IRON DEFICIENCY ANEMIA

Simple complement:

1. The hemoglobin level immediately after birth constitutes:
   A. 100-140 g/l
   B. 110-130 g/l
   C. 120-140 g/l
   D. 140-160 g/l
   E. 180-240 g/l

2. The hemoglobin level in healthy infants must reach the level below:
   A. 90 g/l
   B. 100 g/l
   C. 110 g/l
   D. 120 g/l
   E. 130 g/l

3. Choose the most common cause of iron deficient anemia in children:
   A. Chronic diseases
   B. Nutritional factor
   C. Chronic bleeding
   D. Iron absorption disorders
   E. Infectious diseases

4. Choose the most specific indicator in the diagnosis of iron deficient anemia in children:
   A. Hypochromia of red blood cells
   B. Presence of source of bleeding
   C. Decreasing of serum iron level
   D. Insufficiency of iron in the diet of the child
   E. Active growth of the child

5. Select the change of the laboratory test that is not specific for iron deficient anemia:
   A. Decrease of the percentage of transferrin saturation
   B. Decrease of the serum iron level
   C. Decrease of the serum ferritin level
   D. Decrease of the hemoglobin concentration in the erythrocyte
   E. Decrease of the iron-binding capacity of the blood

6. Select the etiology of the anemia of premature baby:
   A. Hemolytic anemia
   B. Iron deficient anemia
   C. Posthemorrhagic anemia
   D. Aplastic anemia
   E. Hereditary anemia

7. Select the food from which iron is easier absorbed:
   A. Meat
   B. Fruits
   C. Vegetables
   D. Cereals
   E. Milk

8. Select the feature that is nor characteristic for B12 - deficient anemia:
   A. Megaloblastic type of hematopoiesis
B. Disorder of internal factor secretion
C. Macrocytic hyperchromic anemia
D. Insufficient intake of vit. B12 with food
E. Increase of serum iron level

9. A case of two months premature child, breastfed. Results of the complete blood count showed the Hb level of 130g/l; red blood cells – 3.9 mln/mm³; ESR - 7 mm/hour. What would be necessary recommendations for this child?
   A. Prescription to the child of iron containing drug for 1 month
   B. Only changes to improve maternal nutrition
   C. Prescription to the mother of iron containing drug
   D. The child doesn’t need iron containing drug
   E. Prescription to the child of iron containing drug during the first year of life, 1/2 from the therapeutic dose

10. Choose the feature that is not characteristic for iron deficiency:
   A. It’s more frequently revealed in children of 6-24 months of age
   B. Usually iron deficient children are fed mostly with milk and buckwheat gruel
   C. Iron deficiency develops asymptotically
   D. Microcytic hypochromic anemia
   E. Increased serum levels of iron

11. Choose the feature that is not applicable for the treatment recommendations in small children with iron deficiency anemia:
   A. Prescription of iron containing drug in dose 6 mg/kg/24 hrs
   B. Treatment continues until the normalization of hemoglobin level
   C. Treatment continues 2-3 months after the normalization of hemoglobin level
   D. Parenteral administration of iron containing drug in malabsorption syndrome
   E. Correction of the diet

12. Indicate the type of anemia that is not microcytic and hypochromic:
   A. Iron deficiency anemia
   B. Beta-thalassemia major
   C. Beta-thalassemia minor
   D. Insufficiency of glucoso-6-phosphatdehydrogenase
   E. Anemia of chronic diseases

13. Choose the wrong statement for the folic acid deficiency anemia:
   A. Treatment with Phenobarbital influences folic acid metabolism
   B. It develops in malignant diseases
   C. It doesn’t develop in children on goat’s milk feeding
   D. It can develop during pregnancy
   E. It develops in malabsorption

   **Multiple complements:**

1. Select etiologic causes of iron deficiency anemia development:
   A. Insufficiency of iron in food
   B. Bone marrow aplasia
   C. Syndrome of malabsorption
   D. Increased necessities in iron of the child’s organism
   E. Infectious diseases

2. Indicate organs that represent storage iron pools in the body:
A. Lymphatic ganglia
B. Liver
C. Kidneys
D. Muscle tissue
E. Spleen

3. Enumerate symptoms included in the anemic syndrome:
   A. Pallor of the skin
   B. Lymphadenopathy
   C. Trophic changes of skin, hair, nails
   D. Systolic murmur on apex auscultation
   E. Fever

4. Indicate changes in the Complete Blood Count in iron deficiency anemia:
   A. Hemoglobin level
   B. White cells count
   C. Reticulocyte count in the peripheral blood
   D. Mean corpuscular hemoglobin (MCH) and mean corpuscular hemoglobin concentration (MCHC)
   E. Moderate decrease of red blood cells count

