MCQ for mini-exam «Blood and hemostasis pathology»

Topic: PATHOLOGY OF CIRCULATING BLOOD VOLUME. BLEEDING

TESTS:

1. Hematocrit during oligocythemic normovolemia:

a) is increased
b) is decreased
c) is normal

2. He*matocrit during polycythemic normovolemia:*

a) is increased
b) is decreased
c) is normal

3. Hematocrit during simple normovolemia:

a) is increased
b) is decreased
c) is normal

4. What are the conditions with increased erythropoietin production?

a) exogenous hypoxia
b) arterial hypertension
c) hemolytic anemia
d) acidosis

5. What are the conditions with increased erythropoietin production?

a) polycythemia
b) circulatory hypoxia
c) chronic blood loss

6. *What kind of normovolemia leads to increased blood viscosity and predisposition to thrombosis?*

a) simple
b) polycythemic
c) oligocythemic

7. In what normovolemia appears anemia and hypoxia?

a) simple
b) olygocythemic
c) polycythemic

8. *How is hematocrit changed in simple normovolemia?*

a) it is increased
b) it is decreased
c) it has no changes

9. How is hematocrit changed in olygocytemic hypovolemia?

a) it is increased
b) it is decreased
c) it has no changes

10. How is hematocrit changed in simple hypovolemia?

a) it is increased
b) it is decreased
c) it has no changes

11. How is hematocrit changed in polycythemic hypovolemia?

a) it is increased
b) it is decreased
c) it has no changes

12. How is hematocrit changed in olygocytemic hypovolemia?

a) it is increased
b) it is decreased
c) it has no changes

13. Dehydration leads to:

a) olygocythemic hypovolemia
b) polycythemic hypovolemia
c) olygocythemic normovolemia

14. Excess consumption of water leads to

a) polycythemic normovolemia
b) olygocythemic hypervolemia
c) polycythemic hypovolemia

15. Chronic hypoxia leads to:

a) olygocytemic hypovolemia
b) polycythemic normovolemia
c) polycythemic hypovolemia

16. Depression of the erythropoiesis leads to:

a) polycythemic normovolemia
b) polycythemic hypovolemia
c) olygocythemic normovolemia

1. Massive hemolysis of erythrocytes leads to:

a) olygocythemic hypervolemia
b) polycythemic hypovolemia
c) olygocythemic hypovolemia

18. Massive hemotransfusion leads to:

a) simple hypervolemia
b) olygocythemic hypervolemia
c) olygocythemic normovolemia

19. The causes of simple hypovolemia are:

a) dehydration
b) immediately after hemorrhage
c) erythremia
d) few days after hemorrhage
e) massive infusion of plasma substitutes

20. The causes of polycythemic hypovolemia are:

a) dehydration
b) massive haemolysis
c) erythremia
d) anemia
e) hemorrhage

21. The cause of olygocythemic normovolemia is:

a) dehydration
b) anemia
c) renal failure
d) erythremia
e) small hemolysis of erythrocytes

22. Polycythemic hypervolemia is a result of:

a) erythremia
b) dehydration
c) anemia
d) hemorrhage

23. Massive infusion of the isotonic solutions leads to:
a) simple hypervolemia
b) polycythemic hypervolemia
c) olygocythemic hypervolemia
d) polycythemic hypovolemia
e) olygocytemic hypovolemia

24. The causes of simple hypovolemia are:
a) acute hemorrhage (after 30-40 minutes)
b) moderate hemorrhage (after 24 hours)
c) hemolysis of erythrocytes

25. What conditions lead to polycythemic hypovolemia?
a) extensive burns
b) overheating
c) water intoxication
d) erythremia

26. The cause of simple hypervolemia is:
a) massive blood transfusion
b) nephrotic disease
c) erythremia
d) intravenous infusion of physiological solution

27. The cause of olygocythemic normovolemia is:
a) small infusion of plasma substitute
b) moderate hemolysis of RBC
d) massive hemolysis of RBC

28. Hydrous phase after acute hemorrhage is characterized by:
a) simple hypovolemia
b) olygocytemic hypovolemia
c) olygocytemic normovolemia
d) simple hypervolemia

29. Reflex phase after acute hemorrhage is characterized by:
a) simple hypovolemia
b) olygocythemic hypovolemia
c) olygocythemic normovolemia
d) simple hypervolemia

30. The reason of polycythemic normovolemia is:

a) living in the mountains
b) dehydration
c) decreased synthesis of erytropoethine

31. The reasons of simple hypervolemia are:
a) infusion of plasma substitute
b) blood transfusion
c) packed red cell transfusion
d) reduction of excretory function of the kidneys

32. The reasons of polycythemic hypervolemia are:
a) hemotransfusion
b) packed red cell transfusion
c) erythremia
d) infusion of polyglucin

33. The causes of olygocythemic hypervolemia are:
a) packed red cell transfusion
b) reduction of excretory function of the kidneys
c) hemotransfusion
d) excess of vasopressin

34. What compensative phase after acute hemorrhage is accompanied with simple hypovolemia?
a) reflex
b) hydrous
c) bone-marrow

35. The reason of simple hypovolemia is:
a) lack of erythropoetin
b) hemorrhage
c) erythremia

36. The cause of polycythemic hypovolemia is:
a) erythremia
b) lack of vasopressin
c) packed red cell transfusion

37. The reason of olygocythemic hypovolemia is:
a) diarrhea
b) acute hemorrhage (6 -24 hr after)
c) intravenous introduction of salt solution

