



Здравье

THE PRACTICE IN CLINICAL PHARMACY

Methodological recommendations

**MINISTRY OF HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY**

THE PRACTICE IN CLINICAL PHARMACY

Methodological recommendations

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Methodical recommendations were developed by the faculty of Clinical Pharmacology and Clinical Pharmacy department of the National University of Pharmacy for the students involved in the educational and professional program for the second (Master's) level “226 Pharmacy, Industrial Pharmacy” who are taking practical training in clinical pharmacy at the pharmacies. These methodological recommendations are also useful for the training supervisors at the corresponding departments as well as for the representatives of pharmacy establishments. The recommendations outline the goal, objectives, content and the basic stages of the practical training, the obligations of supervisors at the departments and pharmacies as well as students, the templates of reporting documents.

The content was developed in accordance with the Standard of Master education in specialty “226 Pharmacy, Industrial Pharmacy”.

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INTRODUCTION

Nowadays the number of OTC-drugs is growing in most countries of the world. OTC drugs present huge group medicines that could be dispensed to a person visiting a pharmacy without a physician's prescription meaning the individual responsibility of a person. According to the WHO, responsible self-medication is the practice whereby individuals treat their illness and conditions with medicines that are approved and available without a prescription, and which are safe and effective when used as directed. Therefore the concept of "patient-centered care" has become a strategic course of healthcare development worldwide.

The approach of patient-centered care changes fundamentally the role of a pharmacist within the health system. The principal aim of his professional activity is shifting from increasing the number and quality of medicines available on the market to the enhancing the efficacy and safety of a therapy receiving by a particular patient as well as providing pharmaceutical care to each pharmacy visitor.

This model was theoretically substantiated by clinical pharmacy which presents the final stage in the process of teaching medical and biological courses within high school pharmacy education. Clinical pharmacy is based on knowledge gained by students from learning biology with fundamentals of genetics, anatomy, general and pathological physiology, microbiology with immunology, biochemistry, pharmacology, bioethics and biosafety, pharmacotherapy with pharmacokinetics, laboratory diagnostics, pharmaceutical and industrial technology of drugs. As a complex subject, clinical pharmacy combines the range of logically related disciplines that complement each other: fundamentals of clinical medicine, clinical pharmacology and pharmaceutical care that is the principal component of professional expertise.

The important part of learning clinical pharmacy is the practical training that is aimed at strengthening knowledge gained in the process of learning and acquiring professional skills in the conditions of future work.

During the practice in clinical pharmacy students perform the functions of a pharmacist at the pharmacy counter (being supervised by a qualified specialist), dispensing medicines and providing pharmacy visitors with advice regarding the rational use of drugs (guidance on using specific dosage forms, dosage regimes, compatibility and non-compatibility of medicines, possible side effects, etc.)

Also, students are expected to train communication skills as well as ethical interaction with patients/patient representatives, expertise in gathering medication history, counseling and discourse in the pharmacy and preventing and monitoring potential drug adverse reactions.

The subject of the practice in clinical pharmacy is to master the algorithm of pharmaceutical care of prescription and non-prescription medicines of various pharmacological groups, advisory work at the pharmacy as well as prevention and monitoring of potential drug adverse reactions. Students train to apply the algorithm of determining the patient who requires a physician's consultation and develop the skills in choosing the best OTC medicine for a particular patient. They must gain expertise in pharmaceutical care of specific patient categories, e.g. elderly, children, pregnant women, etc. who need increased attention of a pharmacist because of being vulnerable to adverse events and due to the severity of potential harm comparing to other patients.

During the practice in clinical pharmacy students must train to apply in the pharmacy workspace the List of drugs that could be dispensed without a prescription and the Pharmacist's Protocols in the pharmacy workspace.

THE GOAL AND OBJECTIVES OF THE PRACTICE

The goal of the practice in clinical pharmacy is to strengthen the theoretical knowledge in clinical pharmacy and pharmaceutical care, to train the skills in the process of pharmaceutical care of pharmacy visitors and gaining the practical experience.

