MINISTRY of EDUCATION and SCIENCE of UKRAINE

V.N. KARAZIN KHARKIV NATIONAL UNIVERSITY

Medical faculty

**Department of general practice-family medicine**

**IT IS RATED BY**

**The first pro-rector is from educational-pedagogical work**

\_\_\_\_\_\_\_\_\_\_\_ PhD V.V. Aleksandrov

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**WORKING EDUCATIONAL PROGRAMM**

From discipline

**“Clinical Pharmacology”**

for students of the 5-th course of medical faculty of KhNU by V.N. Karazin

ΙΙΙ - IV accreditation

OSI-7.110101 “Medical care”

ECTS of the educational process

**Clinical** **Pharmacology.** Working educational program from discipline for students. – Kh.:KhNU by Karazin, 2016

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The program was approved on the meeting of General Practice-Family Medicine Department

Protocol No. \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2016

Head of the Department \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Methodical commission of the Medical School approved the program

ProtocolNo. \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2016

Head of the commission \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2016

**1. EXPLANATORY NOTE.**

The introduction into clinical practice of a large number of drugs, the need to determine their effectiveness and safety of appointment causes the need for a unified approach to the system of studying pharmacokinetics, pharmacodynamics, interactions and side effects in patients. This has resulted in the introduction to a training program for doctors in the late 60's and early 70's of the twentieth century of a new medical discipline - clinical pharmacology.

Clinical Pharmacology - the science that deals with the studying of drugs as they are applied to humans (WHO). It teaches the physician to select from all of the existing the most effective and safest drug for individualized therapy and prophylaxis considering its comorbidities. In-depth knowledge of clinical pharmacology will determine the correct mode of drugs application, its dosage form and route of administration, prevent and eliminate unwanted side effects and drug interactions.

Knowledge of clinical pharmacology are based both on the experimental data and theoretical positions of pharmacology and other biomedical sciences and also on the factual material of clinical disciplines.

Clinical Pharmacology Teaching is conducted the best in therapeutic clinical bases, taking into account the etiology of disease, the major pathogenetic mechanisms of its formation, the clinical picture of its course, appropriate drugs from their comparative analysis and selection of the right one.

The main task in teaching of the subject must be training of a specialist with sufficient theoretical knowledge and practical skills for the most efficient drug therapy for a particular patient, of a specialist, who obtains the methodology of individual selection of effective and safe drugs on the basis of pharmacokinetics, pharmacodynamics, possible manifestations of side effects, features of disease, age of the patient, optimal dosage forms. This specialist should be able to make rational in regard to pharmacokinetic and pharmacodynamic drug combinations.

Students should be able to develop a strategy and tactics of treatment of the disease in individual patients and implement dynamic monitoring of the effectiveness and safety of drug therapy.

The program of clinical pharmacology for students in higher institutions (colleges) of III-IV accreditation levels is made for specialties 7.110101 "Medical care" 1101 "Medicine" in accordance with current regulations.

The program is based on the following regulations:

- Educational qualification characteristics (EQC) and education-professional programs (EPP) training, approved by the Ministry of Education and Science of Ukraine from 16.04.03 №239 "On approval of the components industry standards of higher education towards training 1101 -" Medicine,

- Recommendations on curriculum development training courses, approved by the Ministry of Health of Ukraine from 24.03.04 № 152 "On Approval of the recommendations on curriculum development training courses" with changes and additions made by the order of the Ministry of Health of Ukraine №492 of 12.10.04 "On amendments and additions to the recommendations on curriculum development training courses ",

- The Order of the Ministry of Health of Ukraine from 31.01.03 number 148 "On measures for implementation of the Bologna Declaration statements in the system of higher medical and pharmaceutical education,

- Experimental curriculum developed on the principles of the European Credit Transfer System (ECTS) and approved by the Ministry of Health of Ukraine from 31.01.05 №52 "On approval and introduction of a new curriculum of training educational qualification level" specialist "qualification" doctor "in higher educational institutions of III-IV accreditation levels of Ukraine in specialities "Medicine", "Pediatrics", "Medical prophylaxis.",

- instructions on the assessment system of training of students in conditions of credit-modular organization of educational process (Medical Education in the world and in Ukraine. Approved by the Ministry of Health of Ukraine as a textbook for teachers, masters, graduate students. Kyiv. Kniga Plus, 2005).

According to the curriculum, the studying of clinical pharmacology is carried out during the fifth year of study.

Clinical pharmacology as an academic discipline:

1. is based on studying by students of medical biology, physiology, pathological physiology, microbiology, medical chemistry, biochemistry, pharmacology, propaedeutics of internal medicine, internal medicine, phtisiatry, neurology, psychiatry, dermatology, venereology, traumatology and orthopedics, obstetrics and gynecology, and it is integrated with these disciplines.
2. lays the foundations in studying by students of internal medicine, general practice (family medicine), anesthesiology and intensive therapy, which involves integrating the teaching of these disciplines and forms abilities to apply knowledge of clinical pharmacology in further education and in professional activities.
3. provides guidelines for the development of ideas on general principles of drug therapy of major diseases and their individual manifestations.

Organization of educational process is carried out by the credit modular system according to the requirements of the Bologna Declaration.

The discipline program is structured onto 1 module, which consists of 3 blocks of content modules, 7 topics of practical classes in accordance with "The guidelines on curriculum development training courses" (The Ministry of Health of Ukraine from 12.10.2004, № 492).

Student workload is described in ECTS credits - credits that are counted to students in the case of successful assimilation of the module (test credit).

The types of studies according to the curriculum are:

a) practical classes,

b) Student’s self-studying

Practical classes have such an organizational structure:

1. Preparatory stage (organizing, setting educational goals and their motivation, control the level of knowledge - tests for the "Step-2" (Krok-2), oral theoretical questions, writing out prescriptions).
2. The main stage (formation of professional abilities and skills to identify the general principles of pharmacokinetics, pharmacodynamics, clinical analysis of patients, writing out prescriptions, solving typical problems of pharmacotherapy and pharmacological tests, assignments using computer technology).

The duration of practical classes is 4 hours, number of days - 7.5.

