Objective: of the main indicators of resting ECG and QT interval dispersion in different phases of the menstrual cycle in young healthy girls.

Materials and Methods: the resting ECG was performed and analyzed four times with an interval of 1 week on 13 healthy girls, aged 19 to 22 years old, who do not take drugs. The calculation of the main indicators of ECG and the assessment of the dispersion of the QT interval was performed manually.

Results: a sinus rhythm with a frequency of 52 to 116 beats per minute (average 74 beats / min) was detected on the all resting ECG. All ECG morphological parameters are regarded as a variant of norm. When pairwise comparison of ECG in the first and second half of the menstrual cycle, no differences in heart rate, QRS complex form, T wave, QT and QTc intervals were detected. When analyzing the dispersion of the QT interval, only one of the examined (7.7%) showed an increase from 0.02 s in the first half to 0.06 s in the second half of the cycle.

Conclusion: according to the data we obtained, the phase of the menstrual cycle does not affect the basic parameters of a standard resting ECG.

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MEDICAL EQUIPMENT MANAGEMENT SYSTEM FOR CLINICAL ENGINEERING DEPARTMENT

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Research relevance: an efficient hospital information system provides the managing performance of in-hospital clinical engineering department (CED) that is responsible for both the patient and clinical staff safety in using medical equipment and cost control in related operational activities of medical equipment.

Objective: to analyze the hospital operating performance of the Medical Equipment Management System (MEMS) used for data collection and management strategies.

Materials and Methods: the following sources of information were used: the MEMS network architecture which is formed by the intranet and internet construction.

Results: the received results clearly demonstrated the ability of data analysis for maintenance history records with MEMS. But it just uses the partial function of the MEMS in all operating activities of CED. One of the worst problems is that the equipment is too old to be maintained and repaired for the hospital. Planning some evolution in this sphere became a major challenge in most decisions of health care organizations and the related industries. It should be noted that there is a need to apply adequate management tools which optimize the development of medical technology that takes into account the life costs and improves health care services.

Conclusion: medical equipment has become an essential component of modern health services. Balanced medical environment depends on medical equipment to make a correct diagnosis and administer the proper treatment. But sometimes clinical engineering is particularly weak. In addition to the traditional operation management, the patient safety, operation performance in cost vs good analysis, and risk evaluation and control are the important issues for using medical equipment in hospital. So, the development of successful management strategies still requires constant improvement.

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ARRHYTHMIA OF THE HEART: THE WOLF-PARKINSON-WHITE SYNDROME

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Research relevance: most often arrhythmias occur in the neonatal period. The common cause of arrhythmias is Wolf-Parkinson-White syndrome. This syndrome is one of the most famous disorders of the heart's conducting system which occurs in 54–75% of newborns and is one of the leading diseases of the newborn.

Objectives: analysis of the etiology of arrhythmia and evidence of the fact that Wolf-Parkinson-White syndrome is one of the leading causes of arrhythmia.

Materials and methods: to analyze literary sources, to study the anatomical and physiological aspects of the cardiac conduction system in the normal state and its features in newborns, as well as to determine the course of the Wolf-Parkinson-White syndrome.

Results: in newborns, CCS has distinctive anatomical and physiological features, namely: a greater number of pacemaker cells in the sinoatrial node and a smaller number of intermediate cells and collagen, slow resorption of individual elements of the embryonic conduction system, continuing after the birth of a child, the bundle of His and the Purkinje fibers.

WPW syndrome is characterized by a faster passage of PD through the pathological bundle of Kent, because of which the re-entry mechanism of the pulse occurs. The course of the disease depends on the presence, frequency and duration of tachycardia. Sudden coronary death in WPW syndrome occurs in 4% of cases, usually due to fatal arrhythmias. The syndrome may be associated with genetic condition and it may be inherited from parents but this fact is the subject of the further investigations.

Conclusion: Wolf-Parkinson-White syndrome is the second most common cause of supraventricular tachycardias in the world. And this syndrome may result in arrhythmia in neonatal period. In abnormal case Kent beams appear in conducting system of the heart. Kent beams are present at birth, but later they self-destruct. Now in some cases, WPW syndrome is associated with a mutation in the PRKAG2 gene, but the possibility of its hereditary transmission has not been proven.

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NEURONAL STEM CELLS AND PERSPECTIVE FOR THEIR USE IN TREATMENT OF NEURODEGENERATIVE DISEASES

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Research relevance: according to the WHO, neurodegenerative diseases will come out on top by the prevalence in the world by 2050. Medicine treatment which is presently used does not affect the outcome of the disease. The most perspective direction in the treatment of such diseases is using of the NSCs.