

FEATURES OF MATHEMATICAL MODELING IN THE CREATION OF DRUGS

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Introduction. While producing drugs pharmaceutical companies pay special attention to math modelling. In particular in modern pharmaceutical industry are being taken different math models that describe substances behavior in the organism, us processes and help to plan before clinical researches.

The aim of the research. Conduction of the theoretical analysis of math modelling while creation of drug and to look through the example of math model while creation the drug curing multiple sclerosis.

Materials and methods. The were used some theoretical methods of research for solving the problem (studying and analysis of scientific at literature to define the condition of development and theoretical basis of the research).

Results and discussion. Today the math model is a virtual math construction, that was created on the basis of experimental datum and that has all properties of real object. While creating a medication it is possible to define the right dosage. *Interoperate*, in high dosage any drug is toxic and the possibility of side effects is doubling using low ones it can be unhelpful. So it is necessary to count of dosage where the drug has maximal effect but is not a poison. It gives the opportunity to make the right model. With the help of math modelling is it necessary to count the right amount of drug its behavior and influence of the organism.

Today the drug against multiple sclerosis was registered a hard autoimmune disease while lymphocytes start attack myelin covers of nervous fibers a person looses mobility slowly. This drug has anti-inflammatory analgesic an antipyretic activity and also is used for treatment of autoimmune diseases.

The mechanism of this drug action is the amount of lymphocytes low down. Clinical researches show that drug is effective in doses of 0,5 and 1,25. Scientists and pharmacists have asked themselves: "if it is possible to use half the dose (0.25 mg)?" The calculation is simple: the smaller the dose, the less harmful is the drug. But for a clinical trial of one dose will take years, and medicine is vital for patients. Therefore, with properly designed mathematical model, it was proved that this drug is also effective at the dose of 0.25 mg.

Conclusions. Thus, we can safely say that nowadays, mathematical modeling is one of the most promising methods for increasing the efficiency of the process of creating new medicines.