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| ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ |  | SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия» |
| Department: «Propedeutics internal diseases» | | 044 – 47/11 () |
| Methodical instruction | | 1 p. from 6 |

**Methodological recommendation for teaching clinical skills at
the Center for practical skills (auscultation of the heart)**

(using the execution algorithm)

Specialty: 6B10101 – "General medicine"

Discipline: "Propaedeutics of internal diseases"

Course: 3

Department: "Propaedeutics of internal diseases"

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Shymkent, 2022.

OÑTÜSTIK QAZAQSTAN

MEDISINA
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«Oñtüstik Qazaqstan medicina akademiasy» AQ



SOUTH KAZAKHSTAN

MEDICAL
ACADEMY

AO «Южно-Казакстанская медицинская академия»

Кафедра: «Пропедевтика внутренних болезней»

Методические указания

044 – 47/10 ()

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Considered at the meeting of the department

Protocol № 4A, " 13 " 12. 2022у.

Head of the Department, MD, Professor Бекмурзаева Bekmurzayeva E.K.

1. Name of clinical skill: Auscultation of the heart on the K+ simulator.

2. Training objectives: To improve practical skills in the study of patients with pathology of the valvular apparatus of the heart, techniques and rules of auscultation, differential diagnosis of heart murmurs in various heart defects.

To improve the knowledge of communication skills, knowledge, skills and practical skills in medical ethics and deontology.

3. The time required for preliminary instruction and demonstration of the skill on a mannequin is 5 minutes.

4. The time required for self-mastering the skill on a dummy is 15 minutes.

5. Necessary theoretical knowledge of the skill:

1. Anatomy and physiology of the circulatory system
2. Physiology of the valvular apparatus of the heart, the occurrence of noise
3. Pathological noises and their features
4. The mechanism of systolic noise
5. The mechanism of occurrence of diastolic noise
6. Noise listening points and their origin
7. Hemodynamics in various defects of the valve apparatus
8. Etiology and pathogenesis of heart defects
9. The main symptoms and syndromes of heart defects
10. Complications of heart defects

6. A list of mannequins, models, visual aids, interactive computer programs necessary for mastering the clinical skill: A K+ simulator for auscultation of the heart, a toolbar for starting simulation, a torso model, speakers for transmitting auscultative sound, a stethoscope.

7. List of medical products and equipment: alcohol, sterile gloves, cotton wool, phonendoscope, tonometer.

8. Execution algorithm:

| № | Step-by-step actions | Implementations | | |
|----|---|-----------------|----|-------|
| | | Yes | No | Notes |
| 1. | The student, after mutual greetings and introductions, washed his hands and stood to the right of the dummy "K+". | | | |
| 2 | Explain the course and purpose of the procedure | | | |
| 3. | Determined the apical thrust of the heart and characterized – localization, area, strength, height and resistance | | | |
| 4. | He performed auscultation of the heart at 5 points, correctly positioning the phonendoscope and observing the sequence: at the top of the heart is the point of auscultation of the mitral valve. To do this, place the phonendoscope at a point located in the V intercostal space 1-1.5 cm inside of the left midclavicular line; | | | |
| 5. | In the II intercostal space to the right of the sternum is the auscultation point of the aortic valve. To do this, place the phonendoscope on the chest wall in the II intercostal space (oriented by the collarbone, below the rib) at the right edge of the sternum; | | | |
| 6. | In the second intercostal space to the left of the sternum is the auscultation point of the pulmonary artery valve. To do this, place | | | |



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| | the phonendoscope on the chest wall in the II intercostal space (oriented by the collarbone, below the rib) at the left edge of the sternum; | | | |
| 7. | At the base of the xiphoid process is the auscultation point of the tricuspid valve. To do this, place the phonendoscope on the base of the xiphoid process; | | | |
| 8. | IV intercostal space – Botkin-Erb point – additional auscultation point of the aortic valve. To do this, place the phonendoscope on the chest wall in the III intercostal space at the left edge of the sternum | | | |
| 9. | Characterized the tones, heart murmurs at 5 auscultation points (the nature of the noise, epicenter, venue). | | | |

9. Task: To perform auscultation of the heart; to distinguish systolic and diastolic murmurs; to recognize cardiac murmurs in various pathologies of the valvular apparatus.

10. Materials for self-assessment on the topic of the lesson

1. The pulse of tardus, parvus is characteristic of:

- A) tricuspid valve insufficiency;
- B) mitral valve insufficiency;
- C) aortic valve insufficiency;
- D) stenosis of the aortic mouth;
- E) mitral stenosis.

2. Systolic tremor above the apex of the heart is characteristic of:

- A) mitral valve insufficiency;
- B) insufficiency of the aortic valve;
- C) mitral stenosis;
- D) stenosis of the aortic mouth;
- E) insufficiency of the tricuspid valve.

3. The phenomenon of paradoxical pulse consists in:

- A) a decrease in the filling of the pulse on inspiration;
- B) an increase in the filling of the pulse on inspiration;
- C) decrease in the filling of the pulse on exhalation;
- D) an increase in the filling of the pulse on exhalation;
- E) the absence of a pulse response to the phases of respiration.

