General Pathophysiology

THERMOREGULATION AND FEVER

1. Heat production is increased in:
   1. Decreased ambient temperature.
   2. Uncoupling of oxidative phosphorylation.
   3. Exercise
   4. Increased ambient temperature.
   5. 1, 2. 3.
   6. 1, 2, 3, 4.

2. Physical heat dissipation is increased in:
   1. Increased ambient temperature.
   2. Acute intoxication.
   3. Reduced ambient temperature.
   4. Starvation.
   5. 1, 3.

3. Environmental factors for ineffective heat dissipation are:
   1. Low temperature and low humidity.
   2. High temperature and low humidity.
   3. High temperature and high humidity.
   4. Low temperatures and high humidity.
   5. Normal temperature and low humidity.

4. The peak stage (*stadium fastigii*) of fever is characterized by:
   1. Deficiency of heat production.
   2. New set point of the heat production/heat dissipation balance.
   3. Limited heat dissipation.
   4. Enhanced heat production.
   5. Change in the heat production/heat dissipation ratio.

5. Which areas of the thermoregulatory center are responsible for fever onset:
   1 .Sympathetic neurons.
   2. Tonic motoneurons.
   3. Thermo effector neuronal pathways.
   4.Set-point neurons.
   5. Thermostatic neurons.

6. Fever is a pathologic process that develops due to the action of:
   1. Carcinogens.
   2. Mutagens.
   3. Pyrogens.
   4. Stimulants.
   5. Thymosins.

7. Fever is a process in which:
   1. Thermoregulation is unchanged.
   2. Thermoregulation takes place at a higher level.
   3. Heat dissipation increases.
   4. There is a close correlation between external and internal temperature.
   5. Thermoregulation is disturbed.

8. Adjustment of the set point of temperature homeostasis in fever depends on:
   1. The nature of pyrogens and their amount.
   2. The functional state of the thermoregulatory center.
   3. The reactivity of the organism.
   4. Age.
   5. All of the above.

9. What is the common feature between fever and hyperthermic conditions?
   1. Increase of the body temperature.
   2. Unchanged thermoregulation.
   3. Constantly increased heat production.
   4. Direct link between external/internal temperature.
   5. Different developmental stages.

10. Exogenous bacterial pyrogens are mainly:
    1. Proteins.
    2. Lipoproteins.
    3. Steroids.
    4. Endorphins.
    5. Lipopolysaccharides.

11. Which microorganisms have strong pyrogenic features?
    1. Gram negative organisms.
    2. Gram positive bacteria.
    3. Rickettsiae.
    4. Viruses.
    5. Spirochetes.

12. Endogenous pyrogens are:
    1. Substances of cell or tissue origin.
    2. Substances produced by "activated" leukocytes.
    3. Substances stored in leukocytes.
    4. 1, 2.
    5. 1, 3.
    6. 1, 2, 3.

13. Which mediators have pyrogenic influence at the level of the set-point neurons?
    1. Norepinephrine, serotonin.
    2. Acetylcholine, prostaglandins E1 and E2.
    3. Cortisol.
    4. Thyroxine
    5. ACTH.

14. What plays a key role in fever development when caused by viral infections?
    1. α-interferon.
    2. TNF.
    3. IL-4, IL-1.
    4. β-endorphins.
    5. Cachectins.

15. Increasing body temperature (*stadium incrementi*) in fever, is mainly a result of:
    1. Increased heat production.
    2. Increased heat production and decreased heat dissipation.
    3. Reduced heat dissipation.
    4. Initiated mechanism of tissue conductivity.
    5. 1, 2, 3.
    6. 1, 2, 3, 4.

16. Which factor determines the pattern of temperature decrease?
    1.Speed and nature of the pyrogen's action suspension.
    2. Functional state of the thermoregulatory center.
    3. Ambient temperature.
    4. Fluids intake.
    5. 1, 2.
    6. 1, 2, 3, 4.

17. Critical drop in temperature in *stadium decrementi* of fever may lead to acute circulatory failure due to:
    1. Sympathetic stimulation.
    2. Cardiac arrest.
    3. Vasodilation, hypotension and reduced MCO (minute cardiac output).
    4. Depressed vasomotor center.
    5. Any of the foregoing.

18. Negative nitrogen balance in fever is due to:
    1. Enhanced protein degradation.
    2. Decreased absorption and synthesis.
    3. Increased removal from the body.
    4. Increased use of proteins for heat production.
    5. 1, 2, 3.
    6. 1, 2, 3, 4.

19. What contributes to the intoxication during fever:
    1. Reduction of gastric secretion.
    2. Delayed gastrointestinal motility.
    3. Absorption of toxic products.
    4. 2, 3.
    5. 1, 2, 3.

20. Fever has a favourable impact on:
    1. B-lymphocyte activity.
    2. T-cell proliferation.
    3. Phagocytic activity.
    4. Activation of pituitary-adrenal system.
    5. 3, 4.
    6. 1, 2, 3, 4.