Water-Electrolite Balance

1. Overhydrated is this organism in which the water content is more than:

    1. 20% of the body weight.
    2. 45% of the body weight.
    3. 65% of the body weight.
    4. 80% of the body weight.
    5. 95% of the body weight.

2. An adult organism with a normal BMI is dehydrated when the water content is:

    1. 90% of the body weight.
    2. 80% of the body weight.
    3. 70% of the body weight.
    4. 60% of the body weight.
    5. 40% of the body weight.

3. “Blocked” osmotic transfer of water between cellular and intracellular space is observed in case of:

    1. Lower osmotic pressure in the extracellular space.
    2. Higher osmotic pressure in the cells.
    3. Higher osmotic pressure in the extracellular space.
    4. Lower intracellular osmotic pressure.
    5. Cellular and extracellular osmotic pressure without changing.

4. Water goes in the cells and damages them under what circumstances:

    1. Lower intracellular osmotic pressure.

    2. Lower exracellular osmotic pressure.

    3. Higher exracellular osmotic pressure.

    4. Higher intracellular osmotic pressure.

    5. 1, 3.

    6. 2, 4.

5. The extracellular osmotic pressure could be disturbed in:

    1. Activated or suppressed renin-angiotensin-aldosterone system.

    2. Disturbance in the prostacyclin / thromboxane A2 system.

    3. Hypo- or hypersensitivity of the center of thirst.

    4. A-, hypo-, or hyperbulia.

    5. 1, 3.

    6. 1, 2, 3, 4.

6. Hypotonic dehydration is observed when there is:

    1. Parallel loss of water and electrolytes.

    2. Greater loss of electrolytes.

    3. Greater loss of water.

    4. Hypotonic osmotic extracellular reset.

    5. 2, 4.

7. The Darrow-Yannet mechanism does not take place in:

1.Hypotonic dehydration.

2. Hypertonic dehydration.

3. Isotonic dehydration.

4. Intracellular dehydration.

5. Intracellular hyperhydration.

8. There is no thirst in case of:

1. Decreased volume of extracellular fluid.

2. Hyperfunction of the renin-angiotensin-aldosterone system.

3. Hypothalamic lesion of osmotic receptors.

4. Hypersecretion of renal prostaglandins.

5. Hypertonic dehydration.

9. The volume of interstitial fluid is increased in:

1. Hypoproteinemia

2. Overinfusion.

3. Venous stasis.

4. Disturbed lymphatic flow.

5. 2, 3.

6. 1, 2, 3, 4.

10. In what conditions there is an isotonic dehydration:

1. Parallel loss of water and electrolytes.

2. Greater loss of electrolytes.

3. Greater loss of water

4. Unsatisfied thirst.

5. A diet lacking salt.

11. The infusion of normal saline to patients with disturbed renal function leads to:

1. Isotonic hyperhydration.

2. Hypertonic hyperhydration.

3. Hypotonic hyperhydration.

4. Hypotonic normovolemia.

5. Hypertonic dehydration.

12. The patients feel extreme thirst (or they get the so called “thirsty” edema) in:

1. Hypertonic hyperhydration.

2. Hypotonic hyperhydration.

3. Hypertonic dehydration.

4. Hypotonic dehydration.

5. 2, 4.

6. 1, 3.

13. Edema is defined as a condition of positive water balance with:

1. Elevated amount of liquid in the interstitial space and body cavities.

2. Cellular expansion.

3. Adaptive water-salt replacement of damaged tissues.

4. Intravascular hypervolemia.

5. Hemo- or lymphodilution.

14. Which is the major pathogenetic factor in the genesis of generalized cardiac edemas:

1. Disturbed Starling equilibrium.

2. Renal sodium and water retention.

3. Insufficient lymph drainage.

4. Increased affinity of the tissues to water and sodium.

5. Subatmospheric pressure of the free interstitial liquid.

15. Conditions for edema are present when:

1. Domination of the filtration force over the absorption force.

2. Filtration force equal to the absorption force.

3. Domination of the absorption force.

4. Exceeded lymph drainage.

5. 1, 4.

6. 1, 2, 3.

16. The decrease in osmotic pressure due to increased membrane permeability always includes:

1. Elevated colloid osmotic pressure in the plasma.

2. Decreased colloid osmotic pressure in the interstitial space.

3. Increased vascular permeability.

4. Increased permeability of the cellular membrane.

5. Decreased colloid osmotic pressure in the lymph.

17. The colloid osmotic pressure in the interstitial space could be elevated when there is:

1. Decreased lymph drainage.

2. Functional tissue hypoperfusion.

3. Increased permeability of the vascular wall.

4. Tissue remodelling.

5. 1, 3.

6. 1, 2, 4.

18. It is easy to exceed the capacity of the lymph drainage when there is:

1. Inhibition of the “suction pump”.

2. Hypofunction of the central lymph drainage.

3. Variations in the blood pressure.

4. Hyperfunction of the lymph valves.

5. 1, 2.

6. 1, 3, 4.

19. Which of the following factors leads to water-salt retention and edema formation:

1. Increased dietary sodium intake.

2. Increased secretion of natriuretic factors.

3. Reduced renal perfusion.

4. Hyperactivity of the renin-angiotensin-aldosterone system.

5. Increased secretion of antidiuretic hormone.

20. Neurotrophic edemas (hemiplegia, paralysis of n. facialis) are due mainly to:

1. Increased intravascular hydrostatic pressure.

2. Decreased colloid osmotic pressure in the vessels.

3. Disturbed lymphatic drainage.

4. Increased permeability of the vascular wall.

5. Local production of sodium retentive cytokines.

21. Point out the key pathogenetic reason(s) for ascites when accompanying liver cirrhosis:

1. Hypoalbuminemia.

2. Portal hypertension.

3. Disturbed lymphatic drainage.

4. 1, 2.

5. 1, 2, 3.

22. The major reason for the edema in right heart failure is:

1. Increased hydrostatic pressure in the venous part of the capillaries.

2. Increased hydrostatic pressure in the arterial part of the capillaries.

3. Decreased colloid osmotic pressure in the plasma.

4. Decreased osmotic pressure due to increased permeability.

5. Increased vascular permeability.

23. The key pathogenetic factor in cachectic edema is:

1. Increased lymphatic drainage.

2. Decreased colloid osmotic pressure.

3. Sodium retention.

4. Capillary hyperpermeability.

5. Fibrin blockage.

24. Key pathogenetic factor(s) in nephritic edema is/are:

1. Decreased oncotic pressure.

2. Glomerular water-salt retention.

3. Capillary hyperpermeability.

4. Obligatory hyperaldosteronism.

5. 2, 3.

6. 1, 3, 4.

25. Increased risk of diastolic asystolia:

1. Low potassium levels.

2. High sodium levels.

3. Low calcium levels.

4. High potassium levels.

5. High calcium levels.

6. High phosphate levels.

26. In intensive tissue degradation there is a risk of:

1. Elevation of calcium and sodium levels.

2. Elevation of potassium and phosphate levels.

3. Decrease in magnesium and increase of sulfate levels.

4. Decrease in sodium and increase in bicarbonate levels.

5. Decrease in the levels of potassium and sulfate.

27. Which is the key pathogenetic factor in the disturbances of the cardiac function related to abnormally low or abnormally high levels of potassium ?

1. Disturbed depolarization.

2. Altered genomic cardiofunction.

3. Disturbed repolarization.

4. Blockage of the Na/K pump.

5. Mitochondrial lysis.