38. The cause of olygocythemic normovolemia is:
a) polyuria

b) living in the mountains
c) lack of synthesis of erythropoetine

39. The first hours after acute hemorrhage are characterized by:
a) polycythemic hypovolemia
b) simple hypovolemia
c) olygocythemic hypovolemia

40. The second day after acute hemorrhage is characterized by:
a) polycythemic hypovolemia
b) olygocytemic normovolemia (hypovolemia)
c) olygocythemic hypervolemia

41. What are the mechanisms of compensation during reflex phase after hemorrhage?
a) influence on baroreceptors from the reflexogenic regiones
b) activation of sympathoadrenal system
c) decreased heart stroke volume
d) decreased peripheral resistance

42. What are the mechanisms of blood volume restoration after hemorrhage?
a) spasm of the peripheral vessels
b) activation of blood coagulation system
c) decreased diuresis
d) redistribution of the water between sectors

43. What are the mechanisms of blood preassure normalization in reflex phase after hemorrhage?
a) output of blood from depot
b) increased sympathetic influence on the heart
c) influence on baroreceptors from the reflexogenic regions
d) activation of aldosterone synthesis

44. What are the reasons of normalization of blood pressure at hydrous phase after haemorrhage?
a) activation of renin-aldosterone-angiothensin system
b) increased output of vasopressine
c) redistribution of water from intersticium to the vessels
d) centralization of blood circulation

45. The main links of pathogenesis of moderate hemorrhage are:
a) cells dehydration
b) disorder of microcirculation and hypoxia

c) disorders of oxygen transport function of hemoglobin

46. The reflex phase after acute hemorrhage is characterized by:

a) hyperventilation
b) bradycardia
c) appearance of young red blood cells in blood
d) tachycardia

47. The reflex phase after acute hemorrhage is characterized by:

a) increased of the peripheral resistance
b) increased synthesis of angiotensin
c) increased synthesis of protein

48. In what time after acute hemorrhage will reticulocytosis occur?

a) *after* 5-6 hours
b) *after* 4-5 days
c) *after* 24-48 hours
d) immediately after hemorrhage

49. Adaptive response to acute hemorrhage after few hours is:

a) decreased venous return
b) centralization of blood circulation
c) peripheral tissue vasodilation
d) hypoventilation

50. Factors of the negative outcome of the bleeding are:

a) female sex
b) newborn period
c) old age
d) slow velocity of the bleeding

51. Normal count of reticulocytes is:

a) 0-1‰
b) 2-12‰
c) 20-25‰
d) 25-50‰

52. Compensated hemorrhage will occur in loss of:

a) 20-30% of the volume of circulated blood
b) 30-40% of the volume of circulated blood
c) >40% of the volume of circulated blood

53. The reason of hemorrhagic shock is loss of blood:

a) more than 10% of the volume of circulated blood
b) more than 30% of the volume of circulated blood
c) more than 20% of the volume of circulated blood

54. Reversible hemorrhagic shock will occur after loss of:

a) 20-30% of the volume of circulated blood
b) 30-40% of the volume of circulated blood
c) >40% of the volume of circulated blood

55. Torpid phase of hemorrhagic shock is characterized by:

a) unconscious
b) decreased blood pressure
c) excitement
d) increased cardiac output
e) multiple organ failure

56. The pathogenic factors of hemorrhagic shock include:

a) decreased blood pressure
b) decreased coronary circulation
c) increased venous return
d) increased blood viscosity

Answers:

1b, 2a, 3c, 4ac, 5bc, 6b, 7b, 8c, 9b, 10c, 11a, 12b, 13b, 14b, 15b, 16c, 17b, 18a, 19b, 20a, 21be, 22a, 23c, 24a, 25ab, 26a, 27a, 28bc, 29a, 30a, 31b, 32bc, 33bd, 34a, 35b, 36b, 37b, 38c, 39b, 40b, 41ab, 42cd, 43abc, 44abc, 45b, 46ad, 47a, 48b, 49b, 50bc, 51b, 52a, 53b, 54b, 55abe, 56abd.

Topic: ANEMIAS

1. Content of reticulocytes in hemolytic anemia is:

a) 0-1‰
b) 2-12‰
c) 20-25‰

2. Sideropenic syndrome is the result of lack of:

a) copper
b) iron
c) vitamin B_{12}
d) folic acid

3. Sideroachrestic anemia is the result of:

a) deficiency of copper
b) deficiency of iron
c) disturbance utilization of iron by cells
d) deficiency of folic acid

4. Mean corpuscular hemoglobin (MCH) in erythrocytes is:

a) 15,2-20,4 pg
b) 25,4-34,6 pg
c) 35,5-43,2 pg

5. Mean corpuscular hemoglobin (MCH) in iron deficiency anemia is:

a) 15,2-20,4 pg
b) 25,4-34,6 pg
c) 35,5-43,2 pg

6. Mean corpuscular hemoglobin (MCH) in vitamin B_{12} deficiency anemia is:

a) 15,2-20,4 pg
b) 25,4-34,6 pg
c) 35,5-43,2 pg

7. Destruction of erythrocytes in spleen is called:

a) erythropoiesis
b) erythrodiapedesis
c) erythrodieresis

8. The term «poikilocytosis» means:
a) RBCs with a normal content of hemoglobin;
b) abnormally shaped RBCs;
c) RBCs that are irregular in size.