During the practical training it is necessary to use audiovisual training devices: tables, slides, collections of drugs, training videos, computer equipment, etc .;

It is obligatory on each class to conduct a clinical analysis of the patient on the topic of lesson. This includes:

-examination of the patient

-formulation of the preliminary diagnosis

-the appointment of appropriate treatment

-indications and contraindications to the appointment of a drug

- Clinical manifestations of this group of drugs

- The negative effects of drugs of this group

- The interaction of various drugs

- Analysis and evaluation of instrumental studies and the parameters that characterize changes in the function of the human body under the influence of the drug.

Student’s self-studying of the discipline occupies an important place. In addition to traditional extracurricular training of students, it includes an individual work - curation of patient with writing of a "Protocol of efficacy and safety of drugs."

Each student receives a form of a "Protocol ..." which he (she) fills up during working with patients in extracurricular time. Student exposes a diagnosis, appoints a treatment plan, describes drugs that are prescribed (justification of use; safety assessment of drugs that are taken, the interaction of drugs that are prescribed to a patient, ambulatory treatment recommendations). During practical classes students defend their work.

The final module control is in its completion. Assessment of student for the discipline is rating and is defined by ECTS system and scale that is accepted in Ukraine.

**2. The purpose of studying the discipline**

**"Clinical Pharmacology"**

Clinical pharmacology as a subject aims to prepare professionals who possess a sufficient amount of theoretical knowledge and practical skills for the most efficient drug therapy for a particular patient, have a methodology to select the most effective and safe drugs and their combinations, taking into account individual characteristics of the organism, course and the form of the disease, the presence of comorbidity, on the basis of evidence-based medicine data.

**Final goals of studying the discipline**

**"Clinical Pharmacology"**

The final goals of the discipline are formulated in accordance with the educational and professional program (EPP) and educational qualification characteristics (EQC):

• To select the required medicines, adequate dosage form and dose mode input along with their appointment to patients with major pathological syndromes

•To identify the basic methods of clinical examination of patients to evaluate the efficacy and safety of prescribed drugs and to analyze their results

• To use the basic parameters of the pharmacokinetics for rational prescribing of drugs

•To interpret and consider in clinical practice the l features of clinical pharmacokinetics, pharmacodynamics, side effects and interactions of major groups of medications

• To provide consequences of drug interactions during their combined use and to have skills in prevention and correction of adverse effects of medicines

•To conduct a survey of patients in order to collect medical history and predict the potential complications of drug therapy

**Description of curriculum of the discipline   "Clinical Pharmacology" for students of the specialties 7.110101 "Medical care" Qualification - physician.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| The structure of the discipline | The number of hours, of them: | | | | Year of study | Type of control |
| Total | In classroom (Auditorium) | | IWS |
| Lectures | Practical classes |
|  | 45 | 0 | 30 | 15 | 5 |  |
| ECTS  Credits | 1,5 |  |  |  |  |  |
| Module 1: | 45  hours | 0 | 30 | 15 |  | Current and final (standard) |

**3.Program contents**

**Topic 1.**

**The object and purpose of clinical pharmacology. The main statements of the pharmacokinetics and pharmacodynamics.**

**Clinical - pharmacological characteristics of drugs that affect on lipid metabolism**

Definition of "clinical pharmacology". Methods of monitoring the effectiveness and safety of using of various drugs.

Route of administration, distribution, biotransformation, excretion of drugs. The mechanism of action of drugs and their pharmacological effects and changes in the state of functions in response on the drug’s effects.

Classification of lipid-lowering drugs. Justification of the choice of the drug depending on the class of dyslipidemia. Dose regimen, interaction with other groups of drugs. Evaluating the effectiveness and safety of use. Side effects of drugs.

**Topic 2.**

**Clinical and pharmacological characteristics antianginal and anti- ischemic drugs.**

Classification of antianginal drugs. Features of a combined use of drugs (organic nitrates, ß-blockers and calcium channel blockers). Dose regimen. Indications and contraindications for prescribing. Factors that reduce resistance to drugs in this group. Methods for evaluating the effectiveness and safety of treatment.

**Topic 3.**

**Clinical and pharmacological characteristics of drugs affecting on the clotting ability of blood.**

Drugs that affect on blood coagulation and fibrinolysis, agents that promote adhesion and platelet aggregation, agents that enhance the formation of fibrin clot, inhibitors of fibrinolysis. Antithrombotic drugs: antiplatelet agents, agents that prevent the formation of blood fibrin clots (anticoagulants of direct and indirect action). Drugs that activate the fibrinolytic system. Methods and criteria for evaluation of efficacy and safety of drug therapy. Possible complications of drug treatment of blood disorders. Diagnosis, prevention and correction of adverse reactions.

**Topic 4.**

**Clinical and pharmacological characteristics of antihypertensive drugs.**

The principles of treatment of hypertension. Classification of antihypertensive drugs. Justification of the choice of the drug depending on the stage and degree of hypertension and type of haemodynamics. Characteristics of the drugs of first and second line. Dose regimen. Comparative characteristics of drugs, depending on the effectiveness and on the principle of choice, compatibility agents in different variants of flow and the presence of comorbidity. Evaluating the effectiveness and safety of use. The choice of drug and dose regimen depending on age, pregnancy.

**Topic 5.**

**Clinical and pharmacological characteristics of antiarrhythmic drugs.**

Classification of antiarrhythmic drugs. Comparative characteristics of certain pharmacological groups. Features of the choice of a drug to relieve arrhythmia episodes and their preventive therapy in specific situations. The role of the drugs affecting on electrolyte metabolism. The role of cardiac glycosides in combating arrhythmias. Dose regimen. The interaction of one antiarrhythmic drug with another during combination therapy and with drugs of other groups. Evaluation of the efficacy and safety of their applications.

**Topic 6.**

**Clinical and pharmacological characteristics of drugs that affect on bronchial patency. Anti-inflammatory medicines.**

Classification of drugs affecting on the bronchial patency. Pharmacokinetics and pharmacodynamics. Dose regimen. Features of their combined use with glucocorticoids. Therapeutic efficiency of ß2 agonists, M-cholinoblockers, methylxanthines. The choice of bronchodilator drug when removing an asthma attack and in case of systematic treatment of COPD, including comorbidities. Comparative characteristics of their therapeutic value. Side effects of drugs, the advantages and disadvantages of various pharmacological groups. Methods for assessing the efficacy and safety of treatment with regard to the degree of airflow obstruction, mucus viscosity, state of central and peripheral haemodynamics.