5. Enumerate laboratory tests changes in iron deficiency anemia:
   A. Decrease of serum iron level
   B. Decrease of plasma iron-binding capacity
   C. Hyperchromy in the blood smear
   D. Hypochromy in the blood smear
   E. Transferrin saturation and ferritin are lower than normal

6. Enumerate features characteristic for vitamin B12 deficiency anemia:
   A. Megaloblastic type of hematopoiesis
   B. Decrease of the mean corpuscular hemoglobin (MCH) and mean corpuscular hemoglobin concentration (MCHC)
   C. Hyperchromic anemia
   D. Decrease of serum iron level
   E. Microcytic anemia

7. Enumerate food from which iron is readily absorbed:
   A. Meat
   B. Liver
   C. Fish
   D. Vegetables
   E. Fruits

8. Enumerate recommendations for iron deficiency anemia treatment:
   A. Foods containing heme iron (meat, poultry, and fish)
   B. Corticosteroids
   C. Vitamin B12
   D. Vitamin C
   E. Iron supplements

9. Enumerate recommendations for iron deficiency in infants:
   A. Encouraging a diversified diet rich in sources of iron and vitamin C, continuing use of cereals fortified with iron
   B. Introduction of cow's milk in the first year of life
   C. Breastfeeding
D. Infants with one or more risk factors should be screened for iron deficiency
E. Iron supplementation via drops or iron-fortified cereal for preterm and low-birth-weight infants

10. A case of two-year old child. History: frequent acute respiratory infections, gastroenterocolitis, pallor of the skin, loss of appetite. Complete Blood Count results: hemoglobin level 92 g/l; red blood cells 3,8 mln/mm³; decreased mean corpuscular hemoglobin (MCH) and mean corpuscular hemoglobin concentration (MCHC); ESR – 7 mm/hour. Enumerate correct statements from below:
   A. Diagnosis - Iron deficiency anemia
   B. The child needs iron supplements only until normalization of red blood indices
   C. The child needs iron supplements until normalization of red blood indices and several more months with prophylactic dose
   D. Iron must be administered intravenously
   E. Dose of elementary iron in the iron supplement should be 5-6 mg/kg body weight in 24 hrs

11. Enumerate diseases that cause deficient iron absorption:
   A. Celiac disease
   B. Cystic fibrosis
   C. Helminthes infestation
   D. Rickets
   E. Gall bladder diseases

12. Enumerate morphologic changes of red blood cells characteristic for iron deficiency anemia:
   A. Anisocytosis, microcytosis
   B. Erythrocytes in the form of target cells
   C. Poikilocytosis
   D. Spherocytosis
   E. Macrocytosis

13. Enumerate diseases that should be differentiated from iron deficiency anemia:
   A. Acquired hemolytic anemia
   B. Thalassemia
   C. Sickle cell anemia
   D. Hemophilia
   E. Disseminated Intravascular Coagulation Syndrome

14. Enumerate etiological factors characteristic for the folate-deficiency anemia:
   A. Cancer
   B. Could be inherited congenital folate malabsorption
   C. Diet rich in green leafy vegetables, fresh fruits, cereals, meats
   D. Often occurs during pregnancy
   E. Anticovulsants such as phenytoin, primidone, and phenobarbital, can impair the absorption of folic acid

15. The microcytic anemia is characteristic for:
   A. Iron deficiency
   B. Vitamin B12 deficiency
   C. Lead poisoning
   D. Red cell membrane defects
   E. Thalassemia traits

16. The macrocytic anemia is characteristic for:
   A. Vitamin B12 deficiency
B. Thalassemia traits  
C. Fanconi’s anemia  
D. Folate deficiency  
E. Red blood cell membrane disorders

17. Enumerate correct statements for specific prophylaxis of iron deficiency anemia:
   A. Iron supplements indicated to premature infants from the age of eight weeks
   B. Iron supplements are indicated during pregnancy
   C. Iron supplement dose constitutes 6 mg/kg daily
   D. Iron supplement dose constitutes 2-3 mg/kg daily
   E. Duration of iron prophylaxis is only 1-2 months.

**Iron deficient anemias**

**Correct answers**

Simple complement:
1. E  
2. C  
3. B  
4. C  
5. E  
6. B  
7. A  
8. E  
9. E  
10. E  
11. B  
12. D  
13. C

Multiple complement:
1. ACDE  
2. BE  
3. ACD  
4. ADE  
5. ADE  
6. AC  
7. AC  
8. ADE  
9. ACDE  
10. ACE  
11. ABC  
12. AC  
13. ABC  
14. ABDE  
15. ACE  
16. ACD  
17. ABD