

1. All of the following are true regarding carbonic anhydrase inhibitors EXCEPT:

- A. They increase bicarbonate reabsorption in the PCT
- B. They decrease aqueous humor production
- C. They may reduce CSF formation
- D. They can cause metabolic acidosis
- E. They reduce intraocular pressure

✔ Answer: A

2. Which of the following is NOT a typical adverse effect of acetazolamide?

- A. Hyperchloremic metabolic acidosis
- B. Renal potassium wasting
- C. Hypercalcemia
- D. Calcium phosphate stones
- E. Hypersensitivity reactions

✔ Answer: C

3. All of the following are true about loop diuretics EXCEPT:

- A. They inhibit NKCC2 transporter
- B. They enhance prostaglandin synthesis
- C. They increase reabsorption of  $\text{Ca}^{2+}$  in TAL
- D. They cause hypokalemic metabolic alkalosis
- E. They are highly protein-bound

✔ Answer: C

4. Regarding loop diuretics, which statement is INCORRECT?

- A. Ethacrynic acid is a sulfonamide derivative

- B. They act on the thick ascending limb
- C. They can cause ototoxicity
- D. They reduce left ventricular preload
- E. They can enhance  $Mg^{2+}$  excretion

✓ Answer: A

5. Thiazide diuretics increase calcium reabsorption by:

- A. Inhibiting  $Na^+/K^+$  ATPase
- B. Activating apical calcium channels
- C. Increasing  $Na^+/Ca^{2+}$  exchange on the basolateral side
- D. Blocking the NKCC2 cotransporter
- E. Stimulating PTH release

✓ Answer: C

6. All are adverse effects of thiazide diuretics EXCEPT:

- A. Hyperlipidemia
- B. Hypokalemia
- C. Hyponatremia
- D. Hypercalcemia
- E. Hypermagnesemia

✓ Answer: E

7. Thiazide diuretics are ineffective in:

- A. Nephrogenic diabetes insipidus
- B. Hypercalciuria
- C. Acute renal failure
- D. Hypertension
- E. Edema of CHF

✓ Answer: C

8. Which statement is FALSE regarding potassium-sparing diuretics?

- A. Amiloride blocks ENaC channels directly
- B. Spironolactone is a competitive aldosterone antagonist
- C. Eplerenone causes gynecomastia
- D. They reduce H<sup>+</sup> secretion in the distal nephron
- E. Hyperkalemia is a possible side effect

✓ Answer: C

9. Which combination may lead to life-threatening hyperkalemia?

- A. Thiazide +  $\beta$ -blocker
- B. Loop diuretic + NSAID
- C. Spironolactone + ACE inhibitor
- D. Furosemide + mannitol
- E. Amiloride + thiazide

✓ Answer: C

10. All of the following are pharmacological actions of osmotic diuretics EXCEPT:

- A. Increase water excretion
- B. Increase Na<sup>+</sup> reabsorption
- C. Oppose ADH in the collecting duct
- D. Increase renal blood flow
- E. Reduce medullary hypertonicity

✓ Answer: B

11. Mannitol is contraindicated in:

- A. Intracranial hypertension

- B. Acute glaucoma
- C. Pulmonary edema
- D. Rhabdomyolysis
- E. Oliguric renal failure with intact volume status

✓ Answer: C

12. Which is NOT an expected effect of mannitol?

- A. Headache
- B. Hypernatremia
- C. Hypokalemia
- D. Volume expansion
- E. Osmotic diarrhea (if given orally)

✓ Answer: C

13. All of the following are features of thiazide diuretics EXCEPT:

- A. Improve nephrolithiasis
- B. Increase urinary calcium
- C. Can be used orally
- D. Enhance proximal tubular calcium reabsorption
- E. Reduce blood pressure

✓ Answer: B

14. Carbonic anhydrase inhibitors are LEAST effective in:

- A. Glaucoma
- B. Metabolic alkalosis
- C. Treating edema
- D. Acute mountain sickness
- E. Epilepsy adjunct therapy