The classification of steroidal and non-steroidal anti-inflammatory drugs. Modern views on the mechanism of action. Comparative characteristics of anti-inflammatory action of drugs. Indications and contraindications for use. Dose regimen. Schemes of prescribing of glucocorticoids. Compatibility of drugs in combination therapy of diseases. Side effects, methods of monitoring of the effectiveness and safety of treatment.

**Topic 7.**

**Clinical and pharmacological characteristics antiallergic medicines.**

The classification antiallergic drugs:antihistamine drugs, drugs that impede the release mediators of immediate type from mast cells, drugs that reduce penetration of blood vessels. Pharmacological effects. Application. Side effects. Contraindications for use. Clinical guidelines.

**Topic 8.**

**Clinical and pharmacological characteristics of hormonal drugs.**

Classification hormones and hormonal drugs. Steroid hormones, estrogens, androgens and their role in Hormonal replacement therapy. Anti estrogens, antiandrogens, indications and contraindications to their use. Hormonal contraceptives, their role in family planning. Monitoring the effectiveness, safety and principles of choice of hypoglycemic drugs. Insulin drugs, their application schemes and features, depending on the duration of action. Preparations of thyroid hormones. Indications, contraindications and side effects for using antithyroid drugs. Mechanism of action and key pharmacodynamic effects of glucocorticoids. Indications to prescribing, dosage regimen of glucocorticoids. Withdrawal (abstinence) syndrome.

**Topic 9.**

**Clinical and pharmacological characteristics of antimicrobial drugs.**

The principles of modern antibiotic therapy. Classification of antibiotics. The role of antibiotics and chemotherapeutic drugs for infectious and inflammatory diseases. The choice of antibacterial agents in accordance with the sensitivity of microorganisms and localization processes, the severity of the disease. Side effects and contraindications to antibiotic therapy. The choice of antibacterial drug based on pharmacokinetics. Age features of antibiotic therapy. Antibiotic resistance and ways to overcome it. Antiviral agents (vaccines, interferons, synthetic antivirals). Antifungal agents (antifungal antibiotics, imidazole, triazoles, etc.).

Prevention of HIV infection, preventing transmission from mother to child, diagnosis, treatment and social - psychological support for people living with HIV. Characteristics of the antiretroviral drugs. Principles of Antiretroviral Therapy (HAART) Formation of adherence to HAART.

**Topic 10.**

**Clinical and pharmacological characteristics of drugs affecting the digestive tract function.**

Defining the principles of treatment for stomach ulcers and 12 duodenal ulcer, gastritis, colitis, enteritis, irritable bowel syndrome, gastro-oesophageal reflux disease. The value of drugs that affect the secretory function of the stomach. Helicobacter therapy. Gastracid protectors. Drug regulation of motility of the gastrointestinal tract. The importance of symptomatic drugs, antiemetic and vomiting, laxatives and antidiarrheal. Dose regimen.

**Topic 11.**

**Clinical and pharmacological characteristics of drugs that affect the hepatobiliary system and pancreas.**

The principles of cholecystitis, hepatitis and pancreatitis therapy. Justification of selection and characteristics of the enzyme drugs and drugs with antienzyme properties. Features of the combined use of antispasmodic drugs. Pharmacokinetics and pharmacodynamics of drugs that affect liver function. Indications and contraindications for their use. Side effects. Dose regimen. Evaluation of efficacy and safety of their applications.

**Topic 12.**

**Interaction of drugs, types of medication side effects, complications of drug therapy.**

The interaction of drugs during complex medical treatment: types and nature of interactionmanifestation. Clinical manifestations of drugs interaction. Combined drugs. Advantages and disadvantages of the combined drugs. types of medication side effects, complications of drug therapy.

Classification of the drug’s side effects, the main types of side effects and complications of medical therapy. Adverse reactions associated with pharmacological activity. Toxic complications. Violation of the immunological properties of the organism. Allergic and pseudoallergic reactions. Idiosyncrasy. Clinical manifestations of the drug’s side effects.

The general concept of a medical illness. Causes, options and main clinical manifestations of medical illness. Syndromes that occur in response to the use of drugs as a manifestation of a medical disease (Lyell's Syndrome, Steven-Johnson’s Syndrome). Place of polypharmacy among the causes of complications of medical therapy.

**3. STRUCTURE OF TEST CREDIT - MODULE 1:**

**"Clinical Pharmacology".**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | **Lectures** | **Practical classes** | **IWS** | **Individual IWS** |
| 1. Subject and objectives of clinical pharmacology. The main statements of the pharmacokinetics and pharmacodynamics. Clinical and pharmacological characteristics of drugs that affect lipid metabolism. | 0 | **4** | 1 |  |
| 1. Clinical and pharmacological characteristics of antianginal and anti-ischemic drugs. | 0 | **4** | 1 |  |
| 3. Clinical and pharmacological characteristics of drugs that affect the blood's ability to clot. | 0 | - | 1 |  |
| 4.Clinical and pharmacological characteristics of antihypertensive drugs. | 0 | **4** | 1 |  |
| 5. Clinical and pharmacological characteristics of antiarrhythmic drugs. | 0 | - | 1 |  |
| 6. Clinical and pharmacological characteristics of drugs affecting the bronchial passability. Antiinflammatory drugs. | 0 | **4** | 1 |  |
| 7. Clinical and pharmacological characteristics of antiallergic drugs. | 0 | - | 1 |  |
| 8. Clinical and pharmacological characteristics of hormonal drugs | 0 | 4 | 0 |  |
| 9. Clinical and pharmacological characteristics of antibacterial drugs | 0 | **4** | 1 |  |
| 10. Clinical and pharmacological characteristics of drugs affecting the digestive tract function. | 0 | **2** | 1 |  |
| 11. Clinical and pharmacological characteristics of drugs that affect the hepatobiliary system and pancreas. | 0 | **2** | 1 |  |
| 12. The interaction of drugs, types of medication side effects, complications of drug therapy | 0 | - | 1 |  |
| Preparation and writing of a "Protocol of efficacy and safety of drugs" | - | - | - | **2** |
| The final module control | 0 | **2** | 2 |  |
| Total, hours- 45 | 0 |  | 15 | |
| Credits ECTS – 1,5 |  |  |  |  |