9. Anisocytosis is the changing in the:
a) shape of RBCs
b) size of RBCs
c) hemoglobin content in RBCs

10. In what anemia the color index is increased?
a) acute posthemorrhagic anemia
b) vitamin B_{12} deficiency anemia
c) chronic posthemorrhagic anemia

11. In what anemia the count of reticulocytes is reduced?
a) in the acute posthemorrhagic anemia
b) in the hemolytic anemia
c) in the aplastic anemia

12. In what anemia the count of reticulocytes is increased?
a) acute posthemorrhagic anemia
b) vitamin B_{12} deficiency anemia
c) aplastic anemia

13. What anemia is megaloblastic?
a) chronic posthemorrhagic anemia
b) folic acid deficiency anemia
c) aplastic anemia
d) hemolytic anemia

14. . What anemia is called like "hemoglobinopathy"?
a) thalassemia
b) iron deficiency anemia
c) folic acid deficiency anemia

15. Syntesis of hemoglobin S is representative for:
a) thalassemia

b) sickle-cell anemia
c) ellyptocytosis

16. What enzyme deficiency in RBCs leads to ATP depletion and hemolytic anemia?

a) dehydrogenase glucose 6-phosphate
b) sodium-potassium ATPase
c) pyruvate kinase

17 What enzyme deficiency in RBCs leads to hemolytic anemia due to oxidative stress?

dehydrogenase glucose 6-phosphate
a) pyruvate kinase
b) hexokinase

18. What abnormal substance synthesis leads to microspherocytosis?

a) hemoglobin A
b) 2,3-biphosphoglyceric acid
c) spectrin

19. What abnormal substance synthesis leads to elliptocytosis?

a) hemoglobin A
b) 2,3-biphosphoglyceric acid
c) spectrin

20. What kind of anemia is the result of radiation sickness?

a) aplastic anemia
b) iron deficiency anemia
c) hemolytic anemia

21. What kind of anemia is the result of disturbance in intrinsic Castl's factor synthesis by gastric parietal cells?

a) hemolytic anemia
b) iron deficiency anemia
c) vitamin B_{12}-deficiency anemia

22. What disturbance develops during vitamin B_{12} or folic acid deficiency anemia?

a) decrease of syntesis of nucleic acids
b) intensification peroxidation

c) deranged glycolysis

23. What factors may cause megaloblastic anemia?

a) diet deficiency in folic acid
b) gastrectomy
c) chronic blood loss

24. What factors may cause megaloblastic anemia?

a) intrinsic factor deficiency
b) diet exsess in folic acid
c) chronic blood loss

25. What kind of anemia is characterized by megaloblastic type of hemapoiesis?

a) hemolytic anemia
b) chronic posthemorrhagic anemia
c) vitamin B_{12}-deficiency anemia

26. What kind of anemia is characterized by decreasing syntesis of heme?

a) iron deficiency anemia
b) sickle-cell anemia
c) thalassemia

27. What factors may cause iron deficiency anemia?

a) depletion of intrinsic iron stores
b) impairment of folic acid activation
c) chronic blood loss

28. What factors may cause iron deficiency anemia

a) deficiency of intrinsic *Castl's* factor
b) a decreased production of hydrochloric acid by gastric mucosa
c) an increased iron demands
d) deficiency of vitamin B_{l2}

29. The causes of hemolytic anemia are

a) transfusion of mismatched blood
b) intravenous injection of hypertonic solutions
c) malaria
d) synthesis of hemoglobin S

30. The causes of hemolytic anemia are:

a) severe hemorrhage
b) defective spectrin

c) insufficiency of glucose-6-phosphate dehydrogenase in erythrocytes

31. Specifications of the sickle cell anemia are:

a) it results from abnormal hemoglobin synthesis
b) it protects against malaria
c) it is transmitted by autosome dominant trait of inheritance

32 Is it true for sickle cell anemia?

a) it does not produce splenomegaly
b) it is accompanied by splenomegaly

33. Beta-thalassemia is characterized by:

a) familial occurrence
b) synthesis of abnormal beta-globin chains
c) increased destruction of maturing erythroblasts in the bone marrow

34. Beta-thalassemia is characterized by:

a) anemia development
b) reduction in the synthesis of beta-globin chains
c) reduction in the synthesis of alpha-globin chains

35. Manifestations in patients with hemolytic anemia are:

a) fatigue
b) splenomegaly
c) increased levels of free haptoglobin

36. Manifestations in patients with hemolytic anemia are:

a) jaundice
b) systolic heart murmur
c) reduction of the reticulocyte count

37. What manifestations occur in patients with hemolytic anemia?

a) hemoglobinuria
b) splenomegaly
c) increased levels of free haptoglobin

38. Severe intravascular hemolysis is manifested by:

a) hemoglobinemia
b) methemalbuminemia
c) splenomegaly

39. Severe intravascular hemolysis is manifested by:

a) hemoglobinuria
b) jaundice
c) normal levels of plasma haptoglobin
d) reticulocytosis

40. The conditions with erythrocytosis is

a) excessive intake of iron
b) acute cardiac insufficiency
c) chronic common hypoxia

41. The condition with absolute erythrocytosis is:

a) hemodilution
b) acute hypoxia
c) hemoconcentration
d) ischemia of the kidneys

Anwers:

1bc, 2b, 3c, 4b, 5a, 6c, 7c, 8b, 9b, 10b, 11c, 12a, 13b, 14a, 15b, 16c, 17a, 18c, 19c, 20a, 21c, 22a, 23ab, 24a, 25c, 26a, 27ac, 28bc, 29a, 30c, 31ab, 32b, 33ac, 34ab, 35ab, 36ab, 37ab, 38ab, 39ab, 40c, 41d.

