

Topic of the lesson: **DISTURBANCES OF ENDOCRINAL FUNCTION OF PANCREAS.**

Aim: To know how make pathophysiological analysis of situation, connected with disorders of endocrinal function of pancreas.

Main questions over the topic of the lesson:

1. Typical forms of disturbances of pancreas endocrinal function – hypoinsulinism and hyperinsulinism.
2. Diabetes mellitus: metabolic, structure and functional disorders in organism at DM.
3. Complications of diabetes mellitus.
4. Pathogenetic principles of diabetes mellitus therapy.

Literature:

1. General and clinical pathophysiology/ Gozhenko A.I. etal. – Odessa National Medical University. – 2001. – P. 194-211

CONTROL QUESTIONS:

№ №	Instructions to the execution of the task	Answers of the students with complements at the lessons
1.	Which hormones take part in regulation of carbohydrates metabolism? – a, b	
2.	What organs and tissues does insulin act on? – a, b, c	
3.	Name main biological effects of insulin. – a, b, c	

4.	How does amount of glucose in blood change at disturbance of balance between insulin and contrinsular hormones? – a, b	
5.	Give the definition of notion “diabetes mellitus”.	
6.	Give pathogenetic classification of diabetes mellitus. – a, b	
7.	What are reasons of development of diabetes mellitus of the I type? – a, b	
8.	What are reasons of development of diabetes mellitus of the II type? – a, b	
9.	Which types of metabolism are disturbed at diabetes mellitus? – a, b, c, d, e, f	
10.	Which clinical signs of diabetes mellitus are	

	given by disturbance of carbohydrates metabolism? – a, b, c, d	
11.	Which disturbances are indicative about disorders of lipid metabolism at diabetes mellitus? – a, b, c, d, e, f	
12.	By what do disturbances of protein metabolism declare at diabetes mellitus? – a, b	
13.	Which disturbances of water-salt metabolism are typical for diabetes mellitus? – a, b, c	
14.	Which disturbances of acid-base balance are developed at diabetes mellitus? – a	
15.	Which variants of comatose conditions may be developed at diabetes mellitus? – a, b, c, d	
16.	Which complications are typical for diabetes mellitus? – a, b, c	

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TASK 1. *Name contrinsular hormones and give main mechanisms of their action:*

- 1- _____
- 2- _____
- 3- _____
- 4- _____
- 5- _____

TASK 2. *Which disturbance plays role of main section of pathogenesis at diabetic coma at patient with diabetes mellitus of I type?*

TASK 3. *What is the main pathogenetic section of hypoglycemic coma?*

TASK 4. *Which disturbances play role of main sections in pathogenesis at hyperosmolar diabetic coma?*

- 1- _____
- 2- _____
- 3- _____

TASK 5. *Sign complications of long-term diabetes mellitus.*

- 1- _____
- 2- _____
- 3- _____
- 4- _____
- 5- _____

TASK 6-7. *To solve clinic-patophysiological tasks.*

Task 1. Patient M of 60 years old was delivered to the receiving department in unconscious condition. At the examination: skin is dry, turgor of skin and tonus of ocular apple are decreased, respiration is surface, pulse 96 per minute, arterial pressure 70/50 mm. Hg. cm.; tongue is dry, periodical convulsions of limbs and mimic musculature of face. Express analysis of blood:

hyperglycemia (600mg%), hypernitrogenemia, hypersodiumemia, pH – 7,32. From the questioning of the relative of the patient became known, that he is ill on diabetes mellitus and was taking small doses of per-oral preparations, which increase amount of sugar. For a last month was suffering from exacerbation of chronic cholecystitis and colitis; often vomiting, diarrhea; was complaining on constantly thirst and excretion of large amount of urea.

1. How is condition in which was delivered patient to the hospital identified? Motivate your answer. _____

2. What have caused appearing of this condition? _____

3. Why at the development of such pathological conditions was consciousness lost? _____

4. Which methods are used for removing of patient from such condition? _____

Task 2. The patient of 45 years old, which abuse with alcohol, for last month was feeling fatigue, dizziness, thirst. They were denominated during the mornings (especially at absence of breakfast). Usually he connected weakness with using of an alcohol. On the eve at the evening was psycho-emotional stress (bad relations in family). In the morning noticed appearance of shortness of breath, acute fatigue, hyperhidrosis. Have lost consciousness in transport. Called brigade of ambulance at the examination noticed pale skin, arterial pressure 70/45 mm. Hg. cm., tachycardia (heart rate 120 per minute), disturbance of respiration (has been developed Cheyne-Stokes respiration). The patient was hospitalized.