**4. TOPICAL PLAN OF PRACTICAL CLASSES**

|  |  |  |
| --- | --- | --- |
| ***№*** | ***Topic*** | ***Hours*** |
| 1. | The object and purpose of clinical pharmacology. The main statements of pharmacokinetics and pharmacodynamics. Clinical and pharmacological characteristics of drugs that affect lipid metabolism. | 4 |
| 2 | Clinical and pharmacological characteristics of antianginal and anti-ischemic drugs. | 4 |
| 3 | Clinical and pharmacological characteristics of antihypertensive drugs. | 4 |
| 4 | Clinical and Pharmacological characteristics of drugs that affect bronchial patency. Anti-inflammatory drugs. | 4 |
| 5 | Clinical and pharmacological characteristics of hormonal drugs. | 4 |
| 6 | Clinical and pharmacological characteristics of antibacterial drugs. | 4 |
| 7 | Clinical and pharmacological characteristics of drugs affecting the digestive tract function. Clinical and pharmacological characteristics of drugs that affect the hepatobiliary system and pancreas. | 4 |
| Final module control | 2 |
|  | **Total** | 30 |

**5. Types of independent work of students (IWS) and its control**

|  |  |  |  |
| --- | --- | --- | --- |
| ***№*** | ***Topic*** | ***Hours*** | ***Type of control*** |
| **1.** | Preparation for practical classes. | **7** | Current control on practical classes |
| **2.** | Preparation and writing "Protocol of efficacy and safety of drugs" | **2** | Protection of  "Protocol ..."  during practical classes. |
| **3.** | Working topics that are not included into the plan of classes:   1. Clinical and pharmacological characteristics of drugs affecting the clotting ability of blood 2. Clinical and pharmacological characteristics of antiarrhythmic drugs 3. Clinical and pharmacological characteristics of antiallergic medicines 4. Interaction of drugs, types of medication side effects, complications of drug therapy | **1**  **1**  **1**    **1** | Theses or abstracts    Theses or abstracts  Theses or abstracts  Filling the "Notice AE \ SA drugs." Form  Number 137 \ 0 |
| **4.** | Preparation for final module control. | **2** | Final module control |
|  | **TOTAL** | **15** |  |

**6. Distribution of points assigned to students**

|  |  |  |
| --- | --- | --- |
|  | **Module**  **(Current educational activity)** | **Score** |
|  | Topic 1 | **16** |
| Topic 2 | **16** |
| Topic 3 | **16** |
| Topic 4 | **16** |
| Topic 5 | **16** |
| Topic 6 | **16** |
| Topic 7 | **16** |
|  | **Individual IWS** | **8** |
| **Total** | **120** |
| **Final control** | **80** |
| **Total score** | **200** |

Note: for learning topics by traditional system marks are appropriated to a student:

rating of "5" - 16 points

rating of "4" - 13 points

rating of "3" - 10 points

rating of "2" - 0 points.

Obligatory is to write “The Protocol of efficacy and safety of drugs”, which will be assessed by point scale:

Rating of "5" - 8 points,

rating of "4" - 5 points

rating of "3" - 3 points

rating of "2" - 0 points.

The maximum number of points for current educational activity of student is 120 points, minimum - 73.

A student is admitted to the final module control if he does the conditions of the curriculum and if for current educational activity he scored at least 73 points.

Final module control is counted to a student if he shows possession of practical skills and gets on the test control of theoretical training at least 50 points.

**7. Forms of control.**

In order to intensify the educational process, systematic learning, establishing feedback from every student, monitoring and adjustment the educational process in time, increase motivation, reduce missed classes, reduce students responsibility for the results of academic success of each student's, clinical pharmacology is evaluated by a rating system.

Module’s score is determined by the assessments of the current control and the final module control

The maximum number of points during a module - 200. For the current educational activity - 120 points, and according to the final module control - 80 points.

Current control is carried out on each class according to specific objectives of the topic. It is recommended to use at all practical classes an objective control of theoretical preparation and control of practical skills.

During mastering of every topic of the module a student is estimated for current educational activity by the four-point scale (traditional) scale with grades, which are then converted into points according to the number of topics in the module.

The maximum number of points that a student can get at module is calculated by multiplying the number of points that correspond to the estimation of "5", the number of topics in the module, and the maximum score writing "Protocol efficacy and safety of drugs" and is 120 points.

The minimum number of points that can be collected by student during a module is calculated by multiplying the number of points that correspond to the estimation of "3", the number of topics in the modules and the minimum score writing "Protocol efficacy and safety of drugs" and is 73 points.

**Evaluation of independent work.**

Evaluation of independent work of students, which is foreseen in a theme next to audience work is carried out during the current control of topic on the proper auditorium class. Evaluation of topics that are submitted only on independent work and are not included in the topics of audience lessons is controlled at the final module control.

**The final module control.**

The final module control is carried out on completion of the module studying. To the final control are allowed students who complete all work provided in the curriculum and who scored during module studying points not less than the minimum (73 points). The form of the final control should be standardized and include control of theoretical and practical training.

|  |  |
| --- | --- |
| **ECTS Grade** | **Statistical index** |
| А | The best 10% |
| В | Following 25% |
| С | Following 30% |
| D | Following 25% |
| E | Latest 10% |

According to the number of points obtained an achievement statement of student in the discipline is filed up (Form EH-3) and the addition of a personal account of the student who doesn’t fulfill the requirements of subject’s curriculum ("F", "FX"). Grade "FX" assigned to students who have been admitted to the control module, but do not pass it. Grade "F" assigned to students who are not admitted to testing. Grade "FX" and "F" ("2") assigned to students who are not enrolled at least one module of the course at the end of its study.

ECTS grade is converted to a traditional four-point scale as follows:

|  |  |
| --- | --- |
| **ECTS GRADE** | **Four-point rating scale** |
| **A** | **5** |
| **B,C** | **4** |
| **D,E** | **3** |
| **FX,F** | **2** |

With the permission from a rector for educational work a student can increase his (her) grade for the discipline by retaking of final module control (no more than three times over the entire period of study).

