exudates, therefore some transudates are likely to be classified as exudates.

Other Biochemical Analysis

- TB pleural effusions almost always have total protein > 40 g/L
- When total protein > 70 g/L consider paraprotein disorders
- Pleural fluid LDH > 1000 IU/mL
 - RA
 - Empyema
 - Paragonomiasis
- PJP pleural effusions
 - LDH fluid: serum > 1.0 but protein fluid: serum < 0.5
- Cholesterol (pseudochoylous)
 - Thought to be derived from degenerating cells
 - Defined by cholesterol > 6.5 mmol/L
- Chylous
 - Elevated triglycerides > 1.24 mmol/L
- Glucose
 - Glucose < 3.33 mmol/L or < 0.5 serum suggests:
 - RA
 - Complicated parapneumonic effusion or empyema
 - Malignant
 - Lupus
 - TB
 - Boerhaave's syndrome
- pH
 - In parapneumonic effusions, pH < 7.2 predicts an effusion which is unlikely to settle without drainage