Test Bank for L1

**MCQs & Cases (20 Questions)**

**1. A 58-year-old man presents with headache, pruritus after a hot shower, and splenomegaly. Labs: Hb 19 g/dL, Hct 58%. Erythropoietin is low. Which mutation is most likely?**
**A) BCR-ABL**
**B) JAK2**
**C) MPL**
**D) CALR**

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**2. The most common complication of untreated Polycythemia Vera is:**
**A) Deep vein thrombosis**
**B) Hemorrhage**
**C) Renal failure**
**D) Pancytopenia**

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**3. Which of the following laboratory findings differentiates secondary polycythemia from Polycythemia Vera?**
**A) Low oxygen saturation**
**B) Presence of JAK2 mutation**
**C) Splenomegaly**
**D) Increased uric acid**

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**4. A 45-year-old athlete lives at high altitude. Hb: 18 g/dL, Hct: 56%, EPO: high. Diagnosis?**
**A) Polycythemia Vera**
**B) Secondary polycythemia**
**C) Hemoconcentration**
**D) Essential thrombocythemia**

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**5. In Polycythemia Vera, which lab result would you expect?**

**A) Low hematocrit**

**B) Elevated erythropoietin**

**C) Decreased erythropoietin**

**D) Normal WBC and platelets**

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**1. → B) JAK2**
📌 95–99% of PV patients have JAK2 mutation.

**2. → A) Deep vein thrombosis**
📌 Hyperviscosity + abnormal platelets → thrombosis is #1 complication.

**3. → A) Low oxygen saturation**
📌 Secondary polycythemia = ↑ EPO + hypoxia (altitude, lung disease).

**4. → B) Secondary polycythemia**
📌 Athlete at high altitude → ↑ RBC due to hypoxia.

**5. → C) Decreased erythropoietin**
📌 PV suppresses EPO via negative feedback.

**6. A 67-year-old woman with Polycythemia Vera develops sudden chest pain. ECG shows ST-elevation MI. What is the underlying mechanism?**

**A) Hypocalcemia**

**B) Hyperviscosity with thrombosis**

**C) Autoimmune destruction of RBCs**

**D) Elevated bilirubin**

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**7. Which symptom is classically associated with Polycythemia Vera?**

**A) Night sweats**

**B) Itching after hot shower**

**C) Petechial rash**

**D) Gum bleeding**

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**8. Which of the following is NOT a feature of Polycythemia Vera?**

**A) Splenomegaly**

**B) Elevated RBC mass**

**C) Elevated erythropoietin**

**D) Hyperviscosity**

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**9. Treatment of choice for symptomatic Polycythemia Vera:**

**A) Hydroxyurea + phlebotomy**

**B) Chemotherapy**

**C) Bone marrow transplant**

**D) Corticosteroids**

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**10. Which of the following best explains the pruritus in PV?**

**A) Increased histamine release from basophils**

**B) Hyperbilirubinemia**

**C) Elevated bile salts**

**D) Iron overload**

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**11. A 62-year-old man with PV presents with sudden left-sided weakness. CT brain shows ischemic stroke. What is the most likely cause?**

**A) JAK2 mutation**

**B) Thrombosis due to high platelets**

**C) Low oxygen saturation**

**D) Vitamin B12 deficiency**

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**12. A 70-year-old man presents with fatigue, hepatosplenomegaly, and "tear-drop" RBCs on blood smear. Bone marrow biopsy: fibrosis. Diagnosis?**

**A) Polycythemia Vera**

**B) Essential thrombocythemia**

**C) Primary Myelofibrosis**

**D) Aplastic anemia**

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**13. Which of the following lab results is most consistent with Primary Myelofibrosis?**

**A) Pancytopenia**

**B) Elevated EPO**

**C) Isolated thrombocytosis**

**D) Low uric acid**

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**6. → B) Hyperviscosity with thrombosis**
📌 Thrombosis is main cause of MI/stroke in PV.

**7. → B) Itching after hot shower**
📌 Due to histamine release from basophils.

**8. → C) Elevated erythropoietin**
📌 PV has **low** EPO, not elevated.

**9. → A) Hydroxyurea + phlebotomy**
📌 Standard treatment to reduce viscosity & control cell counts.

**10. → A) Increased histamine release from basophils**
📌 Explains aquagenic pruritus.

**14. A 60-year-old man with renal cell carcinoma develops polycythemia. Which lab result would you expect?**

**A) Low erythropoietin**

**B) High erythropoietin**

**C) JAK2 mutation positive**

**D) Splenomegaly**

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**15. In PV, which type of mutation is most common?**

**A) Tumor suppressor loss**

**B) Tyrosine kinase activation**

**C) DNA repair mutation**

**D) p53 mutation**

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**11. → B) Thrombosis due to high platelets**
📌 Stroke in PV → thrombosis is the mechanism.

**12. → C) Primary Myelofibrosis**
📌 Tear-drop cells + BM fibrosis = hallmark.

**13. → A) Pancytopenia**
📌 Fibrosis crowds out marrow → ↓ RBCs, WBCs, platelets.

**14. → B) High erythropoietin**
📌 RCC secretes EPO → secondary polycythemia.

**15. → B) Tyrosine kinase activation**
📌 JAK2 mutation → constitutive TK signaling → uncontrolled growth.

**16. Which condition is considered a myeloproliferative neoplasm (MPN) along with PV?**

**A) Chronic lymphocytic leukemia**

**B) Essential thrombocythemia**

**C) Hodgkin's lymphoma**

**D) Multiple myeloma**

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**17. Which laboratory marker suggests high cell turnover in PV?**

**A) Elevated LDH and uric acid**

**B) Elevated bilirubin only**

**C) Low alkaline phosphatase**

**D) Low serum ferritin**

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**18. Best first-line management of hyperviscosity in PV:**

**A) Aspirin**

**B) Phlebotomy**

**C) IV fluids**

**D) Bone marrow transplant**

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**19. A patient with long-standing PV develops anemia, splenomegaly, and bone marrow fibrosis. This is called:**
**A) Blast crisis**
**B) Spent phase**
**C) Myelodysplastic syndrome**
**D) Hemolytic anemia**

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**20. Which is the most feared long-term complication of Polycythemia Vera?**
**A) Transformation to acute leukemia**
**B) Vitamin B12 deficiency**
**C) Pulmonary embolism**
**D) Liver cirrhosis**

**16. → B) Essential thrombocythemia**
📌 MPN group includes: PV, ET, PMF, CML.

**17. → A) Elevated LDH and uric acid**
📌 High turnover → ↑ purines → hyperuricemia, gout risk.

**18. → B) Phlebotomy**
📌 First-line to lower Hct & blood viscosity.

**19. → B) Spent phase**
📌 Late PV → marrow fibrosis, cytopenias, splenomegaly.

**20. → A) Transformation to acute leukemia**
📌 Rare but most feared long-term complication of PV.

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