MODERN METHODS OF HIGHT-PRECISION DRUG DELIVERY

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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.

References

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RECONSTRUCTION MICROCHIRURGICALE EXPÉRIMENTALE DE FLUX PORTAL

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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.