Topic: QUANTITATIVE DISORDERS OF NEUTROPHILS. LEUKOCYTOSIS AND LEUKOPENIA

1. What leukocytes present in the peripheral blood of healthy people?

a) neutrophils
b) monocytes
c) promonocytes

2. What leukocytes present in the peripheral blood of healthy people?

a) lymphocytes
b) eosinophils
c) basophils

3. One of the developmental stages of neutrophylic leukocyte is:

a) myeloblast
b) prolymphocyte
c) promonocyte
d) monoblast

4. One of the developmental stages of lymphocyte is:

a) myeloblast
b) lymphoblast
c) promonocyte
d) monoblast

5. Stages of monocyte maturation are:

a) myeloblast
b) prolymphocyte
c) promonocyte
d) monoblast

6. Morphologically recognized granulocytic cell is:

a) lymphoblast
b) myeloblast
c) monoblast
d) erythroblast

7. Granulocytes formed in:

a) spleen

b) bone marrow
c) liver
d) nodi lymphatici

8. What cells are mononuclear leukocytes?
a) eosinophils
b) monocytes
c) neutrophils
d) basophils

9. The functions of the neutrophils are:
a) synthesis of antibodies
b) phagocytosis
c) secretion of enzymes and bactericide agents
d) secretion of histamine and heparin

10. The calculation of leucocytes count performs in:
a) blood smear
b) Goryave chamber
c) special tube
d) photocolorimetric determination

11. The calculation of leucocyte formula occurs in:
a) blood smear
b) Goryaev chamber
c) special tube
d) photocolorimetric determination

12. Leukocyte formula is:
a) percentage of the different types of the leukocytes
b) absolute lymphocyte count
c) relation of nonmature forms of leucocytes to mature ones
d) relation of granulocytes and nongranulocytes

13. Children have the following peculiarities of leukocyte formula:
a) lymphocytes predominate at birth
b) neutrophils predominate on the 5^{th} year
c) leukocyte formula is the same as in adults on the 5^{th} day of life
d) lymphocytes predominate at 2 years old

14. Physiologic leukocytosis occurs:
a) in administration of glucocorticoids
b) after food intake

c) in physical stress
d) in sleep

15. The causes of physiologic leukocytosis are:
a) pregnancy
b) hemorrhage
c) fever
d) food intake

16. Acute purulent inflammatory processes lead to:
a) eosinophilia
b) lymphocytosis
c) neutrophilic leukocytosis

17. Type of leukocytes increase in allergic reactions more often
a) eosinophils
b) neutrophils
c) lymphocytes

18. Type of leukocytosis appears in chronic inflammatory processes very often
a) eosinophilic
b) basophilic
c) neutrophilic
d) monocytic

19. What index is used for assessment of degree of the nuclear shift in leukogramm?
a) Bobrov's
b) Tiffno
c) nucleocytoplasmic

20. The types of nuclear shift to the left are:
a) myelocytic
b) degenerative
c) monocytic
d) leukemoid

21. The nuclear shift to the right is the increase of the:
a) common count of leukocytes
b) percent of the mature neutrophils with hypersegmentation
c) percent of the lymphocytes

d) count of granular leukocytes

22. The nuclear shift to the left is:

a) decrease the mature leucocytes from common count of leucocytes

b) increase the count of immature neutrophils

c) increase percent of the lymphocytes

d) decrease the count of granular leukocytes

23. Nuclear shift shows:

a) type of leukocytosis

b) severity of inflammation

c) type of leukopenia

d) stage of inflammation

24. Index of the nuclear shift is relation:

a) of the count of inmature forms of neutrophyls to mature ones

b) of granulocytes and nongranilocytes

c) of the count of granulocytes to band forms

d) of the myeloblasts to myelocytes

25. Typical signs of neutrophilic leukocytosis are

a) nuclear shift to the left

b) nuclear shift to the right

c) increased number of leukocytes in the blood

d) increased number of reticulocytes

26. Mechanisms of redistributive leukocytosis are:

a) increased release of leukocytes from the marrow storage pool

b) expansion of the marrow precursor pool

c) decreased extravasation of leukocytes into tissues

27. Mechanisms of redistributive leukocytosis are:

a) an increase in the peripheral blood marginating pool

b) an increase in the peripheral blood circulating pool

c) decrease extravasation of leukocytes into tissues

28. Pathologic leukocytosis can occur:

a) after a hot bath

b) at pregnancy

c) at administration of glucocorticoids

d) at helminthiasis

29. What type of leukocytes increases in viral infection?
a) eosinophils
b) neutrophils
c) monocytes
d) lymphocytes

30. What disease is accompanied with eosinophilia?
a) asthma
b) bacterial pneumonia
c) myocardial infarction

31. What disease can lead to eosinophilia?
a) croupous pneumonia
b) tuberculosis
c) helminthic invasion
d) cardiac infarction
e) viral hepatitis

