

## **I GENERAL PRESCRIPTION SOLID MEDICINAL FORMS**

**A. Actuality.** In order to optimize the treatment of the patient with various pathologies, it is necessary to administer the drugs in the appropriate medicinal forms. Scientific and technological progress has allowed the pharmaceutical industry to diversify drug forms according to the routes of administration. For these reasons, knowledge of the particularities of medicinal forms and the methods of prescribing various medicinal forms, used in medical practice, is necessary.

**B. Purpose of training.** Familiarization of students with the basic notions in the field of medicine and prescription, prescription forms and methods of prescribing solid medicinal forms.

**C. Learning objectives:**

a) The student must **know**: the basic notions in the field of medicine; the notion of drug raw material, medicinal substance and medicinal forms; nomenclature of medicines; the chemical, commercial, common international (DCI) and officinal (pharmacopoeia) names of drugs; abbreviations of Latin words and signs used in prescriptions; the structure of the prescriptions, the masterly and official prescription; characteristic and prescription rules of solid medicinal forms.

b) The student should **be able to**: correctly prescribe solid medicinal forms, differentiate a correct prescription from a wrong one.

**D. Knowledge from previous and related disciplines necessary for interdisciplinary integration.** Latin language. Declension of nouns; prepositions used in the prescription; the main abbreviations and signs.

**E. Self-training questions:**

1. The medical prescription. Prescription and prescription formularies. General prescribing methods. Structure of the prescription. Words and auxiliary signs in the prescription (recipe). The main abbreviations. Preservation of prescription formularies.

2. State pharmacopoeia. International Pharmacopoeia. Their content and importance.

3. The notion of "remedy", "drug", "active principle" (active substance, drug substance), "medicine" and "pro-drug". Components of the drug. Drug keeping.

4. Master, official, industrial drugs. Medicines: inoffensive, highly active, toxic and narcotic. Natural, semisynthetic, synthetic drugs. Essential drugs. OTC drugs.

5. Compensated drugs. Compensation grades for drugs. List of compensated drugs. Beneficiaries of compensated drugs.

6. Nomenclature of drugs. The chemical, common international (CI), officinal, commercial (company) name.

7. Pharmacography. Prescriptions of drugs. Notion of posology (dosage of drugs).

Dose and types of dose.

8. Medicinal raw material. Medicinal forms and their classification (according to consistency, the number of medicines contained and the way of administration).

9. Solid medicinal forms.

a) powders for internal use, requirements for dosed powders.

b) powders for external use (powders), their destination.

c) capsules.

d) granules (granules). Powders and granules in sachets (packages).

e) tablets. Varieties of tablets.

f) dragées.

g) pelicules (films, plates).

h) briquettes.

i) species.

j) other solid medicinal forms: caramels, pencils, pills.

**F. Independent work** (is done in written form while preparing for the lesson)

### **Medical prescription exercises**

Prescribe recommended drugs in the following medicinal forms:

#### ***a) Powders for internal use:***

1. 30 rifampicin powders of 150 mg each. Administer one powder internally 3 times a day.

2. 20 powders with acetylsalicylic acid of 250 mg each. Administer one powder internally 2 times a week.

3. Niclosamide powder of 2 grams each. To be administered internally for a single intake.

4. 10 powders with ascorbic acid of 50 mg and rutoside of 20 mg. Administer one powder internally 2 times a day.

5. 10 nicotinic acid powders of 50 mg each. Administer one powder internally 3 times a day.

6. 10 packets of magurlit granules of 2 g each. Dissolve the contents of the packet in a glass of fruit juice. Administer internally one package 3 times a day.

7. Granules with urodan of 100 g each. Dissolve a teaspoon of granules in a glass of water and administer internally 3 times a day.

#### ***b) Powders for external use (powders):***

1. "Galmanin" 50.0. To apply on the damaged portions.

2. Sulfacetamide – 20.0. To apply on the damaged portions.

3. Ethacridine lactate 2.5% -10.0. For external use.

#### ***c) Capsules:***

***- operated***

1. 10 capped capsules with loperamide 2 mg each. Administer internally one capsule per day.

2. 20 capped capsules with doxycycline hydrochloride of 50 mg each. Administer internally 2 capsules 2 times a day.

3. 20 capped capsules with piracetam of 400 mg each. Administer internally one capsule 3 times a day.

**- for inhalations** ⇐

1. 10 capsules of 20 mg disodium cromoglycate. Administer through the inhaler one capsule 4 times a day.

**- elastic**

1. 15 castor oil capsules of 1 ml each. Administer internally 5 capsules for one intake as a purgative.

2. 10 capsules with fern extract of 500 mg each. Administer internally 10 capsules per intake as an anthelmintic.

**d) Tablets:**

1. 15 tablets with isoniazid of 300 mg each. Administer internally one tablet per day.

2. 20 diphenhydramine tablets of 10 mg each. Administer internally one tablet 2 times a day.

3. 30 tablets with clonidine hydrochloride of 75 mcg. Administer internally one tablet 3 times a day.

4. 10 tablets with "theophedrine". Administer internally one tablet 3 times a day.

5. 10 "tempalgin" tablets. Administer one tablet internally for headache.

**e) Dragees:**

1. 10 dragees with chlorpromazine of 25 mg each. Administer internally one dragee 3 times a day.