The practice in clinical pharmacy ensures the acquiring by the students *the following competencies*:

- *integral*: the ability to resolve typical and sophisticated tasks as well as practical challenges in the professional pharmaceutical practice applying the postulates, theories and methods of fundamental chemical, technological, biomedical and socio-economical sciences; summarize knowledge and resolve complex issues, develop a judgment on the basis of incomplete or limited information; elaborate clear and unambiguous conclusions and knowledge, providing its reasonable substantiation to specialists in biomedical field as well as to persons without pharmaceutical or medical expertise.
- *general*:
 - the ability to act in a socially responsible and civic deliberative way;
 - the ability to apply knowledge in practice;
 - the ability of abstract thinking, analysis and synthesis, study and getting modern knowledge;
 - knowledge and comprehension in a field and profession;
 - the ability to adaptation and acting in a new situation;
 - the skills in communication and information technologies;
 - the ability to choose the communication strategy, teamwork skills;
 - the ability to assess and assure the quality of the work performed.
- *special (expert)*:

- the ability to monitor the effectiveness and safety of medication use in a population according to the clinical and pharmaceutical characteristics as well as subjective and objective clinical signs, laboratory and instrumental criteria of patient examination;
- the ability to assure the rational use of prescription and non-prescription medicines according to physical and chemical, pharmacological characteristics, specificity in a biology and pathophysiology of a particular disease, pharmacotherapy regimes;
- the ability to provide first aid to patients and persons injured in critical situations;
- the ability to provide advice and pharmaceutical care in the process of choosing and delivering a non-prescription medicine by evaluation of its risk/benefit ratio, compatibility and contradictions, using the data about the health status of a particular patient and considering the biopharmaceutical, pharmacokinetics, pharmacodynamics as well as the physical and chemical characteristics of a drug;
- the ability to disseminate the information on prevention of the most common internal medicine diseases, infectious and parasitic diseases, promoting timely diagnostics and appropriate adherence to treatment of these diseases according to its medical, biological and microbiological characteristics.

The key *objectives* of the practice in clinical pharmacy are as follows:

- to train the professional skills in pharmaceutical care in the process of dispensing non-prescription medicines;
- to train the professional skills in defining the conditions of the rational use of prescription medications, providing information on the compatibility with food, alcoholic drinks, other medicines, dosage regimes, the appropriate use of a particular dosage form;

- to gain the skills of practicing an individual approach to each patient considering the age and severity of a disease following the principles of medical ethics and deontology.

As a result of passing the practice, a student is expected to gain

KNOWLEDGE:

- basic acting orders and other legislations of the Ministry of Health concerning the acceptance of receipts and dispensing medicines in the pharmacy;
- classification and modern range of medicines;
- the List of non-prescription drugs approved for use in Ukraine, the range of OTC drugs;
- the rules of dispensing non-prescription drugs;
- the typical clinical symptoms of the most prevailed diseases that require a patient to be referred to a physician;
- the principles of gathering medical history, patient history, medication history;
- the algorithm for the choice of the best non-prescription medicine to treat the disease and pathological conditions allowed for self-medication;
- the principles of providing pharmaceutical care to pharmacy visitors during dispense of non-prescription medicines;
- groups of patients who require especially attentive pharmaceutical care – (groups of risk);
- organization of informational and advisory activity in the pharmacy;
- rules of occupational safety and health.

SKILLS:

- to use the drug regulations and reference literature;
- to be aware of the range of drugs produced by domestic and foreign manufacturers;

- to identify among pharmacy visitors the patients who requires mandatory consultation of a physician;
- to identify among pharmacy visitors the patients eligible to self-medication;
- to distinguish the categories of prescription and non-prescription drugs;
- to provide to pharmacy visitors information on all issues regarding therapy with prescription and non-prescription drugs;
- to gather the patient history, medical and medication history;
- to choose the best non-prescription drug for a particular pharmacy visitor;
- to provide pharmaceutical care to pharmacy visitors during dispense of prescription and non-prescription medicines;
- to follow the rules of occupational safety.

