

**WESTERN UNIVERSITY OF HEALTH SCIENCES
COLLEGE OF OSTEOPATHIC MEDICINE OF THE PACIFIC
RENAL FINAL EXAM
JANUARY 26, 1998**

#1

Choose the ONE BEST answer and darken the appropriate box on the Scantron form. There are 38 questions on this exam.

Dr. Foley

1. Renal compensation for a respiratory acidosis would include

$\frac{HCO_3^-}{CO_2}$

- a. incomplete reabsorption of filtered HCO_3^- ions.
- b. a decrease in the amount of $H_2PO_4^-$ ions excreted in the urine.
- c. little or no addition of new HCO_3^- ions to plasma.
- d. little or no excretion of NH_4^+ ions in the urine.
- e. an increase in the rate of secretion of H^+ ions by renal tubular epithelial cells.

2. In the major renal tubular mechanism for the reabsorption of HCO_3^- ions filtered by the glomerulus,

- a. the collecting duct system normally reabsorbs 80-90% of the filtered HCO_3^- ions.
- b. the H^+ ions secreted by the renal tubular cells are excreted in the urine.
- c. HCO_3^- ions are transported across the basolateral membranes of the tubular cells by facilitated diffusion.
- d. the process results in a net gain of HCO_3^- ions by the extracellular fluid.
- e. HCO_3^- ions are transported across the luminal membranes of the tubular cells by cotransport with Na^+ ions.

3. As a result of a persistent metabolic alkalosis ^{> COMPENSATION OCCURS !!}

- a. the rate of secretion of K^+ ions by renal cortical collecting ducts is enhanced.
- b. there is a decrease in the rate of excretion of K^+ ions in the urine.
- c. there is an increase in the rate of H^+ ion secretion by renal tubular cells.
- d. plasma K^+ concentration increases above normal.
- e. there is a decrease in the rate of uptake of K^+ ions by renal tubular cells.

4. All of the following statements about NH_4^+ ions in renal-acid base mechanisms are correct EXCEPT

- a. The ascending limbs of the loops of Henle of juxtamedullary nephrons reabsorb some NH_4^+ ions from the tubular fluid.
- b. Proximal tubular cells secrete NH_4^+ ions by a $Na^+ - NH_4^+$ countertransport system in the luminal membranes of the cells.
- c. In the collecting ducts, NH_4^+ ions are formed from secreted NH_3 molecules and secreted H^+ ions.
- d. NH_4^+ ions are normally excreted in much smaller amounts than is titratable acid.
- e. The renal medullary interstitial fluid concentrations of NH_4^+ and NH_3 increase progressively from outer to inner medulla.

Dr. Cundari

5. Which of the following relationships is INCORRECT?

- ✓ a. Chief complaint (CC): "my urine is red"
- ✓ b. Social history (SH): Married marketing director
- ✓ c. Review of systems (ROS)-GEN: exercises occasionally by going to the gym
- Ⓓ Physical exam (PE)-GU: see H.P.I., no other information
- e. Physical exam (PE)-GU: not tender with 3+ enlargement

6. Which of the following statements is FALSE?

- ✓ a. Hematuria is blood in the urine.
 - Ⓓ Less than 5 RBCs/high power field is abnormal.
 - ✓ c. Gross hematuria is visible to the naked eye.
 - ✓ d. Hematuria may be painless.
 - ✓ e. Hematuria may be intermittent.
7. The 57-year-old male with hematuria presented in differential diagnosis class with a blood pressure of 142/78 would be classified into what stage of hypertension?

- a. Stage I diastolic hypertension
- b. Stage II diastolic hypertension
- Ⓒ Stage I systolic hypertension
- d. Stage II systolic hypertension
- e. Stage III diastolic hypertension

8. Which of the following relationships is INCORRECT?

- ✓ a. Chief complaint (CC): proteinuria
- ✓ b. Review of Systems (ROS)-Skin: denies pruritis
- ✓ c. Review of Systems (ROS)-GI: appetite good
- ✓ d. Physical exam (PE)-GU: penis circumcised
- Ⓓ Physical exam (PE)-GU: denies sexual activity

9. Post-renal causes of acute renal failure include all of the following EXCEPT

- Ⓓ hypovolemia.
- b. prostatic hypertrophy.
- c. nephrolithiasis.
- d. tumors.
- e. retroperitoneal fibrosis.