**7. The list of questions for the final module control**

1. Classification of lipid-lowering drugs.

2. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the prescribing of statins.

3. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the prescribing of fibrates.

4. Omega-3 polyunsaturated fatty acids. The mechanism of action. Features of the application.

5. Classification of dyslipidaemia. Differentiated approach to the use of lipid-lowering drugs.

6. Groups of drugs belonging to the antianginal and anti-ischemic drugs.

7. The mechanism of action, pharmacological effects, indications and contraindications for nitrates.

8. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the prescribing of beta-blockers.

9. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the prescribing of calcium channel blockers.

10. Classification of calcium channel blockers. Features of the application. Dosage.

11. Classification of beta-blockers. Features of the application. Dosage.

12. Antiplatelet drugs. Classification. Mechanisms of action. Methodsof dosage.

13. Thrombolytic agents. Indications and contraindications to thrombolysis. Schemes of prescribing.

14. Anticoagulants. Classification. Mechanisms of action. Side effects.

15. Classification of antihypertensive drugs.

16. The differentiated approach to the appointment of antihypertensive therapy for concomitant diseases (diabetes, asthma, pregnancy, advanced age, pheochromocytoma, etc.).

17. The mechanism of antihypertensive action, pharmacological effects, side effects of calcium antagonists. Dosage

18. The mechanism of antihypertensive action, pharmacological effects, side effects in the appointment of beta-blockers. Dosage.

19. The mechanism of antihypertensive action, pharmacological effects, indications and contraindications, side effects of angiotensin-converting enzyme. Dosage.

20. The mechanism of antihypertensive action, pharmacological effects, indications and contraindications, side effects of angiotensin II receptor antagonists. Dosage.

21. The principles of combined use of antihypertensive agents.

22. Classification of antiarrhythmic drugs.

23. The differentiated approach to the prescribing of antiarrhythmic drugs.

24. Classification of cardiac glycosides. Dosage.

25. The cardiac effects of cardiac glycosides.

26. Indications of cardiac glycosides.

27. Clinical and ECG signs of cardiac glycosides intoxication.

28. Non-glycoside inotropic drugs. Indications for administration.

29. Classification of diuretics.

30. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications to loop diuretics.

31. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the appointment of thiazide and thiazide-like diuretics. Dosage.

32. The mechanism of action and pharmacological effects K+-sparing diuretics. Indications and contraindications for use. Daily dosage.

33. The differentiated approach to the choice of diuretic drug, depending on the presence of comorbidities (effects on lipid and carbohydrate metabolism).

34. Classification of drugs affecting the bronchial patency.

35. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for prescribing β2 agonists of short action. Dosage.

36. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for prescribing long-acting β2 agonists. Dosage.

37. Methylxanthines, mechanism of action, pharmacological effects, side effects. Dosage.

38. Glucocorticoids. Advantages of inhaled drugs. Dosing regimens.

39. Adverse reactions occurring with prolonged use of glucocorticoids.

40. Terms of cancellation of glucocorticoids.

41. Antitussive agents. Mechanisms of action. Dosing regimens.

42. The interaction of medications.

43. The types of side effects.

44. Classification of NSAIDs.

45. Mechanisms of action, pharmacological properties of NSAIDs.

46. Indications and contraindications. Side effects with the use of NSAIDs.

47. Dosage of NSAIDs.

48. The most frequent mistakes in the appointment of antibacterial drugs.

49. Allergic reactions to the administration of antibacterial agents. Clinical manifestations.

50. Classification. The spectrum of activity. The mechanism of action. Features of the application of penicillin. Dosage.

51. Classification. The spectrum of activity. The mechanism of action. The application features of cephalosporins. Dosage.

52. Classification. The spectrum of activity. The mechanism of action. The application features of carbapenems. Dosage.

53. Classification. The spectrum of activity. The mechanism of action. The application features of aminoglycosides. Dosage.

54. Classification. The spectrum of activity. The mechanism of action. The application features of fluoroquinolones. Dosage.

55. Classification. The spectrum of activity. The mechanism of action. The application features of macrolides. Dosage.

56. Drugss stimulating the motor function of the gastrointestinal tract. Classification.

57. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the prescribing of selective dopamine receptor blockers. Dosage.

58. Clinical and pharmacological characteristics of drugs that suppress the gastrointestinal motility - loperamide. Dosage.

59. Drugss of spasmolytic activity, mechanisms of action, pharmacological properties, indications, contraindications, dosage.

60. Drugs with antisecretory activity.

61. Classification, mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the appointment of proton pump inhibitors. Dosage.

62. Classification, mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the appointment of H2 histamine receptor blockers. Dosage.

63. The mechanism of action of antacids. Pharmacological properties. Dosage.

64.Cytoprotectors. Pharmacological features. Dosage.

65. Hepatoprotectors. Classification. The mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for administration. Dosage.

66. Pancreatic enzymes. Pharmacological features. Indications. Side effects. Daily dosage.

67. Complications of drug therapy.

68. Classification, mechanism of action, pharmacokinetics and pharmacodynamics, indications and contraindications for the appointment of anti-allergic agents. Dosage.

69. Classification of insulin. Indications, contraindications, side effects, dosage regimen.

70. Oral hypoglycemic agents. Classification, mechanism of action, dosage.

71. Androgens. Pharmacological properties. Dosage.

72. Estrogens. Pharmacological properties. Dosage.

73. Antiandrogens, antiestrogens. Indications, dosing, application.

74. Hormonal contraceptives. Pharmacological properties. Features of dosage.

75. Drugs of thyroid hormones. Indications and contraindications, mechanism of action, application.

76. Antithyroid drugs. Pharmacological features. Side effects, application principles.

**7.1 The list of drugs for the final module control**

**Lipid-lowering drugs**

|  |  |
| --- | --- |
| Atorvastatinum | Tabl. 10 mg |
| Nicotinic | Fl. 1%; Tabl. 50 mg |
| Rozuvastatinum | Tabl. 10, 20 mg |
| Simvastatinum | Tabl. 10, 20 mg |
| Fenofibrate | Caps. 0,1 g |