32. What diseases are accompanied with eosinophilia?
a) allergic skin diseases
b) echinococcal infection
c) lymphoblastic leukemia

33. Eosinophilia occurs in
a) viral diseases
b) autoimmune processes
c) recovery during bacterial infection

34. What diseases are often accompanied with monocytosis?
a) tuberculosis
b) bacterial pneumonia
c) malaria

35. Administration of cytostatics leads to
a) neutrophilia
b) monocytosis
c) thrombocytosis
d) agranulocytosis

36. Mycosis leads to:

a) eosinophilia
b) lymphocytosis
c) monocytopenia

37. Leukopenia may be a result of:
a) insufficiency of vitamin B_{12}
b) overwhelming bacterial, fungal or rickettsial infections
c) antimetabolites used in cancer treatment
d) echinococcal infection
e) malaria

38. Leukopenia may be a result of:
a) splenomegaly
b) bone marrow aplasia
c) allergic skin diseases
d) tuberculosis

39. Mechanisms of redistributive leukopenia are:
a) increased leukocyte destruction in the vascular bed
b) low rate of leukocytes released from the marrow storage pool
c) increased leukocyte destruction by the spleen

40. Mechanisms of leukopenia are:
a) suppression of leukopoiesis
b) increased margination of leukocytes in the vascular bed
c) decreased extravasation of leukocytes into tissues

41. Mechanisms of leukopenia:
a) suppression of leukopoiesis
b) increased leukocyte destruction in the vascular bed
c) decreased leukocyte destruction by the spleen

42. The criterion of agranulocytosis is:
a) count of leukocytes below $2,5 \times 10^9$ /l
b) count of leukocytes below 1×10^9 /l
c) absence of agranular leukocytes
d) increasing count of agranular leukocytes

43. The term «agranulocytosis» means
a) increased count of agranulocytes in blood
b) abrupt decreased count of granulocytes in blood
c) disappearance of specific granulosity in cells

Answers:

1ab, 2abc, 3a, 4b, 5cd, 6b, 7b, 8b, 9bc, 10b, 11a, 12a, 13d, 14bc, 15ad, 16c, 17a, 18d, 19a, 20bd, 21b, 22b, 23b, 24a, 25ac, 26ac, 27bc, 28ad, 29d, 30a, 31c, 32ab, 33bc, 34ac, 35d, 36b, 37abc, 38ab, 39b, 40ab, 41ab, 42b, 43b.

Topic: LEUKEMIA

1. What is leukemia?

a) benign tumor of hematopoietic tissue
b) sign of the inflammation
c) malignant tumor of hematopoietic tissue
d) sign of the allergy

2. What factors may cause leukemia?

a) smoking
b) aberration of the first chromosome pair
c) Epstein-Barr virus

3. What factors may cause leukemia?

a) polycyclic hydrocarbons
b) ionizing radiation
c) ultraviolet rays

4. Hiatus leukemicus is the absence of:

a) the maturating cells
b) morphologically undifferentiated cells
c) mature cells

5. In aleukemic type of leukemias

a) amount of leukocytes increases in blood
b) amount of leukocytes decreases in blood
c) normal count of leukocytes in blood
d) blastes are absent

6. Acute leukemia differs from chronic one by:

a) the presence of anemia
b) the absence of hiatus leukemicus
c) the presence of hiatus leukemicus
d) small blast count in peripheral blood

7. What are the main changes in the hemogram during acute leukemia?

a) low percent of the blastes
b) the presence of the cells of 5 class of maturation
c) the presence of hiatus leukemicus

d) high percent of the blast cells

8. During acute leukemia:

a) cellular differentiation fully stops on the 2-4 class level
b) cellular differentiation don't fully stops on the 2-4 class level

9. Acute leukemia is characterized by:

a) more than 30% of blast cells in the bone marrow
b) eosinophilic-basophylic assosiation
c) less than 30% of blast cells in the bone marrow

10. Acute myelogenous leukemia is characterized by:

a) proliferation of megaloblastes
b) more than 30% of the blast cells in the peripheral blood
c) less than 30% of the blast cells in the peripheral blood

11. Manifestations of acute leukemia include:

a) increased rate of blastes cells division
b) infiltrative growth
c) morphological abnormalities of leukemic cells
d) hyperalbuminemia

12. Manifestations of acute leukemias are:

a) intoxication of organism
b) the ability to metastasize
c) total block of differentiation

13. What kind of cells in the peripheral blood indicates acute myeloid leukemia?

a) myelocytes
b) immature lymphocytes
c) myeloblastes

14. What kind of cells in the peripheral blood indicates acute myeloid leukemia?

a) metamyelocytes
b) myeloblastes
c) lymphoblastes

15. What kind of changes occurs in peripheral blood during acute myeloblastic leucaemia?

a) elevated peripheral blood myeloblastes count
b) low peripheral blood myeloblastes count

c) the presence of Botkin-Gumbrecht shadows
d) the presence of hiatus leukemicus

16. What kind of changes occurs in peripheral blood during chronic myeloid leucaemia?

a) the absence of hiatus leukemicus
b) the presence of hiatus leukemicus
c) small blast count in peripheral blood
d) increase of blast count in peripheral blood

17. May chronic myeloid leukemia be associated with…

a) a large number of myeloblasts ?
b) a small amount of myeloblasts?
c) increased amount of basophiles and eosinophiles?
d) absent hiatus leukemicus?

