

CRITCARE BITES

ARDS: Diagnosis and Evaluation

What is ARDS? Why is it important?

- First described in 1967 – when it was termed adult respiratory distress syndrome
- Condition of diffused inflammation and edema in the lung, due to inciting triggers that affect endothelial and epithelial lining of lung resulting in leakage of proteinaceous fluid into alveoli
 - Reduced lung compliance, VQ mismatch, shunting → Hypoxemia
 - Microthrombosis in capillaries resulting in deadspace → Hypercapnea
 - Circulating cytokines resulting in SIRS
- Importance
 - Common condition
 - High mortality rate – up to 20-40%
 - High morbidity rate – Post recovery sequelae (physical, cognition, psychological)

Diagnosis

- Berlin Classification (2012; being revised now)
 - Acute – Within 1 week of clinical insult
 - Known cause/insult
 - Radiology – Bilateral opacities/infiltrates not explainable by effusions/collapse
 - Not primarily due to heart failure or volume overload
 - Hypoxemia (based on PF ratio < 300) with a certain amount of PEEP

Differentials of ARDS

- History Taking: Differentiating acute from acute on chronic/acute exacerbation
- Physical Examination:
 - Assessing for clinical features of heart failure
- Considerations/Mimics
 - Cardiogenic pulmonary edema
 - Interstitial Lung Disease
 - Infection: Pulmonary tuberculosis, Pneumocystis Carinii
 - Diffuse alveolar hemorrhage – Pulmonary renal syndromes
- Bearing in mind that different diagnoses may co-exist, hence it is important to keep an open mind

Triggers/Etiologies of ARDS

- Direct lung injury: Pneumonia (bacterial, viral), aspiration, inhalational injury (e.g. vaping), traumatic pulmonary contusion
- Indirect lung injury: Non-pulmonary sepsis, polytrauma, pancreatitis, TRALI

Initial Evaluation

- Targeted history and physical examination – Is this ARDS? Exclude mimics?
- Assess airway, breathing, circulation – Is there a need for imminent intubation? Provide supplemental oxygenation
- Assess for other urgent problems/underlying diagnoses – e.g. is the patient septic/hypotensive?
- Assess severity of ARDS – ABG (for PF ratio), imaging
- Deciding on treatment of ARDS