The methodical recommendations were developed in accordance with the Standard of Master education in specialty “226 Pharmacy, Industrial Pharmacy” and conform to the requirements of the NUPh educational plan.

These recommendations are the basic learning and methodical document developed according to the program of the discipline “Practical training in clinical pharmacy”.

The practical training in clinical pharmacy takes place at pharmacies in the 5th year of the study (9th or 10th semester), the practice period is 2 weeks (10 working days of the five-day workweek). The discipline encompasses 90 hours/3.0 ECTS credits.

RESPONSIBILITIES

Vice-Rector for scientific and pedagogical (educative) work conducts general control of the organization of the practice taking by high school students.

The head of the manufacturing practice and employment assistance office bears responsibility for the management of the practice, communication with departments, training sites and students.

Supervisors of the practice at the University take primary responsibility for the fulfillment of the practice program.

The assigned practice supervisor at the training sites takes ultimate responsibility for the compliance with the occupational safety rules and measures, sanitary manufacturing norms and receiving the information required for the fulfillment of the practice program.

THE RIGHTS AND OBLIGATIONS OF THE DEPARTMENT, TRAINING SITES, AND STUDENTS

The department:

- defines the practice content;
- develops the methodological recommendations and the practice program;
- submits applications to the manufacturing practice and employment assistance office for the conclusion of agreements with training sites not covered by the automatic database;
- assigns the practice supervisors among the qualified faculty of the department which were involved in teaching the “Clinical Pharmacy and Pharmaceutical Care” course;

- discusses the results of the practice and analyzes the performance of the practice program at the meetings of the department (information about the process of the meeting and decision-making are to be recorded in a minute of a meeting);
- provides the manufacturing practice and employment assistance office with the list of faculty who are responsible for the practice of students, the list of methodological documents associated, an application for the conclusion of agreements if required, the report on the practice.

The teacher – a supervisor of the practice at the Department:

- provides to students the information on the goal, period, content of the practice, processing of the necessary documents, and reporting requirements;
- conducts a practice exam according to the procedure defined by the Department;
- interacts with training sites concerning the refinement of the practice programs, adapted to the modern conditions;
- provides manufacturing practice and employment assistance office with information about training sites available for the future academic year.

The training site (a pharmacy institution):

- independently defines the organizational structure concerning the supervision of the training at the institution;
- following the agreement about the practice admits the students to take training whose number is defined by the training site provided that the practice program is fulfilled appropriately;
- provides the appropriate conditions for the practice, compliance with the rules of occupational safety, accident prevention as well as sanitary requirements according to the legislation;

- assigns the experienced workers to supervise the practice of students who outline a written report about the student's practice when it is completed;
- contributes to setting the requirements concerning the content of the practical component of the educational programs, designing the system and criteria for students' knowledge and competencies assessment, etc.

Representatives of the training sites (pharmacies) can participate in the conferences dedicated to the practice (concluding, scientific and practical) as well as other events promoting the quality improvement of the students' practice (general organizational meetings of students, teachers routine meetings, seminars for the practice supervisors, etc.).

The practice supervisor at the training sites:

- is assigned by the training site's order and manage the students' practice at the site according to the practice program;
- assures the conditions required at each workplace for the fulfillment of the practice program according to the practice schedule;
- encourages mastering the new techniques, advanced technologies and modern organizational methods;
- controls the students' compliance with the internal regulations of the pharmacy, documents the students' attendance;
- assesses the quality of the students work, provides written reports about the practice after its completion by students outlining the information about the practice program fulfillment, the quality of professional knowledge and skills, students attitude to the work, individual task performance, organizational skills, participation in mastering new techniques and technologies;
- facilitates the gathering data for students projects;

- inform the manufacturing practice and employment assistance office as well as the respective department about all violations of the internal regulations, occupational safety, and the practice program.