**Nitrates and sydnonims**

|  |  |
| --- | --- |
| Isosorbidi mononitratum | Caps**.**  40; 60 mg |
| Isosorbidi dinintratum | Tabl. 20, 40 mg |
| Nitroglycerinum | Tabl. 5 mg; Fl. 1% (спирт)–5мл; Л. 1% |
| molsidominum | Tabl. 0,002 |

**Calcium antagonists**

|  |  |
| --- | --- |
| Amlodipinе | Tabl. 5; 10 mg |
| Vеrapamil | Tabl. 40; 80 mg |
| Diltіazem | Tabl. 30; 60 mg |
| Nifedipine | Caps**.** 10; 20 mg |

**Adrenergic receptor blockers**

**(α- and β-)**

|  |  |
| --- | --- |
| Atenolol | Tabl. 0,1; 0,05 g |
| Bisoprolol | Tabl. 2.5; 5; 10 mg |
| Doxazozin | Tabl. 2; 4 mg |
| Carvedilolum | Tabl. 12,5; 25; 50 mg |
| Metoprololum | Tabl. 50 mg |
| Nebivololum | Tabl . 5 mg |

**F-Channel blockers**

|  |  |
| --- | --- |
| Ivabrabine | Tabl. 5; 7,5 mg |

**ACE inhibitors**

|  |  |
| --- | --- |
| Enalapril | Tabl. 5; 10; 20; 40 mg |
| Сaptopril | Tabl. 12,5; 25; 50; 100 mg |
| Lizinopril | Tabl. 10; 40 mg |
| Perindopril | Tabl. 4; 8 mg |
| Ramipril | Tabl. 12,5; 25; 5; 10 mg |
| Fozinopril | Tabl. 10; 40 mg |

**Angiotensin-ІІ receptor inhibitors**

|  |  |
| --- | --- |
| Valsartan | Tabl. 80 mg, 160 mg |
| Irbesartan | Tabl. 75; 150 mg |
| Candesartan | Tabl. 4.8; 16 mg |
| Losartan | Tabl. 10; 40 mg |
| Telmisartan | Tabl. 80 mg |

**Central sympatholytics**

|  |  |
| --- | --- |
| Methyldopa | Tabl. 250 mg |
| Clophelinum | Tabl. 0.075; 0,15 mg; Amp. 0,01 % -1 ml |

**Antiarhythmic drugs**

|  |  |
| --- | --- |
| Aethacizinum | Tabl. 25; 50 mg |
| Amidaronum | Tabl. 200 mg |
| Lidocaine | Amp. 0.5; 1; 2; 5; 10 % |
| Propafenon | Tabl. 150 mg |
| Sotalol | Tabl. 80; 160 mg |
| Procainamide | Tabl. 0,25 g, 10 % - 5 ml |

**Cardiac glycosides and non-glycoside inotropic drugs**

|  |  |
| --- | --- |
| Digoxinum | Tabl. 0.125; 0,25 mg, Amp. 0,025% - 1 ml |
| Dobutamine | Fl. 5 %- 55 ml;  Fl. 0,1; 0,25 |
| Dopamin | Amp. 50; 200 mg №5 |
| Strophanthinum | Amp. 0.025 % - 1ml |

**Diuretic drugs**

|  |  |
| --- | --- |
| Hydrochlorotiazide | Tabl. 25 mg; 100 mg |
| Indapamid | Tabl. 1,5; 2,5 mg |
| Spironolactone | Tabl. 25; 50; 100 mg |
| Torasemidum | Sol. for inj. 10 mg, Tabl. 10 mg |
| Furosemide | Tabl. 40 mg, Amp. 20 mg |

**Drugs affecting bronchial permeability**

|  |  |
| --- | --- |
| Epinephrinum | Amp. 0,18 % 1 ml №10 |
| Ambroxolum | Tabl. 30 mg; Syrup. 15 mg-5 ml; Amp. 0,75% |
| Acetylcystein | Tabl. 100 mg; Caps. 200; 400 mg |
| Euphyllinum | Tabl. 150 mg; Amp. 2,4% № 5;10 |
| Teotropii bromidum | Aer. 18 mcg |
| Natrii nedocromili | Aer. 1 dose - 2 mg |
| Salbutamolum | Aer. 200 doses. fl; Tabl.2;4 mg |
| Salmeterolum | Aeros. For inj. 25 mcg -120/dose |
| Fenoterolum | Aeros. 0,1 mg |
| Beclometasonum | Aeros. 50, 100, 250 mcg\dose fl. 200 doses |
| Montelukast | Tabl. 10 mg |

**Anti-inflammatory drugs**

|  |  |
| --- | --- |
| Hydrocortisone | Inj. 100;500 mg; Oint. 0,1;  1; 2,5 %; Creme 0,1% |
| Dexamethasonum | Tabl. 500 mg; Amp. 4 mg – 1 ml |
| Natrii diclofenacum | Tabl. P.o. 25, 50 mg №30 |
| Meloxicam | Tabl. 7,5; 15 mg; Supp. 7,5; 15 mg |
| Methylprednisolonum | Tabl. 4,8 mg; Amp. 0,4 % |
| Nimesulide | Tabl. 100 mg; Fl. susp. 1% |
| Prednisolonum | Tabl. 5 mg; Amp. 25; 30 mg – 1 ml |
| Rofecoxib | Tabl. 25; 50 mg |
| Celecoxib | Caps. 100; 200 mg |
| Acaetominofen | Tabl. 500 mg, Caps. 500 mg |

