

73. **What is terminal deoxynucleotidyl transferase (TdT)?**

An enzyme marker for primitive lymphoid cells. Strong TdT activity is seen in approximately 90% of patients with ALL, as well as in lymphoblastic lymphomas.

74. **Cytochemical stains were ordered on the blood of a patient with acute leukemia. The results were: myeloperoxidase positive, Sudan black positive, naphthol AS-D chloroacetate esterase (specific esterase) positive, alpha-naphthyl acetate esterase (nonspecific esterase) negative. These findings are consistent with which type of leukemia?**

Acute myelogenous leukemia (AML).

75. **What is immunophenotyping?**

The identification of specific cell markers using fluorochrome labeled antibodies. The analyzer used is a flow cytometer.

76. **In an acute leukemia, what is the first step in immunophenotyping?**

To differentiate AML from ALL.

77. **If CD13, CD33, CD34 are found on cells from a patient with acute leukemia, what is the cell lineage?**

Myeloid. CD34 is an immature cell marker present on myeloblasts. CD13 and CD33 are present on all myeloid progeny (pan-myeloid markers).

78. **Why is further immunophenotyping important in ALL?**

To determine if the leukemia is a T or B cell ALL and the subgroup based on cell maturity. This information is important for treatment and prognosis. Patients with T-ALL are more likely to relapse sooner than those with B-ALL.

79. **If the following markers were found on cells from a patient with acute leukemia, what is the cell lineage? CD 10, CD19, CD21, CD22, CD24.**

B cell.

80. **If the following markers were found on cells from a patient with acute leukemia, what is the cell lineage? CD1, CD2, CD3, CD5, CD7.**

T cell.

81. **What is a neoplasm?**

Unregulated growth of a single transformed cell. Neoplasms can be malignant or benign.

82. **What are myeloproliferative neoplasms (MPNs)?**

Hematopoietic stem cell disorders characterized by an increase in one or more of the myeloid cell lines (granulocytes, RBCs, or platelets) in the blood. Maturation and cellular morphology are normal.

83. **What are the 4 most common MPNs?**

Chronic myelogenous leukemia (CML), polycythemia vera (PV), essential thrombocythemia (ET), and primary myelofibrosis (PMF).

84. **What condition should be suspected in a patient with many myelocytes?**

Chronic myelogenous leukemia.