

## PRESCRIPTIONS AND DRUGS: IMPORTANT CONCEPTS OF MEDICINE AND PHARMACY

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**Abstract:** This article covers the concept of a prescription, the classification of drugs, their pharmacological properties, the rules for writing prescriptions, as well as the role of information technologies in modern pharmacy. The clinical and legal requirements in the prescription process, the pharmacokinetic and pharmacodynamic properties of drugs are analyzed on a scientific basis.

**Keywords:** prescriptions, the concept of a prescription, the classification of drugs, pharmacological properties, the rules for writing prescriptions, information technologies, clinical and legal requirements, the pharmacokinetic and pharmacodynamic properties of drugs.

### INTRODUCTION

In medical practice, the process of writing a prescription is one of the most important means of communication between a doctor and a pharmacist. A prescription is considered not only an instruction on the use of a drug, but also an important document for ensuring patient safety. Medicines are chemical or biological substances that affect physiological and pathological processes in the human body. The modern concept of treatment requires scientifically based use of medicines, individual dosage, consideration of pharmacokinetic parameters, and minimizing side effects.

The concept of a prescription and its importance

Definition of a prescription

A prescription is derived from the Latin word “receptum”, which means “to take” or “to accept”. In medical practice, a prescription is an official document sent by a doctor to a pharmacist or patient, indicating the composition, dosage, and method of administration of a medicine.

Functions of a prescription.

Therapeutic task - to prescribe the necessary medicine to the patient.

Legal task - a document that determines the responsibility of a medical worker.

Information task - to provide clear instructions to the pharmacist.

Control task - to correctly dispense medicines that are included in the prescription.

Components of a prescription.

A prescription usually consists of the following parts: Inscriptio - details of the medical institution, Nomen aegroti - name and age of the patient, Praescriptio - name of the drug, Signatura - instructions for using the drug, Subscriptio - instructions for the pharmacist, Datum et Signum - date and doctor's signature.

Drugs: classification, composition and general characteristics.

Classification of drugs: Drugs are classified according to various criteria, by pharmacological groups - Analgesics, Antibiotics, Antihypertensives, Antiseptics, Hormones, Sedatives, Vitamins, etc.

By origin.

Natural (plant, animal, mineral), Semi-synthetic, Synthetic, Biotechnological (monoclonal antibodies, vaccines).

By mechanism of action:

- Receptor agonists and antagonists;
- Enzyme inhibitors;
- Channel blockers;
- Transport system modulators;

Fundamentals of pharmacokinetics and pharmacodynamics.

Pharmacokinetics

Pharmacokinetics is the science that studies the processes of drug entry, distribution, metabolism and excretion into the body.

ADME concept:

A (Absorption) — absorption of the drug into the blood.

D (Distribution) — distribution of the drug through tissues.

M (Metabolism) — changes in drug substances.

E (Excretion) — excretion of the drug and its metabolites.

Pharmacodynamics.

Pharmacodynamics — studies the mechanism of action and biological effects of a drug on the body.

Basic concepts:

Therapeutic effect, Toxic effect, Dose-effect relationship, Therapeutic range.

Prescription rules and clinical requirements

Basic principles of prescription writing

- Writing according to international non-proprietary names (INN);
- Taking into account the patient's age, weight, allergic status;
- Taking into account the safety profile of the drug;
- Clear indication of dosage and frequency of use;
- Reusability, use of special forms for potent drugs.

Prescription of dangerous and potent drugs

Such drugs are under special control, and the prescription is issued: With a special number, With a doctor's seal and additional approvals, For a limited period.

Features of prescription writing in pediatrics

-Dosage is determined by body weight;

-Liquid dosage forms are used more often;

-Since the risk of side effects is greater, the minimum effective dose is selected.

The role of information technologies in modern pharmacy

Electronic prescription systems

Today, an electronic prescription (e-prescription) system has been introduced in many countries. Its advantages:

-Reduces errors;

-Eliminates the risk of prescription loss;

-Easily controls the drug chain.

**CONCLUSION:** Prescriptions and drugs are one of the main elements of medical practice, and are important for patient safety, treatment effectiveness, and the proper functioning of the pharmacy system. Pharmacokinetics, pharmacodynamics, side effects, patient individuality, and legal norms must always be taken into account during the prescription process.

Modern information technologies, electronic prescription systems, and a scientific approach are shaping a new stage in pharmacotherapy.

### References.

1. Choudhary, A., & Kaushik, D. (2020). Organic Molecules in Drug Discovery: An Overview. *International Journal of Pharmaceutical Sciences*. <https://doi.org/10.1016/j.bmc.2020.115378>
2. Nicolaou, K. C., & Rigol, S. (2019). Organic Synthesis in Drug Discovery. *Angewandte Chemie International Edition*. <https://doi.org/10.1002/anie.201906221>
3. Li, J. J. (2015). *Heterocyclic Chemistry in Drug Discovery*. Wiley. <https://doi.org/10.1002/9781118920045>
4. Patani, G. A., & LaVoie, E. J. (1996). Bioisosterism: A Rational Approach in Drug Design. *Chemical Reviews*. <https://doi.org/10.1021/cr950066q>
5. Fischer, J., & Ganellin, C. R. (2006). *Analogue-based Drug Discovery*. Wiley- VCH. <https://doi.org/10.1002/9783527607495>
6. Blakemore, D. C., et al. (2018). Organic Synthesis Provides Opportunities to Transform Drug Discovery. *Nature Chemistry*. <https://doi.org/10.1038/s41557-018-0039-7>
7. Lovering, F., et al. (2009). Escape from Flatland: Increasing Saturation as an Approach to Improving Clinical Success. *Journal of Medicinal Chemistry*. <https://doi.org/10.1021/jm901241e>
8. Brown, D. G., & Bostrom, J. (2016). Where Do New Drugs Come From?. *Nature Reviews Drug Discovery*. <https://doi.org/10.1038/nrd.2016.213>