10. The working diagnosis for the 19-year-old male student presented in differential diagnosis class included all of the following EXCEPT

- a. functional (after heavy exercise).
- b. benign proteinuria: fever, heat or cold exposure.
- Ⓒ sickle cell disease.
- d. orthostatic (postural) proteinuria.
- e. toxic nephropathies: heavy metals, drugs.

Dr. Packer

11. A history is the first step in assessing any patient problem. Which of the following may be useful in the approach to oliguria?

- a. Political party
- b. Medication list
- c. Stroke volume Index
- d. Serum catecholamine level

12. Lab tests that might prove useful in evaluating a patient with oliguria include all of the following EXCEPT

- a. BUN
- b. folic acid level
- c. urinalysis
- d. serum albumen

13. A "fluid challenge" often remains in the intravascular compartment only a short while. A reasonable choice of IV solutions for a "fluid challenge" might be:

- a. normal saline
- b. isolyte M
- c. modified Collin's solution
- d. 5% dextrose in water

14. Acute renal failure is a potentially devastating illness. Which of the following is the leading cause of death in patients with acute renal failure?

- a. GI bleeding
- b. Uremia
- c. Fluid overload/congestive heart failure
- d. Sepsis

15. Which of the following compounds might be useful in treating acute renal failure?

- a. Glyzorhizzic acid
- b. Hydrochlorothiazide
- c. Mannitol
- d. Amiodarone

16. Potassium is an important ion. Hyperkalemia can cause life threatening arrhythmia. The first treatment in the setting of life threatening hyperkalemia is:

- a. dialysis
- b. intravenous calcium
- c. kayexalate
- d. glucose and insulin IV

17. All of the following may cause hypokalemia EXCEPT

- ✓ a. alkalosis
- ✓ b. "refeeding"
- Ⓒ spironolactone
- ✓ d. hyperaldosteronism

18. A patient has decreased turgor, dry mucosa, is tachycardic and febrile. The serum sodium level is 124 mMole/liter (normal 135 to 145). Which of the following is a possible diagnosis?

- a. Cirrhosis
- Ⓒ Infectious gastroenteritis
- c. Syndrome of inappropriate secretion of ADH
- d. Psychogenic polydipsia (excessive thirst)

19. A patient with congestive heart failure has a serum sodium of 124 mMole/liter (normal 135 to 145). The best therapy is:

- a. hypertonic saline infusion
- b. normal saline infusion until the sodium level is normalized
- Ⓒ fluid restriction with diuretic therapy
- d. oral fluid restriction to 800cc/day

20. The type of glomerulonephritis most frequently associated with leukemia is:

- Ⓒ minimal change *Koss?*
- b. membranoproliferative
- c. membranous
- d. nodular glomerulosclerosis

21. All of the following are part of the nephrotic syndrome EXCEPT

- a. edema
- b. hyperlipidemia
- Ⓒ hypothyroidism
- d. proteinuria

22. Edema associated with nephrotic syndrome may be due to:

- ✓ a. excessive sodium retention
- b. hyperaldosteronism
- ✓ c. altered oncotic forces
- Ⓒ d. all of the above

23. A patient with Nephrotic Syndrome presents with the sudden onset of shortness of breath. Which of the following must you consider?