**Antibiotics**

|  |  |
| --- | --- |
| Аzithromycin | Tabl. 125; 500 mg; Caps. 250 mg;  Syrup. 100; 200 mg in 5 ml |
| Amikacinum | Amp. 50; 125; 250; 500 mg – 1ml |
| Amoxycillinum | Tabl. 250; 500 mg |
| Acyclovirum | Tabl. 200, 400, 800 mg |
| Benzylpenicillin | fl. 25 K; 50 K; 100 K; 1 m. IU |
| Vancomycin | Fl. 500; 1000 mg |
| Gentamycin | Amp. 10; 20; 40 mg - 1 ml;  Oint. 0,1%; Aerosol. 0,1 % |
| Doxycycline | Caps. and Tabl. 50; 100; 200 mg |
| Imipenem | Fl. 500 mg intra m. |
| Interferonum alfa | Sol for inj. 10,18, 25,30, 60 m. IU |
| Clarithromycin | Tabl. 250 mg; Fl. 500 mg |
| Clindamycin | Caps. 75; 150; 300 mg; Amp. 2;4 ml |
| Levofloxacin | Tabl. 250; 500 mg;  Fl. 5 mg in 1 ml - 100 ml |
| Rifampicin | Caps.150; 300 mg; Amp. Intra m. 125 mg – 1,5 ml; 250 mg-3 ml; intra v. 500 mg – 10 ml |
| Ribavirinum | Caps. 100, 200 mg |
| Streptomycin | Fl. 500; 1000 mg |
| Sulfadimethoxine | Tabl. 200; 500 mg |
| Sulfasalazin | Tabl. 500 mg |
| Tetracycline | Caps.250; 500 mg; Ointm. 300 mg |
| Tobramycin | Amp.10; 20; 40 mg–1 ml; |
| Fluconanazolum | Caps. 50, 100, 150 mg |
| Cefalexin | Tabl. 50; 250; 1000 mg; Caps. 250; 500 mg |
| Cefepime | Fl. 500 mg; 1; 2 g |
| Cefotaxime | Fl. 250; 500 mg; 1; 2 g |
| Ceftriaxone | Fl. 250; 500 mg; 1; 2 g |
| Cefuroxime | Fl. 250; 750; 1500 mg;  Tabl. 125; 250; 500 mg |
| Ceftazidimum | Pow. For inj. Sol. 0,5, 1,2 gr. fl. |
| Ciprofloxacin | Tabl. 250; 500; 750 mg;  Sol. For inj. 10; 20 mg - 1 ml |

**Drugs affecting Gastrointestinal tract functions**

|  |  |
| --- | --- |
| Atropine sulfas | Amp. 0,1 %; Tabl. 0,5 mg |
| Bismuthi subcitrate | Tabl. 0,12 |
| Domperidon | Tabl. 10 mg |
| Drotaverinum hydrochloridum | Tabl. 40 mg; Amp. 2% - 2 ml |
| Lactulose | Syrup 200 ml |
| Loperamide | Tabl. 2 mg |
| Mebeverinum hydrochloridum | Tabl. 200 mg |
| Metoclorpramide | Tabl. 10 mg; Amp. 2 ml |
| Omeprzole | Caps. 20 mg |
| Pirenzepine | Tabl. 25; 50 mg; Amp. 0,5 % |
| Prifinium bromidum | Tabl. 30 mg, syrup. |
| Rabiprozole | Tabl. 20 mg |
| Sucralfate | Tabl. 500; 1000 mg |
| Famotidine | Tabl. 20; 40 mg; Fl. 0,02 g |

**Drugs affecting hepatobiliary system and pancreas**

|  |  |  |  |
| --- | --- | --- | --- |
| Ademethyoninum | | | Fl. 400 ml |
| Essential forte H | | | Caps.300 mg; Amp. 250 mg–5 ml |
| Octreotidum | Amp. 100 | | |
| Pancreatin | Tabl. 0.25 | | |
| Silimarin | | | Tabl. 0,04 |
| Ursodesoxycholine acid | | | Caps. 250 mg |
| Cholagolum F | | | Fl. 10 ml |
| Citrarginine | | | Amp. 10 ml |

**Drugs affecting the coagulation system**

|  |  |
| --- | --- |
| Alteplase | Fl. 50 mg № 2 |
| Aminocapronic acid | Fl. 5 % - 100 ml |
| Acetylsalicylic acid | Tabl.. 100; 300; 325; 500 mg;  Tabl. sol. 350 mg; |
| Warfarinum | Tabl. 1; 3; 5 mg |
| Heparin sodium | Fl. And Amp. 5 тис.; 25 тис. IU – 1 ml; Gel 1000 IU - 1 gr. |
| Etamsylate | Tabl.0,25 №100  Amp. 2ml -12.5% sol. №50 |
| Enoxaparinum | Syr.0.4; 0.8 |

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**Appendix**

**The study protocol of effectiveness and safety of administering drugs**

**(According Supervision)**

**Patient’s name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Age\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**The date of birth\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Duration of treatment in the hospital before the Supervision\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Diagnosis:**

**Basic :**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Complications of underlying disease:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Additional diagnosis:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Supervisor: head of\_\_\_\_\_\_\_\_\_\_\_\_\_\_course**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_department**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Assessment of patient dynamics during treatment.**

**The history of life.**

History of life**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Postponed diseases\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Surgeries, Injuries \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Wounds\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
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Occupational Hazards\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cardiovascular system**

**Complaints of patient**

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrives | During Supervision |
| Pain in the area of the heart :during the day (frequency) |  |  |
| At night |  |  |
| Presence of continuous pain |  |  |
| Quantity of Nitroglycerin tablets a day for supervision |  |  |
| The nature of pain: of stabbing pain |  |  |
| pressing pain |  |  |
| The features of occurrence during exercises |  |  |
| Other reasons (specify) |  |  |
| Complaints on arrhythmia (frequency of attacks) |  |  |
| “Loss” of strikes |  |  |
| Attacks of atrial fibrillation ( tahy, normo-, brady- attack, permanent form) |  |  |
| Post-form of arterial fibrillation (tahy-, normo-, brady-) |  |  |
| Bradycardia (frequency of attacks) |  |  |
| Weakness |  |  |
| Dyspnea: during exercises |  |  |
| At rest |  |  |
| Asthma attacks |  |  |
| Swelling |  |  |
| Fluctuations in BP |  |  |
|  |  |  |
|  |  |  |

**History of disease**

The beginning of the onset of symptoms, the dynamics of disease progression\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The presence of complications:

Acute myocardial infraction\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Stroke\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Recently features of dynamics\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Examinational data**

|  |  |  |
| --- | --- | --- |
| BP |  |  |
| Heart rate |  |  |
| The rhythm of the heart: correct |  |  |
| Extrasystole, frequency in 1 minute |  |  |
| Atrial fibrillation (tahy-, normo-, brady-) |  |  |
| Cardiac murmur |  |  |
| Swelling: no swelling |  |  |
| localization |  |  |
| Mucous membranes color: pink |  |  |
| cyanosis |  |  |