18. Which cells present in peripheral blood at chronic myeloid leukemia?

a) myeloblastes
b) mature neutrophiles (segmentes)
c) promonocytes
d) lymphoblastes

19. Which cells present in peripheral blood at chronic myeloid leukemia?

a) promyelocytes
b) lymphoblastes
c) promonocytes
d) myeloblastes

20. Which cells present in peripheral blood at chronic myeloid leukemia?

a) metamyelocytes
b) myeloblastes
c) monocytes
d) lymphocytes

21. Chronic leukemias are characterized by:

a) more than 30% of blast cells in the bone marrow
b) immune destruction of leukemic cells in the bone marrow
c) less than 30% of blast cells in the bone marrow

22. Chronic leukemias are characterized by:

a) proliferation of megaloblastes
b) more than 30% of the blast cells in the peripheral blood
c) less than 30% of the blast cells in the peripheral blood

23. Chronic myeloid leukemia is characterized by:

a) eosinophilic-basophilic association
b) hiatus leukemicus
c) more than 30% of the blast cells in the peripheral blood
d) less than 30% of blast cells in the bone marrow

24. Chronic lymphoid leukemia is characterized by:

a) increased number of lymphoblastes more than 60%
b) the presence of the toxic granules in myeloid cells
c) lymphocytosis
d) neutrophilic leukocytosis

25. The main signs of chronic leukemias in hemogram are:

a) low percent of the blastes
b) the presence of the cells of 5 class of maturation
c) the presence of hiatus leukemicus
d) high percent of the blast cells
e) the absence of the blastes

26. What changes occur in peripheral blood at chronic lymphoblastic leukemia?

a) small count of lymphoblastes
b) increased count of myeloblastes
c) the presence of Botkin-Gumbrecht bodies
d) increased amount of eosinophiles and basophiles

27. What changes occur in peripheral blood at acute lymphoblastic leukemia?

a) small count of lymphoblastes
b) increased count of megaloblastes
c) a lot of lymphoblastes
d) the presence of Botkin-Gumbrecht bodies

28. Increased count of eosinophiles and basophiles can be observed at:

a) chronic lymphoid leukemia
b) chronic myeloid leukemia

c) acute lymphoblastic leukemia
d) acute myeloblastic leukemia

29. What is the cause of hemorrhagic syndrome during leukemia?

a) increased release of intrinsic procoagulants
b) infiltration of the vascular wall by leukemic cells
c) severe anemia
d) severe thrombocytopenia

30. Which causes can lead to the death during leukemia?

a) derangements of metabolism
b) anemia
c) pneumonia

31. Which causes can lead to the death during leukemia?

a) hemorrhage into life-important organs
b) sepsis
c) cachexia

32. We should differentiate leukemoid reaction of neutrophil type with:

a) chronic lymphatic leukemia
b) chronic myeloid leukemia
c) acute myeloblastic leukemia
d) acute lymphoblastic leukemia

Answers:

1c, 2ac, 3ab, 4a, 5cd, 6c, 7cd, 8a, 9a, 10b, 11ac, 12bc, 13c, 14b, 15ad, 16ac, 17bcd, 18ab, 19ad, 20ab, 21c, 22c, 23ad, 24c, 25ab, 26ac, 27c, 28b, 29d, 30c, 31ab, 32b.

Topic: DISORDERS OF HEMOSTASIS. THROMBOPHILIC DISORDERS OF HEMOSTASIS

1. The endothelial cells of intact vessels prevent blood coagulation by secretion of:

a) prostacyclin
b) thromboxane
c) factor IX
d) vitamin K

2. Antithrombogenic property of the endothelium is caused by production of:

a) prostacyclin
b) protein C
c) NO
d) angiotensin II

3. Procoagulant activity of the endothelium is caused by the production of:

a) prostaglandin I_2
b) NO
c) angiotensin II
d) endothelin

4. The platelet-vascular hemostasis is nessesary for:

a) white trombus formation
b) red thrombus formation
c) the postcoagulative changing of the thrombus

5. The functions of platelets in hemostasis are:

a) angiotrophic
b) adhesive
c) coagulative
d) bactericidic

6. Platelet precursor is:

a) plasmacytoblast
b) myeloblast
c) megacaryoblast

d) lymphoblast

7. Which factor can initiate blood coagulation?

a) factor I
b) factor X
c) factor XII
d) prothrombin

8. *What platelet factor takes part in the prothrombinase* synthesis?

a) 3 platelet factor
b) 4 platelet factor
c) actomyosin
d) thromboxane

9. Inducers of platelets aggregation are:

a) aspirin
b) ADP
c) urea
d) thrombin

10. Platelets adhesion is mediated by the following receptors:

a) IIb/IIIa
b) Ia/IX
c) Fas- receptors
d) DR – death receptors

11. Factors which induce platelet aggregation?

a) thromboxane A_2
b) ADP
c) ATP
d) prostacycline I_2

12.Factors which induce platelet aggregation?