- ✓ a. Pulmonary embolism *↑dot.*
- b. Pneumonia *edema*
- c. CHF
- Ⓒ d. All of the above

24. Often the first treatment for dangerous hypercalcemia is:

- a. Mithromycin
- b. saline
- c. calcitonin
- d. biphosphonates

25. All of these treatments may be of benefit in treating hypercalcemia EXCEPT

- a. hydrochlorothiazide
- b. NSAID's
- c. Tagamet
- d. prednisone

26. All of the following may cause hypercalcemia EXCEPT

- a. prolonged bed rest
- b. tuberculosis
- c. hypoparathyroidism
- d. Metastatic disease

27. A pH on a blood gas is 7.24. This most closely corresponds to a hydrogen ion concentration of:

- a. 56
- b. 64
- c. 24
- d. 7.2

$$\begin{aligned} 7.4 &= 40 \\ 7.45 &= 45 \\ 7.3 &= 50 \\ 7.2 &= 60 \end{aligned}$$

28. A patient presents to the ER in an agitated state. He is tachypneic and confused. His ABG reveals a pH of 7.16. His electrolytes are Na=140, K=5.9, Cl=90, and tCO₂=8. Which of the following is most likely?

- a. Diarrhea
- b. Methanol ingestion
- c. Respiratory acidosis
- d. Renal tubular acidosis

$$140 - 90 - 8 = 42$$

29. Some data suggests that dietary change can slow the progression of progressive renal disease. These changes might include:

- a. high fat
- b. low calorie
- c. protein restriction
- d. low fiber

30. Patients with a renal transplant need to be concerned about:

- a. infection
- b. rejection
- c. obstruction
- d. all of the above

Dr. Weiss

✓ 31. A 14-year-old boy comes to your office complaining of acute onset of severe right testicular pain. He is found to have severe pain on movement of the testicle, an absent cremasteric reflex, and some nausea. Your next step should be

- a. warm soaks and antibiotics.
- b. a period of eight hours for observation.
- ✓ c. referral for a nuclear testicular scan and probable urology referral.
- d. reassurance that this is probably not a worrisome problem.
- e. transilluminate immediately!!!

32. A newborn is seen in your office for routine well care at two weeks of age and you are told that the child was found to have a mild hydronephrosis on prenatal ultrasound. Today's exam is normal and the infant is growing well with normal stool and urine output. Your next step should be

- ✓ a. obtain a stat IVP (intravenous pyelogram).
- b. obtain a renal ultrasound to determine if the hydronephrosis has resolved.
- c. send the infant for a urology consult.
- d. obtain a CBC and UA.
- e. do nothing.

✓ 33. A four-year-old little girl comes into your office complaining of pain and frequency of urination for the last two days. You obtain a urinalysis, which shows moderate white blood cells and a few red blood cells. Being the competent physician that you are, you next would

- a. prescribe a sulfa-based antibiotic for the obvious urinary tract infection and discard the urine.
- b. call the Department of Children's Services immediately.
- ✓ c. send the urine for culture and sensitivities to determine if there is a true infection.
- d. give the child a shot of Rocephin IM.
- e. there was no need for the urine specimen; with the symptoms the child could have been treated without obtaining a urine specimen.

✓ 34. An eight-year-old male presents to your office two weeks after an illness where he had fever and cold symptoms. He was doing fine until two days ago when he developed a purple rash on his shins, thighs, and buttocks. The most likely diagnosis is

- a. meningococemia.
- b. post-streptococcal glomerulonephritis.
- c. leukemia.
- ✓ d. Henoch-Schönlein purpura.
- e. otitis media.

Dr. Saul

35. Hypospadias can NOT be found

- ✓ a. at the penoscrotal junction.
- ✓ b. in the scrotum.
- ✓ c. in the perineum. — penis is in the perineum!
- Ⓒ in the mons pubis.

36. Which of the following is NEVER found in a bladder diverticulum?

- D
- Ⓐ muscle
 - b. mucosa
 - c. serosa
 - d. tumor

37. The most likely site of bleeding in a patient who complains of terminal hematuria is?

- a. kidney.
- b. bladder.
- Ⓒ prostate.
- d. urethral meatus.

38. All of the following are symptoms of BPH with obstruction EXCEPT

- ✓ a. urinary hesitancy.
- ✓ b. acute and/or chronic urine retention.
- ✓ c. loss of force or caliber of urinary stream.
- Ⓓ fever.