The students must:

- to take the forms of required documents as following: the assignment (Φ A2.2.2-32-289), the practice report (Φ A2.2.2-32-291) and methodological materials before the start the practice;
- to perform appropriately all tasks assigned by the practice program as well as the practice supervisors;
- to learn and follow strictly the rules of occupational safety, accident prevention, sanitary rules, and internal working regulations;
- to take responsibility for the performed work;
- to complete timely the reporting documents and pass the practice exam.

During the period of practice, students must follow the working schedule of the pharmacy. Minor changes in this schedule are possible only with the approval of the supervisors at the practice site or the management of the training site division.

The students working time during the practice period concludes 45 hours (1.5 credits) per week including 1 hour per day allocated for making records in the practice report.

THE PROGRAM OF THE PRACTICE IN CLINICAL PHARMACY

The students involved in the educational and professional program for the second (Master's) level “226 Pharmacy, Industrial Pharmacy” of the full-time and low-residency mode of study take the practice in clinical pharmacy at the pharmacist’s workplace called “at the counter”.

The subject of the course “Manufacturing practice in clinical pharmacy” is the algorithm of providing pharmaceutical care during dispense of prescription medications and OTC-drugs, consultation and counseling at the pharmacy as well as prevention and monitoring of potential drug adverse reactions.

Students’ working schedule during the practice in clinical pharmacy

| № | Description of a task | Number of days |
|----|---|----------------|
| 1. | Acquaintance with a training site. Instruction on occupational safety, sanitary rules and compliance with internal procedures of a pharmacy. Equipment of a pharmacist’s workplace (describe the duties of a pharmacist according to the respective regulatory documents, availability of additional handbooks or reference literature). (from the 1st to 5th paragraphs of the Report on the practice) | 1 |
| 2. | Learning advisory activities in the pharmacy. Describe the organization of work on the prevention of irrational use of drugs, prevention of undesirable adverse events. Provide an example of an information sheet about a new medicine that was supplied to a | 1 |

| № | Description of a task | Number of days |
|----|--|--------------------|
| | pharmacy, define its advantages compared to other medicines of the same pharmacological group available in the pharmacy. Describe the range of drugs available in the pharmacy (the 6th paragraph of the Report on the practice) | |
| 3. | Learning the ethical and deontological aspects of communication between a pharmacist and pharmacy visitors, a pharmacist and a physician (the 7th paragraphs of the Report on the practice) | Daily (10 days) |
| 4. | Acquaintance with psychological aspects of the relationships between a pharmacist and a patient. Provide the list of factors affecting the efficacy of therapy (8th paragraphs of the Report on the practice). | Daily (10 days) |
| 5. | Dispensing prescription and non-prescription medicines. Provide the examples of OTC-drugs and pharmaceutical care accompanying drugs dispense in which you have participated: describe the three cases representing a pharmacist's communication with a patient who asked advice, propose your considerations regarding the appropriate actions in this case and explain the mistakes of a pharmacist you have noted (if any) (the 9th paragraph of the Report on the practice). | Daily (10 days) |
| 6. | Training the algorithm of dispensing the medicines prescribed by a physician to treat a patient with hypertension and providing pharmaceutical care according to the scheme (according to the protocols of the pharmacists with prescription drugs for treating people with hypertension) (the 13th paragraph of the Report on the practice). | 1 |

| № | Description of a task | Number of days |
|----------|---|---------------------------------|
| 7. | Gaining the skills of a search and comparison of analog drugs available in the pharmacy (the 14th paragraph of the Report on the practice). | 1 |
| 8. | Reporting the practice results. Final exam. | According to the study schedule |

