Fluid and Electrolytes in the Neonatal Environment

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Please read each question carefully. Circle your answer as appropriate.

1. Post-natal physiological diuresis usually occurs
    a. Within 24 hour of age
    b. Day of life 2
    c. Day of life 3-4
    d. Day of life 5

2. Normal loss of body fluid can occur through:
    a. Normal respirations
    b. Kidney function as waste are excreted
    c. Through the skin
    d. All the above

3. Mechanism to minimise fluid loss in preterm infants include all of the following except:
    a. Double walled incubators
    b. Warm blankets
    c. Humidity
    d. Humidified ventilation

4. In addition to its responsibility for fluid balance, sodium is responsible for:
    a. A good eyesight and vitamin balance
    b. Bone structure
    c. Impulse transmission
    d. Muscle mass

5. Increased serum sodium levels cause thirst and the release of:
    a. Potassium into the cells
    b. ADH into the bloodstream
    c. Aldosterone into the kidneys

6. The sodium-potassium pump transports sodium ions:
    a. Into cells
    b. Out of cells
    c. Into and out of cells in equal amounts
    d. Into skeletal muscles

7. Sodium regulation is independent of total body fluid status
    a. True
    b. False

8. Potassium is responsible for:
    a. Building muscle mass
    b. Building bone structure and strength
    c. Maintaining a heartbeat

d. Maintaining weight

9. Treatment for hyperkalaemia includes:
    a. Glucose and insulin
    b. Stopping all K+ intake
    c. Calcium and Na bicarbonate
    d. All the above

10. Utilisation of blood glucose is greater in:
    a. Prolonged labour
    b. Difficult labour
    c. Term infant at birth
    d. Preterm infant at birth

11. Glucose can pass through the cell membrane by:
    a. osmosis
    b. diffusion
    c. facilitated diffusion

12. To increase the rate of glucose passing the cell membrane what do we do:
    a. increase dextrose infusion
    b. give a bolus of dextrose 10%
    c. administer Glucagon
    d. give insulin

13. What it the glucose requirement of the neonate;
    a. 2-4mg/kg/min
    b. 4-8mg/kg/min
    c. 4-6mg/kg/min

14. Why are premature infants less tolerant to the glucose rates above:
    a. Because of their electrolytes imbalance
    b. Because they use a large amount of glucose
    c. The ability of the tubule to reabsorb glucose
    d. Due to osmotic diuresis

15. Is glucose truly a function of;
    a. The liver
    b. The hypothalamus
    c. Adenosine tryphosphate
    d. metabolic rate

16. Symptoms which can accompany a low blood sugar are:
    a. Apnoeic episodes
    b. temperature instability
    c. RDS
    d. irritability
    e. all of the above

17. Insulin decreases the transport of glucose across the cell membrane:
    a. True
    b. False

18. Diuretics affect the kidneys by altering the reabsorption and excretion of:
    a. water only
    b. electrolytes only
    c. water and electrolytes
    d. other drugs

19. The main extracellular cation or ion is:
    a. Calcium
    b. Potassium
    c. Bicarbonate
    d. Sodium

20. Magnesium is an important electrolyte because it:
    a. helps control urine volume
    b. promotes the production of growth hormone
    c. promotes bone growth and strength
    d. facilitates neuromuscular transmission

21. Is calcium important for: (please circle appropriate answer/s)
    a. urine output
    b. normal cell function
    c. glucose utilization
    d. neural transmission
    e. circulating blood volume
    f. bone and tooth formation

22. How do the neonates achieve extracellular fluid regulation? (Please circle
    a. appropriate answer/s)
    a. change in heart rate and contractility
    b. Giving Dextrose 10% infusion
    c. Renal vascular excretion
    d. stopping Enteral feeds

23. If your baby has a low Na on day one of life is this usually due to:
    a. a sodium deficit from birth
    b. low circulating volume
    c. connected to the extracellular fluid
    d. osmotic diuresis

24. If your IV solution is Isotonic what does this mean?
    a. the osmotic pressure is unequal inside and out
    b. the osmotic pressure draws water into the cell
    c. the osmotic pressure is equal in and out of the cell