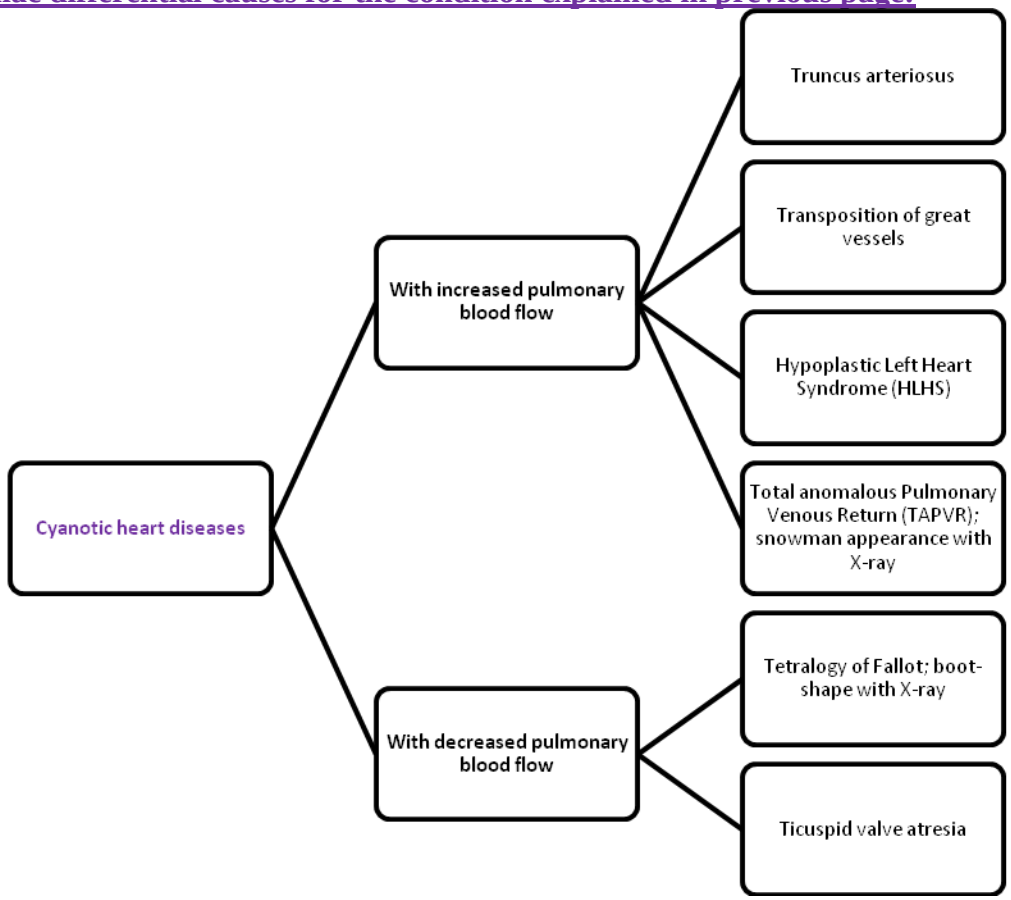
- **Case: newborn tachypneic and dusky (cyanosed).**
  - **What further questions would you ask about his condition?**
    - ✓ How old is he? he is 4 hours old.
    - ✓ What is the gestational age and his weight? 39 weeks; 3.5 kg.
    - ✓ The mother is 28 years old; G2 P1.
    - ✓ Pregnancy was uneventful with normal vaginal delivery and clear amniotic fluid.
    - ✓ APGAR scores: 8^1, 9^5
  - **You have to measure the Respiratory Rate (RR) since the baby is tachypneic:**
    - ✓ Notice that the normal (RR) for a newborn is between 40-60. A newborn is considered to be tachypneic is the (RR) is > 60.
    - ✓ The normal (RR) in adolescents/adults is < 20
  - **You have to measure oxygen saturation via pulse oximetry since the baby is cyanosed.**
    - ✓ Normally, oxygen saturation must be > 95%.
    - ✓ In the first few hours after delivery, it is normal that oxygen saturation is low but after 4 hours it must reach normal values.
    - ✓ In this newborn, oxygen saturation was:
      - ❖ 71% from hands.
      - ❖ 93% from legs.

      This gives you a hint to think about transposition of great vessels.
  - **Vital signs:**
    - ✓ Temperature: 36.8 C (normal temperature).
    - ✓ Heart Rate (HR): 142 beats/ minute. Notice that normal neonatal (HR) is between 110-160 beats/minute.
    - ✓ Respiratory Rate (RR): 72 (the baby is tachypneic as mentioned in the history).
    - ✓ Blood Pressure (BP): 68/45 mmHg (It is normal that BP in newborns is lower than values in adults).
  - **Heart examination:**
    - ✓ Normal percordial impulse.
    - ✓ Normal S1
    - ✓ Loud S2
    - ✓ No murmurs.
    - ✓ No clicks or gallops.

    The rest of physical examination is normal.
  - **Chest X-ray showed:**
    - ✓ Mild cardiomegaly.
    - ✓ ↑ pulmonary vascularity.
  - **Arterial Blood Gas (ABG):**
    - ✓ PCO_2 = 32 (due to tachypnea which causes washout of CO_2).
    - ✓ HCO_3 = 20
    - ✓ Oxygen saturation = 73%
  - **Complete Blood Count (CBC):**
    - ✓ Hb = 17.4 (normal).
    - ✓ WBC = 14,500 (normal).
    - ✓ A blood culture must be done to check for sepsis which can occur even with normal or low temperature.

- **Respiratory differential diagnosis for the condition explained in previous page:**
  - **Respiratory Distress Syndrome (RDS):** which is more common with prematurity (this explains the need to ask about the gestational age in history).
  - **Transient Tachypnea of Newborn (TTN):** it goes away after 4-8 hours and does not cause cyanosis (so it cannot be applied on our case).
  - **Pneumonia** (the newborn has no fever).
  - **Sepsis** (the blood culture was negative).
  - **Meconium aspiration** (in the history, it was mentioned that the amniotic fluid was clear).
  - **Pneumothorax.**
  - **Diaphragmatic hernia** (which is diagnosed by increased bowel sounds in the chest. Suppose this condition is not present in our case).
- **Cardiac differential causes for the condition explained in previous page:**



- **Cyanotic heart disease is best diagnosed with echocardiography which showed that our case had:**
  - **Transposition of great vessels with PDA, ASD and intact ventricular septum.** Notice that PDA and ASD must be present when there is transposition of great vessels to provide a communication.
- **What would be your management for this case?**
  - **Temporarily measures:**
    - ✓ PGE_1
    - ✓ Balloon arterial septostomy.
  - **Definitive treatment:**
    - ✓ Arterial switch operation.