SUMMARIZING THE PRACTICE RESULTS

- At the end of the practice period, students must report about the fulfillment of the program according to the procedure defined by the Department.
- The practice program determines the types and forms of assessing the knowledge and skills gained by students as a result of the practice completion
- Completed practice documents (the practice reports) must be signed by the practice supervisor at a practice site and proved by a stamp of a pharmacy.
- During the first 15 days of the semester following the practice students must take the practice exam that is evaluated by a teacher of the Department.
- The practice results are assessed by the 100-score scale with respective definitions in ECTS as well as traditional scale adopted in Ukraine
- The current control equals 36-60 scores and includes: check of the performance of the tasks assigned by the educational program, completeness, and accurateness of the practice report, regularity in the performance of routine duties at the training site (*see Table*).
- The final module control equals 24-40 scores and includes an interview aiming to control the acquisition of practical skills; the maximum total module rate is 100 scores (*see Table*).
- The results of the practice exam are recorded in the semester control list as well as the individual study plan of a student.
- After the end of the practice, the Department submits the exam list to the responsible dean office, the report about the practice – to the manufacturing practice and employment assistance office.

- The practice reporting documents are stored according to the List of the typical documents generated by public authorities and regional government offices, other institutions, enterprises and organizations with defined storage terms approved by the «Statement on the students practical training in NUPh» Order of the Ministry of Justice of Ukraine dated 12.04.2012 № 578/5 (with amendments according to the Order of Ministry of Justice of Ukraine dated 07.03.2013 № 400/5).
- Students who did not complete the practice program because of valid reasons are provided with an opportunity to re-take the practice by an individual schedule free of class time.

The criteria and scale for practice results assessment

Table

| Criteria | Current control | Final control |
|--|------------------------|----------------------|
| Accurateness and completeness of the completed report on the practice | 6-10 | |
| The accurate and proper performance of the tasks assigned by the practice program (30 practical cases 0.6-1 scores each) | 18-30 | |
| Accurate and complete performance of the task assigned by the practice program (information about 4 medicines 1.5-2.5 scores each) | 6-10 | |
| The accurate and complete performance of the task assigned by the practice program (example of a receipt with the medicine prescribed by a physician to treat a patient with hypertension) | 6-10 | |
| The expertise in defining persons who require a mandatory referring to a physician as well as persons who need a non-prescription medicine for self-medication. The skill to make valid | | 24-40 |

| | | |
|--|-------|-------|
| choice of the pharmacological group and the best non-prescription medicine of a particular pharmacological group, dosage form and the route of administration for a concrete pharmacy visitor. The skill to find alternative methods for managing issues of medicine change, removing the polypragmasia, reducing the risk of adverse reactions. The skill to provide pharmaceutical care to the specific categories of pharmacy visitors. | | |
| TOTAL | 36-60 | 24-40 |

REPORTING DOCUMENTS OF THE PRACTICE

During the practical training, students must maintain reporting documentation (the Report on the practice in clinical pharmacy) on a daily basis. The Report is an official document that must be submitted to the Department of Clinical Pharmacology and Clinical Pharmacy after the practice completion according to the procedure defined by the Department. Students who did not provide the Report as well as missed the deadlines for its completion are not allowed to pass the practice exam.

The Report on the practice is expected to represent the self-work of the student in performing tasks and duties. In the first section of the Report, a student must describe the organization of pharmacy activities, provide examples of learning the ethical and deontological as well as psychological aspects of pharmacist's work and communication with a patient.

Every day throughout the practical training at the pharmacist's workplace students must describe in the Report three situations (cases) of pharmaceutical care (two cases describing the dispense of non-prescription medicines and the one – a prescription medicine) and outline personal considerations regarding the actions required in the case. A student must provide arguments for the medicine choice relying on the theoretical knowledge and skills obtained in the course "Clinical pharmacy and pharmaceutical care" as well as other courses. The description of the case must be brief and clear revealing the main point of the issue and pharmacist's actions taken to address it (if possible, according to the protocols of the pharmacists).

