

ANSWERS: Practice Quiz 7 Part A

ANTI-DIABETIC MEDS

DEH 2300

June, 2014

1. Which statement is correct regarding the action of insulin?
- a. Decreases transport of glucose across the cell membrane
 - b. Increases conversion of glucose into glycogen ANSWER**
 - c. Decreases synthesis of protein and inhibits protein breakdown
 - d. Decreases lipolysis of fats into fatty acids

NOTE: It has come to my attention that you will need to know the exact action of insulin. A question similar to the one above is in the licensure review book. "Insulin lowers blood glucose" is not enough. Please review this content in the PowerPoint.

There is also a very detailed "mechanism of action" for each type insulin in the Drug Information Handbook for Dentistry by Wynn. Page 749 has a very comprehensive description of the action of regular insulin.

2. Which of the following are signs/symptoms of hypoglycemia?
- a. Diaphoresis; tremors ANSWER**
 - b. Tachycardia; acetone breath
 - c. Abdominal pain; headache
 - d. Dry, flushed skin; bradycardia
3. Which of the following would be the best treatment for an alert patient with hypoglycemia?
- a. Humalog (lispro) insulin
 - b. Pepsi
 - c. Glucose tablets (or gels) ANSWER**
 - d. 2 chocolate candy bars
4. What is the peak action time of regular insulin (Humulin R), short acting-insulin?
- a. 2-4 hours ANSWER**
 - b. 8-12 hours
 - c. 16-18 hours
 - d. 18-24 hours
5. What does HgbA_{1c} (glycosylated hemoglobin) measure?
- a. Blood glucose level over the past month
 - b. Current blood glucose level
 - c. Average blood sugar level for the past 3 months ANSWER**
 - d. Blood sugar levels for the past 2 weeks
6. Which signs/symptoms are typical of hyperglycemia?
- a. Tachycardia; diaphoresis
 - b. Tremors; irritability
 - c. Anxiety; tremors
 - d. Extreme thirst; frequent urination ANSWER**
7. Which activity/medication/condition would most likely not cause hyperglycemia in a diabetic patient?
- a. Exercise ANSWER**
 - b. Steroids
 - c. Flu
 - d. Pancreatitis

8. Which drug is contraindicated for a patient who is allergic to sulfonamides?

- a. Lantus® (glargine) insulin
- b. Humulin® R insulin
- c. Actos® (pioglitazone)
- d. **Glucotrol® (glipizide) ANSWER**

9. The stress of tooth extraction is likely to cause a(n) _____ in blood glucose in a diabetic patient.

- a. **increase ANSWER**
- b. decrease

10. Which insulin is the longest acting and has no peak?

ANSWER: Lantus® (glargine)

11. Which insulin is rapid acting?

ANSWER: Humalog (lispro)

12. What is diabetic retinopathy? What is the end result if untreated?

See the website below.

<http://medical-dictionary.thefreedictionary.com/diabetic+retinopathy>

The end result will likely be blindness if untreated.

13. What is diabetic nephropathy? What is the end result if untreated?

ANSWER: Diabetic nephropathy is a clinical syndrome characterized by albuminuria, hypertension and renal insufficiency. It can progress to end-stage renal failure, dialysis and even death.

See the website below.

<https://www.clinicalkey.com/topics/nephrology/diabetic-nephropathy.html>

14. What is neuropathy? What is the end result if untreated?

ANSWER: Nerve damage caused by high blood glucose. Usually affects feet and legs. If untreated the end result may be amputation.

See website below.

<http://www.mayoclinic.com/health/diabetic-neuropathy/DS01045>

15. What are the major differences between Type 1 and Type 2 diabetes mellitus?

ANSWER: See PowerPoint and American Diabetes Association website.

16. What is the primary action of Januvia® (sitagliptin)? (Hint: See page 427 in your Woodrow text. The mechanism of action is also well-written in the Drug Handbook by Wynn.)

ANSWER: The mechanism of action is well-written in the Drug Handbook by Wynn, page 1242.)

17. Which of the following medications has the highest risk for the adverse reaction of hypoglycemia?

- a. Glucophage® (metformin)
- b. **Glucotrol® (glipizide) ANSWER**
- c. Actos® (pioglitazone)
- d. Januvia® (sitagliptin)

18. What is gastroparesis? (The website below will be helpful.)

19. Are there dental implications for the following drugs? If so, what are they?
- Glucophage[®] (metformin)
 - Glucotrol[®] (glipizide)
 - Actos[®] (pioglitazone)
 - Januvia[®] (sitagliptin)
 - Rapid-acting insulin
 - Short-acting insulin
 - Intermediate-acting insulin
 - Long-acting insulin

ANSWER: According to the Drug Handbook by Wynn diabetic patients taking the medications above should have dental appointments scheduled in the a.m. to minimize the risk of stress-induced hypoglycemia.

When caring for diabetic patients it is also important to consider the complications of the disease (ex: decreased saliva, gingivitis, periodontitis, poor or delayed wound healing, thrush, tooth decay, etc.)

See website below.

<http://diabetes.webmd.com/dental-health-dental-care-diabetes>

20. What are the goals for fasting, pre-meal, postprandial and bedtime blood glucose levels according to the American Diabetes Association?

ANSWER: See the American Diabetes Association website.

21. Why is the FDA conducting an ongoing study regarding the safety of Avandia[®] (rosiglitazone)?

ANSWER:

<http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm201418.htm>

22. What is the indication for Juvisync[®] (sitagliptin and simvastatin)?

ANSWER: type 2 diabetes mellitus and high cholesterol

23. Farxiga (dapagliflozin), Tanzeum (algiblutide), Invokana (canagliflozin) and Nesina (alogliptin) are recently approved anti-diabetic agents. These would make good bonus questions.

See the following website:

<http://www.centerwatch.com/>