MODERN METHODS OF HIGHT-PRECISION DRUG DELIVERY

Zhukova D.D.

Scientific Supervisor: L.G. Burlakova, Senior Lecturer
Department of Foreign Languages
Saint-Petersburg State Pediatric Medical University

Research relevance: this study is devoted to targeting drug delivery to the organs.This kind of delivery allows to solve some problems, such as accurate delivery of medication in the body of the patient, histological overcoming natural barriers, improving the pharmacokinetic efficiency. The delivery may be performed by nanostructures for example liposomes, nanomicelles, polymer microspheres, symbiotic molecules and bacteria with erythrocytes.

Objectives: to study modern methods of high-precision drug delivery to organs to treat any of diseases and disorders of the organism.

Materials and methods: study and analysis of foreign language articles, published papers, medical records and electronic sources for the last 3 years.

Results: the study revealed that the delivery of drugs to hard-to-reach areas of disordered tissues is possible with the help of bacteria sensitive to the magnetic field and oxygen level. This kind of delivery is the most accurate because the Magnetococcus Marinus naturally moves along the magnetic lines until it reaches a zone with low oxygen content. Also magnetic particles may develop special "carpets" to transfer other particles that do not have magnetism. In addition, the study revealed another method involving bacteria with flagella, which is attached to the red blood cell carrying the drug. The construction of the bacterium with erythrocytes is formed where bacterium is responsible for the movement, and the red blood cell corrects the direction under the action of a magnetic field. For this method special bacteria which respond deviations of temperature by changes in gene expression may also be used. "Point" delivery of drugs is possible with their help. The main advantage of these bacteria is self-destruction by means of increasing human body temperature in case of the therapy was ineffective.

Conclusions: modern methods of high-precision drug delivery to organs make possible the transport of drugs in the human body to overcome natural barriers and membranes, as well as to improve pharmacokinetic efficiency.

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RECONSTRUCTION MICROCHIRURGICALE EXPÉRIMENTALE DE FLUX PORTAL

Minaeva A., Lobzin A.

Directeur: Professeur d'Etat Kupatadze D.D.
Département des maladies chirurgicales de l'âge des enfants
Université d'Etat de pédiatrie et de médecine de Saint-Pétersbourg, Russie, Saint-Pétersbourg

Actualité de l'étude: possibilité d'étudier les changements de l'hémodynamique systémique et portale après le shunt/ (après l'implantation du shunt) afin d'améliorer le traitement chirurgical.

Objectif de l'étude: etude de l'état des branches et du tronc de la veine porte après l'anastomose portacaval par un shunt de type H.

Matériaux et méthodes: des opérations expérimentales ont été effectuées sur des lapins sous le grossissement optique et avec l'utilisation d'une technique microchirurgicale avec un fil 10/0. La veine jugulaire interne a été greffée. Des anamnèses de 170 enfants âgés de 3 mois à 17 ans.

Résultats: en se basant sur les méthodes d'étude utilisées et des connaissances théoriques, nous avons déterminé les types d'anastomoses qui permettent d'améliorer l'état des branches et du tronc de la veine porte. En se basant sur les résultats de la recherche, nous avons étudié des changements de l'hémodynamique systémique et portale après le shunt.

Conclusions: la cure chirurgicale de l'hypertension portale chez l'enfant.

MENTAL STATUS EVALUATION OF WOMEN WITH CHILDREN SUFFERING FROM PERINATAL PATHOLOGY

Zakharova A.N., KozhadeyE.V.

Scientific Supervisors: PhD, Associate Professor S.V. Grechanyi, N.V. Zhukovskaya, Senior Lecturer
Department of Psychiatry and Narcology
Department of Foreign Languages
Saint-Petersburg State Pediatric Medical University

Research relevance: postpartum affective disorders are widely spread in the modern world and require the right diagnostics and doctor's competence.

Objectives: investigating of individual mental status and female adaptive system with children suffered from perinatal diseases.

Materials and methods: the main group of women with children treated in the Perinatal Centre of SBbSPMU had been examined on the basis of such items as PHQ-9, Copying test, LSI methodologies, with a comparative group consisting of women and healthy newborns.

Results: in more than half of cases the condition of women was regarded as an alarming depression, in more than 1/3 of cases obsessive states were noted, the contents of which were illness or death of the newborn, an accident with relatives, fear of causing harm to the child and others. During the initial examination, the PHQ-9 values of the main group and the comparative group did not differ significantly, which corresponds to resulted indeterioration of patients.

Conclusions: taking into consideration the variety of symptomatic female mental disorders mostly dependent on newborn health, the state of women presently regarded as depressive and anxious adaptive reaction.

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THE ELECTROCARDIOGRAM INDICATORS DEPENDING ON THE PHASE OF THE MENSTRUAL CYCLE IN YOUNG GIRLS

Serova A.

Scientific Supervisors: PhD, Associate Professor Reeva S.V.
Department of Internal Medicine Propaedeutics
Department of Foreign Languages
Saint-Petersburg State Pediatric Medical University

Research relevance: according to the literature, female sex hormones have a significant effect on the myocardium, in particular, the cardioprotective properties of estrogens are well known. But dependence of the main indicators of resting ECG on the phase of the menstrual cycle currently remains insufficiently studied.