Министерство образования и науки Российской Федерации

ФГАОУ ВО «Казанский (Приволжский) федеральный университет»

Институт фундаментальной медицины и биологии

Кафедра морфологии и общей патологии

Дисциплина: патологическая физиология

Exam case № *

Determine the changes in the ABG analysis.
What are the possible causes and mechanisms?
Explain the pathogenesis based on the anamnesis?
Make a conclusion on ABG analysis

Patient N., 62 years old, was admitted to the surgical department with a gastric fistula in a serious condition. The skin is dry, skin turgor is reduced, the mucous are dry, the eyeballs are soft when pressed, the muscle tone is lowered. BP - 80/40 mm Hg, pulse weak 100 per minute, hematocrit increased, plasma osmolality - 270 mOsm / kg (normal 290-300 mOsm / kg). Diuresis - 600 ml.

ABG: pH = 7.47; pCO_2 = 32 mm Hg; $HCO3^-$ (SB) = 32 mmol/l; BE = + 3 mmol / l.

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Дисциплина: патологическая физиология

Exam case № ***

Determine changes in the blood test.
Explain the possible causes and mechanisms of development.
Explain the pathogenesis based on the anamnesis.
Make a conclusion on blood test.

A 63 years old woman, was admitted to the clinic with complaints of prolonged and profuse cyclic uterine bleeding over the past year. Objectively pale skin, rapid pulse. After the necessary studies, the diagnosis was made: myoma (benign tumor).

The results of a blood test:

Hemoglobin – 60 g/l;
RBC – $2{,}8 \cdot 10^{12}$ per liter;
Color index – 0,7;
Reticulocytes - 0,05%;
WBC – $4 \cdot 10^{9}$ per liter;
Basophils 1 %
Eosinophils 4 %
Neutrophils:
- Metamyelocytes – 0 %
- Band (nonsegmented) – 2 %
- Segmented50 %

Lymphocytes 36 %
Monocytes 6 %
Platelets 190×10^{9} /l
ESR – 8 mm/h.

Blood smear: anisocytosis (microcytes), poikilocytosis. Serum iron 7 μmol/l, serum ferritin 4 μg/l (the normal range 10-120 μg/l).

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Exam case № *

Determine changes in the blood test.
Explain the possible causes and mechanisms of development.
Explain the pathogenesis based on the anamnesis.
Make a conclusion on blood test.

Patient O., 20 years old, was admitted to the surgical department with complaints of weakness, pain in the right iliac region, and nausea. Body temperature 37.8 °C. The tongue is dry, covered with a grayish coating. Palpation reveals pain in the right iliac region.

Blood test**:**

RBC – $5,5*10^{12}$/l,
Hemoglobin – 150 g/l,
Color index 0,9
Reticulocytes - 1%,
WBC $13*10^{9}$/l.
Basophils - 0%,
Eosinophils – 1%,
Neutrophils:
    Metamyelocytes – 0%,
    Band (nonsegmented) – 12%,
    Segmented – 55%,
Lymphocytes – 19%,
Monocytes – 6%.
Platelets 300 $*10^{9}$/l
ESR -28 mm/h

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Дисциплина: патологическая физиология

Exam case № ***

Determine changes in the urine test.
Explain the possible causes and mechanisms of development.
Explain the pathogenesis based on the anamnesis.
Make a conclusion on urine test.

Patient A., 58 years old, complains of swelling of the legs, shortness of breath with little physical exertion, weakness. For many years he has been suffering from high activity rheumatoid arthritis.

Ultrasound reveals free fluid in the abdominal cavity, an increase in the size of the kidneys, an increase density of the signal, a small amount of fluid in the pleural cavities on both sides.

Urine test:
specific gravity – 1,026 g/cm^3,
protein - 4,1 g/l,
casts: hyaline - 3-4 per high power field, waxy - 5-7 per high power field,
leucocytes - 4-5 per high power field,
RBC - 2-3 per high power field.

Blood chemistry:
serum protein - 45g/l
serum albumin – 25 g/l
serum cholesterol - 7,6 mmol/l.

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