4. The discrepancy between the myocardial oxygen demand and its delivery through the coronary bed is the cause of myocardial ischemia in:

- A) stable angina of tension;
- B) spontaneous angina pectoris;
- C) progressive angina pectoris;
- D) first-time angina pectoris;
- E) any variants of angina pectoris.

5. Patient Z., 20 years old. Complains of palpitations, shortness of breath, pain and swelling in the knee joints. She got sick after suffering from angina. On examination: the skin over the affected joints is hot to the touch, sharply painful on palpation, the volume of joint movements is limited. With auscultation of the heart, the I tone is weakened at the apex, systolic noise, the accent of the II tone over the pulmonary artery. ECG: high P teeth in the I and II leads. Your diagnosis?

- A) Chronic rheumatic disease, active phase. Mitral valve insufficiency

B) Rheumatoid arthritis

C) Chronic rheumatic disease, active phase. Combined mitral defect with predominance of stenosis

D) Chronic rheumatic disease, active phase. Aortic valve insufficiency

E) Infectious endocarditis

6. A 35-year-old woman went to the doctor with complaints of episodic chest pains lasting 5-10 minutes. Pains appear both at rest and during physical exertion; the pain does not radiate anywhere. Does not smoke. Blood pressure has not increased before. Two family members aged 50 and 56 died of heart disease. On examination, the patient's condition is satisfactory, blood pressure 120/70 mm Hg, heart rate 70 in 1 min. The amplification of the apical shock is determined, systolic noise is heard along the left edge of the sternum, and the intensity of the noise increases in the standing position. On the ECG: nonspecific ST changes, etc. Which of the above will best help in making a diagnosis?

A) Chest X-ray

B) Cardiac catheterization

C) Scanning with thallium

D) Echocardiography

E) Myocardial biopsy

7. Patient P., 25 years old complains of dizziness, attacks of short-term loss of consciousness. About: rough systolic noise with maximum sound in the middle of the systole at the base of the heart, to the right of the sternum, conducted to the vessels of the neck. ECG: hypertrophy of the left ventricle. Radiologically: the configuration of the heart in the form of a "floating duck". What defect is diagnosed in the patient? Which of the listed heart defects is MOST likely?

A) stenosis of the left atrioventricular orifice

B) tricuspid valve insufficiency

C) mitral valve insufficiency

D) stenosis of the mouth of the pulmonary artery

E) aortic stenosis

8. What noise is the main auscultative sign of stenosis of the left atrioventricular orifice?

A) high-frequency, soft, blowing diastolic noise at the II point

B) decreasing diastolic noise at the I point

C) a symptom of a click in the middle of the systole and late systolic noise

D) rough intense systolic noise at the apex

E) systolic murmur along the left edge of the sternum

9. Mitral stenosis is characterized by auscultative symptoms

1) clapping I tone at the top of the heart 2) accent II tone at the top of the heart 3) click of the mitral valve opening 4) diastolic murmur at the top of the heart 5) systolic murmur at the top of the heart

A) 1, 3, 4

B) 1, 2, 3

C) 2, 4, 5

D) 1, 3, 5

E) 3, 4, 5

10. The cause of subvalvular stenosis of the aortic mouth is

A) hypertrophy of the interventricular septum in HCMF

B) rheumatism

C) infectious endocarditis

D) atherosclerosis

E) combined aortic defect

11. Criteria for evaluating the performance of a skill

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| Кафедра: «Пропедевтика внутренних болезней» | 044 – 47/10 () |
| Методические указания | 6 стр. из 6 |

| № | Implementations | Evaluation criteria |
|---|------------------|--|
| 1 | Completed | All steps are taken into account when performed correctly. |
| 2 | Half done | It is counted for small errors. |
| 3 | Did not complete | Gross mistakes were made during the execution of the task. |

12. Basic literature:

1. Неотложная кардиология : учеб. пособие / под ред. П. П. Огурцова. - М. : ГЭОТАР - Медиа, 2016. - 272 с.
2. Ішкі аурулар. Кардиология модулі: оқулық = Внутренние болезни. Модуль кардиология : учебник / Л. К. Бадина [ж/б.]. - М. : "Литтерра", 2016. - 256 бет. с.
3. Калиева, Ш. С. Клиническая фармакология и рациональная фармакотерапия. Том 1 : учебник / Ш. С. Калиева., Н. А. Минакова . - Алматы : Эверо, 2016. - 460 с. Байдулин, С. А. Қан жүйесінің аурулары : оқу құралы / С. А. Байдулин ; ҚР денсаулық сақтау министрлігі; АМУ АҚ. - ; "АМУ" АҚ ОӘК мүшелерінің шешімімен бекіт. басп. ұсынған. - Қарағанды : ЖК "Акнұр", 2014. - 202 бет. с.
4. Арутюнов, Г. П. Диагностика и лечение заболеваний сердца и сосудов : учебное пособие / Г. П. Арутюнов. - ; Рек. ГБОУ ВПО "РНИМУ" им. Н. И. Пирогова" Минздрава России. - М. : ГЭОТАР - Медиа, 2015. - 504 с.

13. A list of correct answers for self-assessment materials

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|----|---|
| 1 | Г |
| 2 | А |
| 3 | А |
| 4 | Д |
| 5 | А |
| 6 | Г |
| 7 | Д |
| 8 | Б |
| 9 | А |
| 10 | А |