are divided into three groups and their initial blood glucose concentration is determined. After this two animals are injected subcutaneously with zinc-insulin amorphous and zinc-insulin crystalline respectively at a dose of 1.0 units/kg. A third animal is the control animal. Blood glucose concentration of the animals was determined after 1, 2 and 3 hours from the start of the experiment. Blood glucose concentration (mol/L) was determined by a calibration curve constructed using a standard glucose solution or by data.

Main results. In the "in vivo" experiment, it was found that the administration of insulin preparations decreases the blood glucose concentration of animals, the hypoglycemic effect being more pronounced under the influence of amorphous zinc-insulin than crystalline zinc-insulin.

Conclusions. It has been shown that the rate of insulin release from preparations depends on their physical properties, in this case due to zinc-insulin polymorphism.

BIOAVAILABILITY OF MEDICINAL SUBSTANCES

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Introduction. Studies of the last three decades conducted by domestic and foreign scientists using modern physic-chemical, pharmacological and biochemical methods have allowed sufficiently deep and reliable understanding of the complex relationships that have developed between the drug as a special physic-chemical system, and the macro-organism as a biological system of the factors that cause these relationships. The criterion for assessing the degree of influence of individual or the sum of pharmaceutical factors on the activity of a medicine is the testomological (physiological) availability of the drugs. Bioavailability actually describes the quality of a medicine.

The aim of the study. To study the basic principles of drug bioavailability, which is an indispensable link in biopharmacy.

Methods of research. The measure of bioavailability (BA) is the ratio (in percent) of the amount of a drug substance absorbed prescribed in the investigational dosage form (S) to the amount of the same drug substance prescribed in the same dose but in the standard dosage form (S1). The bioavailability can be determined using the following formula: BD=S*100/S1.

Main results. The standard dosage form is intravenous injection as it ensures immediate and complete entry of the drug into the large circulatory system. In this way, absolute bioavailability is determined. It is more common, and probably more useful, to determine relative bioavailability. For this purpose, the standard dosage forms are a solution or other oral dosage form that is well characterized and well absorbed.

The bioavailability is usually determined by determining the excretion of the drug in the urine (over a known period of time after administration) or the concentration of the drug in the blood after a single or multiple administration. However, there are medicines whose bioavailability needs to be determined differently, such as when applied to the skin (ointments, liniments, plasters) or to the rectal mucosa

(suppositories) and the vagina (globules). When determining the bioavailability of a drug substance by any method, a number of conditions must be precisely met, the most important of which are the timing of taking the liquids for analysis and the frequency of sampling.

The bioavailability of the medicine can be determined in healthy human volunteers. These can be men aged between 20 and 40 years without gastrointestinal, hepatic, renal, cardiac or thyroid diseases. Volunteers stop taking other medicines at least 1 week before the study, and stop taking drugs that affect enzyme and hormone activity for 1 month. Volunteers do not eat (or only use a specially selected diet) for 4-12 h before the experiment and for another 2 h after taking the medication. Strict standardization extends to other conditions of the experiment: amount of water drunk (effect on gastrointestinal motility), urine pH (effect on drug excretion kinetics), physical activity and body position (state of anxiety, much less stress), etc.

Due to the complexity of determining the bioavailability of drugs and for ethical reasons, trials are tended to be carried out in animal models (in vivo) and by in vitro tests. One of the main objectives of experimental biopharmacy is to develop such in vitro tests and such in vivo animal models that would allow comparison of the results with those of human studies and be meaningful due to the indisputable correlation identified. Such tests and models offer great potential not only for establishing bioavailability in new drug development and studying the effects of individual pharmaceutical factors, but also in ongoing drug quality control.

Conclusions. Knowledge of the basics of biopharmacy in relation to pharmacokinetics:

- the use of drugs in the body can be determined in a number of ways;
- facilitates the determination of rational dosages of drugs for their use in therapeutic practice;
- makes it possible to clarify indications and contraindications for the use of drugs;
- facilitates and accelerates directed search of new drugs with desired distribution patterns in the body, and in some cases with higher or broader activity;
- allows justification of the use of pharmaceutical factors in drug production.

WHAT IS THE PLACE OF PHARMACEUTICAL PREPARATIONS TODAY AND IN THE FUTURE IN THE KINGDOM OF MOROCCO?

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Introduction. Pharmaceutical preparations are of unavoidable importance. From the preparation to magistral preparation, the pharmacist leaves his commercial routine and from his commercial routine and diversifies his field of action for the duration of a prescription. The patient, for his part the patient benefits from his own medicine in terms of quantity, dose and composition. They also allow the doctor to personalise the treatment and thus adapt it to the needs of each patient.