a) prostacycline I_2
b) epinephrine
c) NO

13. Antiaggregant for thrombocytes is:

a) thrombin
b) ADP

c) collagen
d) aspirin

14. Extrinsic coagulation pathway of hemostasis includes activation of:

a) factor VII
b) factor VIII
c) factor IX
d) factor XII

15. The factor which converts the prothrombin to thrombin:

a) factor I
b) factor VII
c) factor IXa
d) factor Xa
e) factor XIII

16. The clot retracts by:

a) fibrin-stabilizing factor
b) thrombocytes factors
c) kinines system

17. The synthesis of thrombin is blocked by:

a) calcium ions
b) collagen
c) von Willebrand factor
d) anticoagulants

18. Anticoagulant system is aimed at:

a) depression of blood coagulation
b) thrombolysis

19. Plasmin system is aimed at:

a) depression of blood coagulation
b) thrombolysis

20. The components of anticoagulate system are:

a) antithrombin III
b) antihemophilic globulin
c) angiotensine
d) plasmin

21. Components of anticoagulant system are:

a) antithrombin III

b) antihemophylic globulin
c) heparin
d) plasmin

22. Fibrinolytics – are:
a) antithrombin III
b) antihemophylic globulin
c) heparin
d) plasmin

23. Anticoagulative effect of heparin is realized through inhibition of*:*
a) prothrombinase synthesis only
b) the synthesis of thrombin only
c) fibrin synthesis only
d) all the phases of blood coagulation

24. The anticoagulative effect of plasmin is realized through:
a) inhibition of prothrombinase formation
b) inhibition of thrombin formation
c) inhibition of fibrinogenesis
d) activation of fibrinolysis

25. Fibrin-split products stimulate
a) synthesis of factor III
b) destruction of fibrin
c) activation of factor XII

26. What thrombus forms the first phase of blood clot formation?
a) white
b) red

27. The major constituent of white thrombus is:
a) fibrin
b) RBC
c) WBC
d) albumens
e) platelets

28. The major constituent of red thrombus is:
a) fibrin
b) RBC
c) WBC
d) albumens

e) platelets

29. The distinctive signs of a clot are:

a) has white head that fixed to the vessels
b) intravital synthesis
c) doesn't fixed to the vessels
d) synthesis posthumously

30. The anticoagulants are:

a) fibrin-split products
b) antithrombin III
c) heparin
d) ADP

31. Substances can split the fibrin molecule?

a) plasminogen
b) plasmin
c) antiplasmin

32. Substances can split the fibrin molecule?

a) plasmin
b) heparin-like molecule
c) antithrombin III
d) protein C

Answers:

1a, 2abc, 3cd, 4a, 5abc, 6c, 7c, 8a, 9bd, 10ab, 11ab, 12b, 13d, 14a, 15d, 16ab, 17d, 18a, 19b, 20ab, 21acd, 22d, 23d, 24d, 25b, 26a, 27e, 28a, 29ab, 30abc, 31b, 32a.

Topic: DISORDERS OF HEMOSTASIS. HEMORRHAGIC DISORDERS OF HEMOSTASIS

1. Disturbances of blood coagulation lead to:

a) disease of hemostasis
b) disease of homeostasis
c) metabolism disorder
d) inflammation

2. Hemosthasiopathias – are the disturbances of:

a) hemostasis system
b) homeostasis
c) red blood cells
d) white blood cells

3. Hemorragic hemostasiopathia is a kind of hemostasis disorder connected with:

a) increased coagulability of blood
b) increased bleeding
c) increased thrombocytopoiesis
d) simultaneous thrombosis and bleeding

4. Trombophilic hemostasiopathias is a kind of hemostasis disorder connected with:

a) increased coagulability of blood
b) increased bleeding
c) increased thrombocytopoiesis
d) simultaneous thrombosis and bleeding

5. Trombohemorrhagic hemostasiopathias is a kind of pathology with:

a) increased bleeding
b) increased trombocytopoiesis
c) simultaneous thrombosis and bleeding

6. What concerns to hemorrhagic hemostasiopathias?

a) Disseminated intravascular coagulation – DIC
b) thrombosis
c) angiopathias

d) coagulation disorders
e) thrombocytopenia

7. The count of platelets lead to hemorrhagic syndrome than:
a) *is less than* 150 x 10^9 /l
b) *is less than* 320 x 10^9 /l
c) *is less than* 50 x 10^9 /l
d) *is less than* 400 x 10^9 /l

8. The causes of thrombocytopenia are:
a) malignant tumor
b) radiation
c) acute hemorrhage
d) jaundice

9. Idiopathic thrombocytopenic purpura is example of a:
a) coagulation disorder
b) thrombocytopenia
c) angiopathy
d) thrombophilia

10. The causes of hemorrhagic angiopathias – are:
a) infectious disease
b) allergy
c) diabetes insipidus
d) hypovitaminosis P and C

11. Scorbutus is a cause of:
a) coagulation disorder
b) thrombocytopenia
c) angiopathia
d) trombohemorrhagic hemostasiopathia

12. Henoch-Schonlein purpura is:
a) coagulation disorder
b) thrombocytopenia
c) angiopathia
d) trombohemorrhagic hemostasiopathias

13. The mechanism of increased hemorrhage in immune thrombocytopenic purpura is:
a) decreased platelet adhesion
b) decreased platelet aggregation
c) lack of nutrition function of the platelets

d) disorder of vasoactive function of platelets

14. Glanzmann thrombasthenia is:

a) angiopathia
b) qualitative disorder of platelets
a) coagulation disorder
b) disorder of plasmin system