Students are encouraged to use the following resources for substantiation of the decisions about the choice of a medicine: handbooks on pharmacotherapy, reference books on medicines, internal diseases,

textbooks and guides on clinical pharmacy, lecture records and other relevant literature available in the pharmacy. Also, the students will train the skills of searching analog medicines and their comparison with original ones available at the pharmacy.

Besides, students are required to master the algorithm of dispensing the drugs prescribed by a physician to treat a patient with hypertension and providing pharmaceutical care according to the scheme (according to the protocols of the pharmacists with prescription drugs for treating people with hypertension).

Students must make records in the Report on the practice daily at the end of a workday and to store it at the pharmacy. The Report must be available for the practice supervisor from the department at any time of a workday. At the end of the practice period, the Report must be signed and by the pharmacy manager and approved by the pharmacy stamp. The lack of a signature, as well as a stamp, will prevent students from taking the final control of the practice exam.

At the end of the Report, students must outline the practice results providing the evaluation of positive and negative aspects, personal conclusions and proposals for the practice improvement. The management of the training site does not confirm the conclusions.

The example of the title page and the template for the Report records are provided in Appendices 1-3 of these methodical recommendations.

The example of the title page
of the Report on the practice in clinical pharmacy

NATIONAL UNIVERSITY OF PHARMACY
DEPARTMENT OF CLINICAL PHARMACOLOGY
AND CLINICAL PHARMACY
UKRAINE

REPORT
on the practice
in Clinical Pharmacy

The student speciality “Pharmacy for foreign students”
(Language of Instructions – English) of the 5th year of the group____
of the National University of Pharmacy

(surname, name, patronymic)

Place of practice_____
(No of pharmacy, address, telephone)

Time of practice
from « » _____ 20__ г.
to « » _____ 20__ г.

The manager of the pharmacy institution

(surname, name, patronymic)

(signature)
Place for a stamp

Supervisor of the practice from the department

(surname, name, patronymic)

(signature)

General information about the training site

1. Type of pharmacy (community pharmacy, private, hospital and others)

2. Timetable of the pharmacy

3. Medical and health institutions located near the pharmacy (pharmacies, hospitals, ambulatories and others), their field of medical practice

4. Safety instructions:

(surname, name, patronymic, the position of the person who gives instructions) (signature)

5. Organization of the work of the pharmacist at the drugstore:

- workplace equipment, pharmacist's responsibilities in the pharmacy organization

- the presence of the main existing orders and other regulatory documents governing the work of a pharmacist in the country where he has his practice, as well as information materials, reference books, etc.

6. Features of the organization of advisory and information work in the pharmacy:

organization of work for the prevention of irrational use of medicines, for prophylaxis of undesirable side effects, using of poor quality drugs (expired valid, violation of storage conditions and others)

- an example of an information paper (information message) about new drug (or drug, that just come in pharmacy)
-
-
-
-
-
-
-
-
-
-

- The range of drugs in the pharmacy

7. Acquaintance with ethical and deontological aspects in the work of a pharmacist (the need and role of medical ethics and deontology in the process of communication between a pharmacist and a pharmacy visitor, pharmacist and doctor):

8. Psychological aspects of the relationships between pharmacist and patient (factors affecting the efficacy of therapy):

The example of the Report records (examples of pharmaceutical care provision to pharmacy visitors in which you have participated (the 9th paragraph of the Report))

| № | Practical situation | Actions of the pharmacist | Situation analysis, your decision, recommendations |
|----|---|--|---|
| 1. | A young woman asked you for a drug for relieving tooth pain | A pharmacist advised a drug diclofenac, granules for oral suspension | <p>Diclofenac is a prescription medicine thus a pharmacist is not able to administer this drug and dispense without a physician prescription. Prior to the drug administration, a pharmacist should have asked a visitor the following questions:</p> <ol style="list-style-type: none"> 1. Whom the drug is designated for (a child, a pregnant woman, an elder person)? 2. How long does the pain last? 3. Whether the following symptoms are present: headache, fever, shivering, etc? 4. If any of threatening symptoms is available a visitor is strongly advised to contact a dentist immediately! 5. Whether a visitor has cardio-vascular diseases, gastrointestinal tract diseases, etc? 6. It is reasonable to administer the drug ibuprofen for symptomatic relieving of toothache. Also oral cavity rinsing with warm solution of household soda or sage (Salvia) extract is advisable. |