2. 10 dragees with retinol acetate of 1 mg each. Administer internally one dragee 3 times a day.

3. 21 "non-ovlon" dragees. Administer internally one dragee per day.

**f) pills:**

1. 30 pills with ferrous lactate of 500 mg each. Administer internally one pill 3 times a day.

**g) pelicules (films or plates):**

1. 10 films with pilocarpine hydrochloride of 25 dmg each. One film each 3 times a day retropalpebrally.

2. 10 films with "nonoxynol-9". Administer one intravaginal film for contraception.

**h) pencils:**

1. 10 nystatin pencils of 250 mg each. Administer one pencil per day into the urethral canal.

2. 20 metronidazole pencils of 500 mg each. Administer 1 pencil 3 times a day into the fistula canal

***i) caramels:***

1. 20 caramels with ketokonazol of 50 mg each. Administer a caramel in the oral cavity 2 times a day.
2. 20 caramels with septolets. Administer a caramel in the oral cavity 2 times a day.

***k) species:***

1. 100.0 antitussive species. Prepare an infusion of one spoonful of the species per 100 ml of water. Administer 100 ml internally in the evening at 18.00.
2. 20 packages of 1.5 spasmolytic species each. Prepare an infusion from one package in 100 ml of water and administer internally 2 times a day.

***l) brichets:***

1. 20 calendula brichets of 1.0 each. Prepare an infusion from a brichet in 100 ml of water and gargle the oral cavity 2 times a day.
2. 10 chamomile flower brichets of 5.0 each. Prepare an infusion from a brichet in 500 ml of water to take baths 2 times a day.

Review exercises: Guidelines for Laboratory Work in Pharmacology. Chisinau 2016, page 7-9.

## SEMISOLID OR SOFT MEDICINAL FORMS. MODIFIED RELEASE DOSAGE FORMS (PART 1).

**A. Actuality.** Actuality. In order to optimize the treatment of the patient with various pathologies, it is necessary to administer the drugs in the appropriate medicinal forms. Scientific and technological progress has allowed the pharmaceutical industry to diversify drug forms according to the routes of administration. For these reasons, knowledge of the particularities of medicinal forms and the methods of prescribing various medicinal forms, used in medical practice, is necessary.

**B. Purpose of training.** Familiarization of students with the basic notions in the field of medicine and prescription, prescription forms and methods of prescribing solid medicinal forms.

**C. Learning objectives:**

a) The student must know: the masterly and officinal prescription of semisolid medicinal forms; Latin abbreviations and signs used in prescription; modified release dosage forms.

b) The student should be able to: correctly prescribe semisolid (soft) medicinal forms, to distinguish a correct prescription from the wrong one.

**D. Knowledge from previous and related disciplines necessary for interdisciplinary integration.** Latin language. Declension of nouns; prepositions used in the prescription; the main abbreviations and signs.

**E. Self-training questions:**

1. Semisolid (soft) medicinal forms and their use.
2. Ointments. Excipients for ointments. Ophthalmic and nasal ointments, rare varieties of ointments: creams, balsams, gel.
3. Pastes.
4. Suppositories.
5. Rods.
6. Liniments.
7. Emplaster (plasters).
8. Cataplasms.
9. Soaps.
10. Therapeutic (pharmaceutical) systems. The characteristic of pharmaceutical forms with modified systems for the release and transport of medicinal drugs:
  - a) therapeutic systems with controlled release of medicinal substances (monolithic systems, reservoir systems, pump systems);
  - b) medicinal systems of transport and delivery in the target site (vectored systems, medicinal transporters).

## **F. Independent work (is done in written form while preparing for the lesson)**

### **Medical prescription exercises**

#### ***a) Ointments:***

1. Oxolin - 0.25% - 10g. Apply to affected areas of the skin.
2. Hydrocortisone -1% - 10g. For application on damaged areas of the skin.
3. Ftorocort - 15 g. For application on damaged areas of the skin.

#### ***b) Pastes:***

1. Zinc oxide - 25% - 30 g. Apply to affected areas of the skin.
2. Dermatol -10% - 15 g. Apply to affected areas of the skin.
3. Nitrofurural - 0.2% - 50 g. For application on damaged areas of the skin.

#### ***c) creams:***

1. 15.0 fluocinolone cream. To apply on the damaged portions of the skin.
2. 20.0 triderm cream. To apply on the damaged portions of the skin.

#### ***d) gels:***

1. 30.0 diclofenac gel. To apply on the damaged portions of the skin.
2. 50.0 apizatron gel. To apply on the damaged portions of the skin.

#### ***e) balsams:***

- 1. 50.0 livian balsam. To apply on the damaged portions** of the skin.

#### ***f) Suppositories:***

1. 10 rectal suppositories with procaine of 100 mg each. One suppository 3 times a day.
2. 10 "anusol" suppositories. **Intrarectal use**, One suppository 2 times a day per rectum.
3. 10 vaginal suppositories with metronidazole of 500 mg each. One suppository 2 times a day.

#### ***g) Emplasters or plasters:***

1. 10 plasters with tramadol 50 mg. Apply one per day on the forearm.
2. 10 plasters with lidocaine 100 mg. Apply one per day on the forearm.

Review exercises: Guidelines for Laboratory Work in Pharmacology. Chisinau 2016, pp. 9-10.