15. Hemorrhagic hemostasiopathies are:

a) qualitative disorders of platelets
b) angiopathia
c) posthemorrhagic anemia
d) leukemoid response

16. Thrombasthenia results from:

a) defective platelet aggregation
b) impaired secretion of prostaglandins
c) deficiency of von Willebrand's factor
d) deficiency of glycoprotein receptor IIb-IIIa

17. Thrombasthenia results from:

a) impaired secretion of ADP
b) deficiency of glycoprotein receptor Ib-IX
c) deficiency of receptor gp120

18. Following tests are used for assessment of aggregation properties of trombocyte hemostasis component:

a) pinch test
b) tromboelastography
c) aggregatometry

19. Coagulation disorders are:

a) scorbut
b) Henoch-Schonlein purpura
c) idiopapthic thrombocytopenic purpura
d) haemophilia

20. The coagulation disorders are:

a) hemorrhagic newborn disease
b) Henoch-Schonlein purpura
c) idiopathic thrombocytopenic purpura
d) hemophylia

21. Coagulation disorder of the first phase of blood coagulation is:

a) hemorrhagic newborn disease
b) lack of Fitzgerald factor
c) idiopathic thrombocytopenic purpura
d) hemophylia

22. The cause of the coagulation disorders with disturbance of the first phase of blood coagulation is the deficiency of:

a) vitamin K
b) Fletcher's factor
c) Hageman's factor
d) fibrinogen

23. Deficiency of what factor leads to hemophilia A?

a) VIII
b) IX
c) XI

24. Deficiency of what factor leads to hemophilia B?

a) VIII
b) IX
c) XI

*25.Coagulation factor which is reduced in hemophilia **A?***

a) factor I
b) factor VIII
c) factor XII

*26.Coagulation factor which is reduced in hemophilia B**?***

a) factor VIII
b) factor IX
c) factor XI

27. Hemophilia is a:

a) coagulation disoder
b) thrombocytopenia
c) angiopathia
d) thrombohemorrhagic hemostaiopathia

28. Von Willebrand disease is:

a) angiopatia

b) thrombocytopenia
c) coagulation disorder
d) mixed hemorrhagic hemostasiopathias

29. Deficiency of fibrinogen leads to disorder of:
a) synthesis of prothrombinase
b) thrombinogenesis
c) fibrinogenesis
d) retraction and fibrinolysis

30. Lack of plasmin leads to disorder of:
a) prothrombinogenesis
b) trombinogenesis
c) fibrinogenesis
d) retraction and fibrinolysis

31. Deficiency of prothrombin leads to disorder of:
a) prothrombinogenesis
b) thrombinogenesis
c) fibrinogenesis
d) retraction and fibrinolysis

32. Defficiency of retractozim leads to disturbance of:
a) synthesis of prothrombinase
b) synthesis of thrombin
c) synthesis of fibrin
d) retraction and fibrinolysis

33. Deficit of calcium leads to disturbance of:
a) synthesis of prothrombinase only
b) synthesis of thrombin only
c) synthesis of fibrin only
d) all phases of secondary hemostasis

34. Lack of calcium leads to:
a) increased haemorrage
b) thrombosis
c) *Disseminated intravascular coagulation (DIC) syndrom*
d) excess of thrombus retraction

35. The coagulation disorder with disturbance of the 2nd stage of blood coagulation is:
a) hemorrhagic newborn disease

b) lack of fibrinogen
c) idiopathic thrombocytopenic purpura
d) excess use of coumarin drugs

36. The cause of the coagulation disorder with disturbance of the 3^{d} stage of blood coagulation are:

a) hemorrhagic newborn disease
b) lack of kininogen
c) idiopathic thrombocytopenic purpura
d) lack of fibrinogen

37. Lack of vitamin K leads to:

a) coagulation disorder
b) *Disseminated intravascular coagulation (DIC) syndrom*
c) thrombocytopenia
d) angiopathia

38. Disseminated intravascular coagulation syndrom concerns to hemostasiopathias:

a) thrombophilic
b) hemorrhagic
c) thrombohemorrhagic

39. The causes of disseminated intravascular coagulation syndrom are:

a) malignant tumor
b) acute radiation sickness
c) acute bleeding
d) cardiac insufficiency

40. Causes of disseminated intravascular coagulation syndrome:

a) severe obstetric complications
b) fever
c) massive trauma
d) sepsis

41. Causes of disseminated intravascular coagulation syndrome:

a) carcinomatosis
b) extensive burn
c) mild inflammation

42Mechanisms hemorrhage in disseminated intravascular coagulation (DIC) syndrome?

a) inhibition of platelet aggregation

b) consumption of platelets and clotting factors
c) decreased production of von Willebrand's factor

43. Mechanisms hemorrhage in disseminated intravascular coagulation (DIC) syndrome?

a) activation of platelet aggregation
b) activation of plasminogen
c) increased expression of heparin-like molecule

Answers:

1a, 2a, 3b, 4a, 5c, 6cde, 7c, 8ab, 9b, 10ad, 11c, 12c, 13abc, 14b, 15ab, 16d, 17b, 18c, 19d, 20ad, 21bd, 22bc, 23a, 24b, 25b, 26b, 27a, 28d, 29c, 30d, 31b, 32d, 33d, 34a, 35ad, 36d, 37a, 38c, 39ab, 40acd, 41ab, 42ab, 43cd.