Emergency management of Acute Heart Failure

Presenting Symptoms

Anxiety
Tachycardia
Dyspnoea

SEVERE FAILURE
- PALLOR
- HYPOTENSION <90mmHg
- OLIGURIA
- LOW CARDIAC OUTPUT

CARDIOGENIC SHOCK TRIAD !

Precipitating causes:
- Extensive Infarction
- Sustained arrhythmia
- Papillary muscle rupture
- Post-infarct Septal defect

Killip classification

Class	Clinical features	Hospital mortality (%)
Class I	No signs of left ventricular dysfunction	6
Class II	S3 gallop with or without mild to moderate pulmonary congestion	30
Class III	Acute severe pulmonary oedema	40
Class IV	Shock syndrome	80-90

3 primary goals:

- **Stabilise haemodynamic status**
- **Relieve pulmonary congestion**
- **Improve tissue oxygenation**

PROCEDURES and INVESTIGATIONS

1. **Sit patient upright**
2. **12 litres of oxygen via face mask**
3. **Attach ECG leads**
4. **Insert urinary catheter**
5. **Wide-bore cannula**
6. **Arterial Blood Gases** →
7. **Listen to the lungs:**
   Pulmonary oedema?
8. **Give frusemide diuretic IV**
   Still anxious + tachycardic?
9. **Give Opiates for pain, anxiety and to reduce myocardioal demand**
   Those ST segments just keep rising?
10. **GIVE NITRATES**
    Patient still looks bad?
11. **Give beta-agonist inotropes (dobutamine or dopamine)**
    (only a short term measure!)
    Patient actually GETTING WORSE?
12. **Intubate and mechanically ventilate: less energy demand on heart**
    BUT DON'T USE PEEP! end-expiratory pressure will reduce the amount of venous return by increasing the pressure inside the thoracic cavity
13. **Consider circulatory support devices, eg. aortic pump etc.**

ABGs give a BASE EXCESS:
a guide to actual tissue perfusion in patients with acute heart failure:
a worsening (more negative) base excess generally indicates lactic acidosis, which is related to anaerobic metabolism, and is **a poor prognostic feature.**

Correction of hypoperfusion will correct the metabolic acidosis; **bicarbonate infusions should be reserved for only the most refractory cases.**