1. What additional examinations are necessary for revision of situation? _____

2. Which form of carbohydrates metabolism pathology has been developed at the patient? What is the part of alcohol intoxication in development of such form of pathology and coma at the patient?

TASK 10. *To solve tests for selfcontrol.*

1. Woman of 24 years old is complaining on dryness in the mouth, thirst, weight loss, despite increased appetite. At the examination: stature 162 sm, weight of the body 65 kg, rate of glucose in blood 8,3 mmol/l, glucosuria. For which of indicated conditions are these symptoms more typical?

- A. steroid diabetes
- B. diabetes insipidus
- C. diabetes mellitus
- D. alimentary glucosuria
- E. renal diabetes

2. Man of 48 years old, is suffering from diabetes mellitus from 6 years old age, and was hospitalized in unconsciousness condition, which became after increased physical load. Objective: wet skin, increased tonus of muscles of limbs, increased tendon reflexes, surface respiration, pulse 78 per minute, arterial pressure 95/60 mm. Hg. cm., rate of glucose in blood

1,88 mmol/l. For which of enumerated conditions are these symptoms more typical?

- A. ketoacidotic coma
- B. hypoglycemic coma
- C. lactatacidemic coma
- D. hyperosmolar coma
- E. hypotonic condition

. Teenager of 13 years old is suffering from diabetes mellitus 4 years, after using of bad meal have appeared vomiting and often liquid stool. Condition of the patient quickly becomes worse, has appeared thirst, convulsions of limbs muscles He was delivered to the hospital in unconsciousness condition. Objective: dry skin, frequent surface respiration, odor of acetone is absent, pulse 126 per minute, arterial pressure /40 mm. Hg. cm., rate of glucose in blood 48 mmol/l, reaction of urea on acetone is negative. For which of enumerated conditions are this symptoms more typical?

- A. ketoacidotic coma
- B. lactatacidemic coma

- C. hyperosmolar coma
- D. alimentary intoxication
- E. collapse

4. Man of 42 years old for along time is ill on insulin- independent diabetes mellitus. For a last time have appeared symptoms of heart failure: complaints on quick fatigue, shortness of breath at quick movements, edemas on lower limbs in the evening. Which of enumerated factors primary conditioning heart injury?

- A. microangiopathy
- B. macroangiopathy
- C. metabolic disturbances
- D. disturbance of VEO
- E. obesity

5. Man of 38 years old was delivered to the reanimation in unconsciousness condition. Reflexes are absent Symptoms of deep cerebral disorders. Dehydration is absent. Sugar in blood 2,3 mmol/l. Relatives said, that he was is ill on diabetes mellitus for along time. What type of coma has the patient?

- A. ketoacidotic coma
- B. lactatacidemic coma
- C. hyperosmolar
- D. hypoglycemic coma
- E. hyperglycemic coma

6. Woman of 22 years old, is suffering from diabetes mellitus from 10 years old, was delivered to the hospital with complaints on general fatigue, thirst, nausea, vomiting with meal. Objective: dry skin, pale, smell of acetone from the mouth, Kussmaul's respiration, pulse 130 per minute, arterial pressure 95/60 mm. Hg. cm., rate of glucose in blood 37,7 mmol/l. For which of enumerated conditions are this symptoms more typical?

- A. hyperosmolar coma
- B. ketoacidotic coma
- C. lactatacidemic coma
- D. long-term starvation
- E. alcohol intoxication

7. At woman of 45 years old, are absent symptoms of diabetes mellitus, but on an empty stomach is defined increased amount

of glucose in blood (7,5 mmol/l).

Which next test is necessary to make?

- A. determination of glycolysing hemoglobin
- B. determination of acetone bodies in urea
- C. determination of tolerance to the glucose
- D. determination of residual Nitrogen in urea
- E. determination of glucose in blood on an empty stomach

8. At the patient in comatose condition is present smell of soaked apples from the mouth. Rate of glucose in blood plasma 18 mmol/l. Which coma is more probable to be in this case?

- A. hypoglycemic
- B. hyperosmolar
- C. ketoacidotic
- D. lactatacidemic
- E. toxic

For notes