✓ Answer: C

15. Which is NOT a feature of loop diuretics?

- A. Used in hypercalcemia
- B. Reversibly ototoxic
- C. Increase distal tubular Na<sup>+</sup> delivery
- D. Decrease K<sup>+</sup> secretion
- E. Cause metabolic alkalosis

✓ Answer: D

16. Which of the following is true of eplerenone but NOT spironolactone?

- A. Causes gynecomastia
- B. Is a potassium-sparing diuretic
- C. Inhibits aldosterone receptors
- D. Has fewer endocrine side effects
- E. Requires dose reduction in hepatic failure

✓ Answer: D

17. Triamterene is associated with all EXCEPT:

- A. Interstitial nephritis
- B. Leg cramps
- C. Azotemia
- D. Hyperkalemia
- E. Hypercalcemia

✓ Answer: E

18. Which of the following diuretics can precipitate gout attacks?

- A. Mannitol

- B. Acetazolamide
- C. Furosemide
- D. Spironolactone
- E. Amiloride

✓ Answer: C

19. Which diuretic would most likely cause photosensitivity?

- A. Furosemide
- B. Indapamide
- C. Spironolactone
- D. Ethacrynic acid
- E. Amiloride

✓ Answer: B

20. Which of the following statements about demeclocycline is TRUE?

- A. It inhibits ADH action in the collecting duct
- B. It is a selective V2 receptor antagonist
- C. It is preferred over conivaptan for SIADH
- D. It enhances water reabsorption in the kidney
- E. It is commonly used intravenously

✓ Answer: A

21. Conivaptan is used for:

- A. Congestive heart failure
- B. Diabetes insipidus
- C. SIADH
- D. Hypertension
- E. Hypokalemia

✓ Answer: C

22. Which is NOT a mechanism of diuretic-induced metabolic alkalosis?

- A. Volume contraction
- B. Increased aldosterone secretion
- C. Enhanced  $\text{Na}^+$  delivery to distal nephron
- D.  $\text{H}^+$  retention in distal nephron
- E. Enhanced  $\text{H}^+$  secretion

✓ Answer: D

23. All of the following cause hyperuricemia EXCEPT:

- A. Loop diuretics
- B. Thiazides
- C. Spironolactone
- D. Hypovolemia
- E. Competition for organic acid transporter

✓ Answer: C

24. Which diuretic class acts at the thick ascending limb?

- A. Carbonic anhydrase inhibitors
- B. Thiazides
- C. Loop diuretics
- D. Potassium-sparing diuretics
- E. ADH antagonists

✓ Answer: C

25. Hypokalemia is NOT caused by:

- A. Acetazolamide

- B. Furosemide
- C. Hydrochlorothiazide
- D. Spironolactone
- E. Metolazone

✓ Answer: D

26. Which is LEAST likely to cause metabolic acidosis?

- A. Spironolactone
- B. Amiloride
- C. Acetazolamide
- D. Mannitol
- E. Indapamide

✓ Answer: E

27. Which diuretic is administered parenterally?

- A. Metolazone
- B. Hydrochlorothiazide
- C. Chlorthiazide
- D. Spironolactone
- E. Triamterene

✓ Answer: C

28. Carbonic anhydrase inhibitors can exacerbate hepatic encephalopathy due to:

- A. Ammonia accumulation
- B. Hyperkalemia
- C. Hypovolemia
- D. Hypoglycemia
- E. Hypernatremia



✓ Answer: A

29. Which diuretic is both secreted and filtered by the kidney and not metabolized?

- A. Spironolactone
- B. Amiloride
- C. Mannitol
- D. Furosemide
- E. Triamterene

✓ Answer: C

30. Which of the following pairs is mismatched?

- A. Indapamide – biliary excretion
- B. Chlorthalidone – long half-life
- C. Triamterene – leg cramps
- D. Eplerenone – gynecomastia
- E. Ethacrynic acid – phenoxyacetic acid derivative

✓ Answer: D