| | | | |
|----|---|--|---|
| | | | <p>However, it is essential to mention: if toothache does not disappear during the following 2-3 hours or gets stronger, a visitor should refer to a dentist (avoid the use of analgesic medicines 3 hours prior to a dentist visit because medicines effect impedes the diagnosing).</p> |
| 2. | <p>A man asked to dispense a drug for treating a rash around the lips</p> | <p>A pharmacist questioned whether a man used a medicine containing acyclovir?</p> <p>After the positive answer, a pharmacist dispensed acyclovir tablets 200 mg and the acyclovir ointment.</p> | <p>Acyclovir tablets 200 mg is a prescription medicine and could not be dispensed without a physician's receipt.</p> <p>Acyclovir ointment is a non-prescription medicine, but a pharmacist should have asked the following questions prior to the drug administration:</p> <ol style="list-style-type: none"> 1. Whom the drug is designated for (a child, a pregnant woman, an elder person)? 2. When did a rash firstly appear? 3. Whether a rash is accompanied by fever, general health state deterioration, etc? 4. Whether a rash spreads on the other body areas or mucosae? 5. If any of threatening symptoms are available a visitor is strongly advised to contact a physician immediately! 6. Whether a positive effect of acyclovir was experienced before? 7. Whether any other medications have |

| | | | |
|----|--|--|---|
| | | | <p>been taken already (glucocorticosteroids, antibacterials, antivirals, etc)?</p> <p>8. It is reasonable to advise: (a) strict following the personal hygiene rules (not to touch and squeeze spots, to wash the hands carefully before and after the ointment use; to use a personal towel and dishes); to apply the ointment once in 4-hours except of nighttime. If a rash manifestation exceeds 10 days or other threatening symptoms occur – immediate referring to a physician is required.</p> |
| 3. | A visitor referred with a physician receipt prescribed Cefpodoxime tablets 200 mg. | A pharmacist dispensed Cefpodoxime tablets 200 mg. | <p>A pharmacist should have asked the following questions prior to the drug administration:</p> <ol style="list-style-type: none"> 1. Whom the drug is designated for (a visitor, his child or his wife, etc.)? 2. Whether the medicine has been taken already before? If yes, what were the reasons (indications)? 3. If any allergic reactions occurred as a result of the use of medicines? 4. Does a visitor take a antibacterial medication currently? 5. It is reasonable to use pre- and probiotics during antibacterial treatment for enhancing intestinal microflora balance. |

| | | | |
|--|--|--|---|
| | | | <p>It would be reasonable to administer the drug Lineks for instance along with the antibiotic drug dispense.</p> <p>6. It is worth to advise the following: (a) to follow the required duration of therapy as well as prescribed doses; to take the medicine only with water; to follow healthy diet (exclude the food that are difficult to digestion. Avoid fried foods, high-fat foods, salty foods, smoked foods, dairy foods as well as tonic beverages, alcoholic drinks are strongly discouraged).</p> <p>It is essential to mention: if symptoms of recovering do not occur during the following 2-3 days, a visitor should refer to a physician for changing therapy!</p> |
|--|--|--|---|

