

Federal State Budgetary Educational Institution of Higher Education "North
Ossetian State Medical Academy" of the Ministry of Health of the Russian
Federation
Department of Internal Diseases No. 4

Methodological guidelines for conducting practical classes
with students of the 6th year of the Faculty of Medicine on the topic:
**"DAILY MONITORING OF BLOOD PRESSURE AND
ELECTROCARDIOGRAMS: INDICATIONS, INTERPRETATION OF
RESULTS"**

DAILY MONITORING OF BLOOD PRESSURE AND ELECTROCARDIOGRAMS: INDICATIONS, INTERPRETATION OF RESULTS

THE PURPOSE OF THE LESSON: to increase the level (quality) of students' knowledge and skills in the interpretation of daily monitoring of blood pressure and electrocardiogram in a cardiology clinic.

Students should be able to:

1. be able to justify the need for daily monitoring of blood pressure and electrocardiogram;
2. possess the methodology of daily monitoring of blood pressure and ECG;
3. interpret the results of the obtained studies;

MOTIVATION RELEVANCE OF THE TOPIC.

It is known that mortality from diseases of the cardiovascular system ranks first in the overall structure of mortality in our country. In this regard, the role and importance of functional research methods is increasing, in particular daily monitoring of blood pressure and ECG, which are widely used for the purpose of early detection of pathology, differential diagnosis of various diseases and monitoring the effectiveness of therapeutic measures..

Determination of the level of training of students. The second level of knowledge: control methods – written survey (20 min). Students should know the indications for daily monitoring of blood pressure and ECG, the methodology of conducting and be able to interpret the results of XM ECG and SMAD.

Report of student curators in the chamber. When reporting a patient, students should pay special attention to the following:

Daily (Holter) ECG monitoring is a method by which daily monitoring of the work of the heart is carried out. To do this, a wearable portable recorder is used, which makes a round-the-clock recording of an electrocardiogram and transmits information about the work of the heart per day to a computer. Summarizing twenty-five years of research experience in the field of recording electrical phenomena and the possibility of transmitting electroencephalograms by radio, Norman J. Holter created and introduced in 1961 a new method for recording ECG. Over the following years, we witnessed the improvement of this method of examination, which, unlike the standard ECG method, is called daily, outpatient or Holter. Over the years, the 40-kilogram radio transmission recorder, which was fixed on the patient's back, was replaced with a magnetic tape recorder, which weighed about 2 kg at first, and now less than 0.5 kg. Technical improvement has led to improved recording quality, minimized artifacts associated with the patient's physical activity. Now it is possible to register 12 leads, automatic analysis. The improvement of the equipment made it possible to increase the number of recorded and analyzed parameters. Currently, along with the analysis of cardiac arrhythmias, it has become possible to quantify the displacement of the ST segment, assess the function of the pacemaker (EX) and cyclic heart rate variability, determined automatically in the form of various temporal and spectral parameters, register averaged ECG signals at high gain and automatically measure the duration of the QT interval. As a rule, modern XM apparatuses use ECG registration in 1-12 modified thoracic leads, imitating (but not identical!) chest leads V1 (CM1) – V5 (CM5). All patients with XM are recommended to keep an activity diary with a record of symptoms arising during the study, periods of physical and emotional stress, taking medications, eating, traveling by transport / driving, rest, sleep, unpleasant sensations (palpitations, "interruptions" in the heart, chest pain, etc.).

Indications for daily ECG monitoring:

1. Analysis of the presence and nature of cardiac arrhythmias and conduction
2. Evaluation of the effectiveness of antiarrhythmic therapy

3. Detection of ischemic episodes
4. Evaluation of the pacemaker
5. Assessment of heart rate variability

Daily blood pressure monitoring (SMAD).

A single definition of blood pressure provides information only for a single moment in time and does not always reflect the real clinical picture. Since the 70s of the 20th century, daily blood pressure monitoring (SMAD) has been widely used, providing additional information about the blood pressure level outside the doctor's office (in the most natural conditions). In the PAMELA study [2010], the incidence of white coat hypertension was 9-12% in the general population, and 36% among patients with grade I hypertension, if the level of average daily blood pressure <135/85 mmHg was used as its criterion. Automatic wearable devices for SMAD reproduce the algorithm of auscultative or oscillometric measurement methods. Most devices measure blood pressure using the oscillometric method. However, the auscultative method is preferable when monitoring patients with increased motor activity.

Indicators of the daily blood pressure profile according to the SMAD data:

1. The normal degree of nocturnal decrease in blood pressure "dippers" is a decrease in nocturnal blood pressure of 10-20%
2. Insufficient degree of decrease in blood pressure "nondippers" - decrease in night blood pressure 0-10%
3. Increased degree of nocturnal decrease in blood pressure "overdippers" - more than 20%
4. A steady increase in nighttime blood pressure "nightpickers" - the pressure does not decrease.

SMAD methodology: - Installation of the device; -Mandatory control measurements; -Oral instruction of the patient; -Input of the received data into the computer with their subsequent processing using statistical and graphical methods; - Analysis of the results

Conducting classes in a thematic classroom. Analysis of the features of etiology, pathogenesis, clinic and treatment of a particular patient. Specify the main methods of examination of the patient. Specify the main methods of examination of the patient, justify the need for their appointments, the main indications and contraindications for use.

The final part of the lesson: control of the acquired knowledge is a test control.

Resume.