1. Which of the following is a characteristic feature of Acute Myeloid Leukemia (AML)?
- a. Slow progression of symptoms over several months
- b. Frequent involvement of lymph nodes and solid organs
- c. Symptoms related to anemia, thrombocytopenia, and neutropenia
- d. More common in children than elderly patients

2. What is the diagnostic threshold for AML according to WHO classification?
- a. 10% blasts in peripheral blood or bone marrow
- b. 15% blasts in peripheral blood or bone marrow
- c. 20% blasts in peripheral blood or bone marrow
- d. 30% blasts in peripheral blood or bone marrow

3. What are Auer rods in the context of AML?
- a. Chromosomal abnormalities specific to AML
- b. Small pink cytoplasmic rods representing peroxidase enzyme
- c. Nuclear inclusions found in lymphoblasts
- d. Cell surface markers used for diagnosis

4. Which of the following mutations is associated with epigenetic changes in AML?
- a. RAS mutations
- b. Isocitrate dehydrogenase (IDH) mutations
- c. Transcription factor mutations
- d. Tyrosine kinase mutations

5. Which type of AML is characterized by numerous cytoplasmic granules and Auer rods with commonly cleaved nuclei?
- a. AML with myelodysplasia
- b. Therapy-related AML
- c. Acute Promyelocytic Leukemia (APL)
- d. AML-Not otherwise specified

6. What is the most common childhood malignancy according to the presentation?
- a. T-cell Acute Lymphoblastic Leukemia (T-ALL)
- b. Acute Myeloid Leukemia (AML)
- c. Lymphoblastic lymphoma
- d. B-cell Acute Lymphoblastic Leukemia (B-ALL)

7. Which immunophenotypic markers are characteristic of myeloblasts?
- a. CD34, myeloperoxidase (MPO), CD13, CD33
- b. CD19, CD20, CD22
- c. CD3, CD4, CD8
- d. CD30, CD15, CD45

8. What is myeloid sarcoma?
- a. A type of chronic myeloid leukemia
- b. AML involving lymph nodes, spleen, or solid organs
- c. A precursor to myelodysplastic syndrome
- d. A benign tumor of myeloid cells

9. Which of the following best describes the pathogenesis of AML?
- a. Mutations in genes of B-cell receptors
- b. Viral integration into hematopoietic stem cells
- c. Mutations in genes of transcription factors required for maturation and differentiation of myeloblasts
- d. Chromosomal translocations affecting T-cell receptors

10. Which type of acute leukemia tends to disseminate to solid organs such as the brain, testis, and spleen?
- a. Acute Promyelocytic Leukemia
- b. Acute Myeloid Leukemia
- c. T-cell Acute Lymphoblastic Leukemia
- d. B-cell Acute Lymphoblastic Leukemia

11. What is the relationship between lymphoblastic lymphoma and acute lymphoblastic leukemia?
- a. They are completely different diseases with different cell origins
- b. Lymphoblastic lymphoma occurs in solid tissue (T>B), while ALL circulates in blood and involves bone marrow (B>T)
- c. They are the same disease at different stages of progression
- d. Lymphoblastic lymphoma affects adults, while ALL affects only children

12. Which of the following is a category in the WHO classification of AML?
- a. AML with cytoplasmic inclusions
- b. AML with lymphoid markers
- c. AML with recurrent cytogenetic mutation
- d. AML with solid organ involvement

13. What markers are expressed by the most immature lymphoid cells in acute lymphoblastic leukemia?
- a. CD13 and CD33
- b. CD34 and TdT
- c. Myeloperoxidase and CD117
- d. CD20 and CD22

14. Which statement about T-ALL is correct?
- a. It is more common than B-ALL
- b. It presents primarily in elderly patients
- c. It is more common in boys and often involves the thymus
- d. It rarely presents with a mediastinal mass

15. Which of the following is a characteristic morphologic feature of AML?
- a. Small cells with scant cytoplasm and condensed chromatin
- b. Large cells with high N/C ratio, fine granules in cytoplasm, fine chromatin, and prominent nucleoli
- c. Cells with abundant cytoplasm and eccentric nuclei
- d. Cells with cleaved nuclei and no visible nucleoli

16. Which type of AML occurs after treatment with chemotherapy or radiotherapy?
- a. AML with myelodysplasia
- b. Therapy-related AML
- c. AML-Not otherwise specified
- d. De novo AML

17. What additional mutations are common in the pathogenesis of AML besides transcription factor mutations?

- a. Mutations in cell cycle checkpoint proteins
- b. Mutations in tyrosine kinase pathways (RAS)
- c. Mutations in DNA repair genes
- d. Mutations in apoptosis regulators

18. How does the IDH mutation contribute to AML pathogenesis?

- a. It increases cell proliferation directly
- b. It produces an oncometabolite that blocks enzyme of epigenome and interferes with myeloblast differentiation
- c. It activates proto-oncogenes
- d. It inhibits tumor suppressor genes

19. Which statement about the clinical presentation of AML is correct?

- a. Symptoms develop gradually over several months
- b. Symptoms are primarily related to lymphadenopathy
- c. Symptoms become significant within a few weeks
- d. Symptoms are mild and often go unnoticed

20. What is the primary prognostic factor in AML?

- a. Patient age
- b. Type of mutations (molecular and cytogenetic studies)
- c. White blood cell count at diagnosis
- d. Presence of Auer rods

1. c
2. c
3. b
4. b
5. c
6. d
7. a
8. b
9. c
10. d
11. b
12. c
13. b
14. c
15. b
16. b
17. b
18. b
19. c
20. b