Appendix 3

The example of the Report records (example of a drug prescribed by a physician to treat a patient with hypertension and pharmaceutical care provided according to the scheme (the 13th paragraph of the Report))

| | |
|---|---|
| Receipt | Rp.: Tab. Enalapril 5,0 D.t.d. N 20 S. 1 tablet per day |
| Is the receipt correct? | An inappropriate dose of a drug is prescribed: 5.0 (5 grams) instead of 0.005 (5 mg) |
| Compliance with the prescribed dose of the prescribed drug: | In the course of the communication, a pharmacist clarified that the drug was prescribed for initial hypertension therapy thus the dose 0,005 (5 mg) is correct. |
| Information about the prescribed drug: | |
| dosing regimen | 5 mg once daily with further dose adjustment |
| conditions of the drug administration | The tablets could be taken with or without food |
| duration of treatment | The drug is prescribed for the first time, therefore, a patient should refer to a physician in 2-3 weeks later for evaluation of therapy effectiveness and further physician counseling is required every 6-12 months since the targeted blood pressure level is achieved |
| правила зберігання | The drug should be stored out of the reach of children at room temperature (15-25 °C) away from moisture and light. |
| Features of drug intake: | |
| possibility of drug administration in pregnant and elderly people | The drug is contraindicated in children under 12 years, pregnant and breastfeeding women |
| possible side effects of prescribed drug | Nervous system: headache, depression Organs of sight: blurred vision Cardiovascular: dizziness, hypotension (especially after first drug intake), chest pain, heart arrhythmia, angina, tachycardia Respiratory: cough, dyspnea Gastrointestinal: nausea, diarrhea, abdominal pain, |

| | |
|--|---|
| | <p>dysgeusia</p> <p>Dermatological: rash, hypersensitivity/angioedema swelling of the face, limbs, tongue, lips, glottis or/and larynx</p> <p>Hematologic: anemia, thrombocytopenia, agranulocytosis (the rate of hematological disorders is higher in patients with renal failure, autoimmune diseases), increased serum creatinine, urea, and potassium. The data have shown ACE inhibitors may cause renal function deterioration and proteinuria</p> |
| the effect of nutrition and the simultaneous administration of other drugs | <p>Use the drug with or without food. Increased salt intake decreases the effectiveness of enalapril. Ethanol, diuretics, antihypertensive medicines increase the hypertensive effect of enalapril</p> <p>Sleeping drugs, narcotic, analgesic medicines combined with enalapril enhance the blood pressure decrease.</p> <p>Simultaneous intake of potassium saving diuretics may cause hyperkalemia</p> <p>Non-steroid anti-inflammatory drugs (especially indomethacin) and estrogens decrease the antihypertensive effect of enalapril</p> |
| General recommendations about the modification of lifestyle | Normalizing body mass, bad habits avoidance, a decrease of water and salt intake |
| Patient's actions in case of adverse reactions of the prescribed drug | Consult a physician regarding further use of the drug |

RECOMMENDED READINGS

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4. Medicines [Электронный ресурс] // European Medicines Agency. – Режим доступа: <https://www.ema.europa.eu/en/medicines> (дата звернення: 12.01.2020). – Назва з екрана.
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11. *Nursing 2019 Drug Handbook*. , 2019.
12. *Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations* [Электронный ресурс] - Режим доступа: <https://www.accessdata.fda.gov/scripts/cder/ob/index.cfm> (дата звернення: 12.01.2020). – Назва з екрана.

13. Schwinghammer, T. L. Pharmacotherapy Casebook: A Patient-Focused Approach / T. L. Schwinghammer, J. M. Koehler, J. S. Borchert, D. Slain. . , 2014.
14. The Pharmacist Guide to Implementing Pharmaceutical Care. , 2019.
15. Wells, Barbara G, Joseph T. DiPiro, and Terry L. Schwinghammer. Pharmacotherapy Handbook. Stamford, Conn: Appleton & Lange, 2000.
16. Whalen K.; Carinda Feild; Rajan Radhakrishnan

FOR NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

FOR NOTES

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Навчальне видання

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ВИРОБНИЧА ПРАКТИКА З КЛІНІЧНОЇ ФАРМАЦІЇ

Методичні рекомендації

за редакцією проф. І. А. Зупанця

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