**Data of additional observations**

ECG (dynamics) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Blood clotting \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Cholesterol\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Beta-lipoproteins \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Echocardiography \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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5. Consultations

Ophthalmologist\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Respiratory system**

1. Complaints of patient

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrives | During supervision |
| Cough The frequency of attacks |  |  |
| Presence of sputum |  |  |
| The nature of sputum mucous |  |  |
| purulent |  |  |
| Time of occurrence: In the morning |  |  |
| Afternoon |  |  |
| At night |  |  |
| Wheezing No |  |  |
| Dry |  |  |
| Pain in the chest when breathing |  |  |
| Weakness |  |  |
| Dyspnea |  |  |
| Asthma with bronchial obstruction syndrome  Frequency in the afternoon |  |  |
| At night |  |  |
| The amount of inhaled bronchodilators daily |  |  |

History of life \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Postponed diseases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Surgeries, Injuries \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Wounds \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
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Occupational Hazards \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Examinational data**

|  |  |  |
| --- | --- | --- |
| Frequency of breathing |  |  |
| Wheezing: no |  |  |
| dry |  |  |
| wet |  |  |
| single |  |  |
| multiple |  |  |
| crepitation |  |  |
| Relaxation of breathing (localization) |  |  |
| Percussion data lung sounds |  |  |
| Dulling sound |  |  |

**Additional observations data**

X-rays or fluoroscopy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Spirography \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Gastrointestinal tract**

1. Complaints of patient

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrived | During Supervision |
| Pains: no |  |  |
| In epigraphus |  |  |
| In the right upper quadrant |  |  |
| In the left upper quadrant |  |  |
| In the umbilical area |  |  |
| All over the stomach |  |  |
| another |  |  |
| Time and features of the occurrence: before food |  |  |
| After food |  |  |
| Is not associated with food intake |  |  |
| In the afternoon |  |  |
| At night |  |  |
| Character of pain : acute |  |  |
| dull |  |  |
| cutting |  |  |
| prickly |  |  |
| Nausea |  |  |
| Vomiting (multiplicity/day |  |  |
| Bitterness in the mouth |  |  |
| The nature of the stool: constipation |  |  |
| Diarrhea |  |  |
| Bloating |  |  |
|  |  |  |
|  |  |  |

History of disease

The beginning of the onset of symptoms, the dynamics of disease progression \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The presence of complications:

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Recently features of dynamics \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Examinational data

|  |  |  |
| --- | --- | --- |
| Prevalence by palpation: no |  |  |
| In epigraphus |  |  |
| In pyrrolo-duodendal area |  |  |
| In the right upper quadrant |  |  |
| In the left upper quadrant |  |  |
| In the umbilical area |  |  |
| In the pubic area left, right |  |  |
| All over the stomach |  |  |
| Positive symptom |  |  |
|  |  |  |
|  |  |  |

**Data of additional observations**

Complete blood count: RBC\_\_\_\_\_\_\_Hb\_\_\_\_\_\_\_\_\_WBC\_\_\_\_\_\_\_\_\_\_\_ESR\_\_\_\_\_\_\_\_\_\_\_

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Hepatic complex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Ultrasound of liver, gallbladder, pancreas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Musculoskeletal system**

**Complaints of patient**

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrived | During Supervision |
| Joint pain always |  |  |
| Under load |  |  |
| Localization of pain: all large joints |  |  |
| Small joints |  |  |
| Separate (which) joints |  |  |
| Backbone (departments) |  |  |
| Severity of pain by 5 (10) – point scale |  |  |
| Morning stiffness of the joints (duration) |  |  |
| Swelling of joints (which) |  |  |

**History of disease**

The beginning of the onset of symptoms, the dynamics of disease progression \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The presence of complications:

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Recently features of dynamics \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Examinational data**

|  |  |  |
| --- | --- | --- |
| Deformation of joints (which) |  |  |
| Swelling (which |  |  |

**Additional observations data**

Radiography\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Consultation of orthoped-traumatologist**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Urinary system**

**Complaints of patient**

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrived | During Supervision |
| Enuresis |  |  |
| Difficulty in urination |  |  |
| Increase of urination: no |  |  |
| In the afternoon |  |  |
| At night (number of getting up) ) |  |  |
| Pain in the kidney area |  |  |
|  |  |  |
|  |  |  |

**History of didease**

The beginning of the onset of symptoms, the dynamics of disease progression \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The presence of complications:

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Recently features of dynamics \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Дані обстеження**

|  |  |  |
| --- | --- | --- |
| CVAT: negative |  |  |
| positive, left and right |  |  |

**Additional observations data**

Urinalysis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Hepatic complex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Ultrasound of kidneys, bladder, prostate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Urologist consultation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**The state of cerebral circulation and CNS**

**Complaints of the patient**

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrived | During Supervision |
| Dizziness |  |  |
| Headache: Localization |  |  |
| The time of occurrence |  |  |
| Drowsiness |  |  |
| Insomnia |  |  |
| Parkinson’s disease |  |  |
| Unsteadiness of gait |  |  |

**History of disease**

The beginning of the onset of symptoms, the dynamics of disease progression \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The presence of complications:

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Recently features of dynamics \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Additional observations data**

Rheoencephalography\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Ultrasound of the brain vessels \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Conclusion of neurologist**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**State of peripheral circulation**

**Complaints of the patient**

|  |  |  |
| --- | --- | --- |
| Complaints | When the patient arrived | During Supervision |
| Heaviness in the legs |  |  |
| Pain in the calf muscles: During walking |  |  |
| At rest |  |  |
| Distance, which the patient has done before appearance of pain in muscles |  |  |
| Pain in the feet |  |  |
| Coldness of feet |  |  |
| Cramps in the calf muscles |  |  |

**History of the disease**

The beginning of the onset of symptoms, the dynamics of disease progression \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The presence of complications:

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Recently features of dynamics \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Examinational data**

|  |  |  |
| --- | --- | --- |
| The presence of varicose vascular lesions |  |  |
| Color of the skin on feet |  |  |
| The presence of trophical disorders |  |  |

Rheovasography of lower extremities \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Consulting with surgeon\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Diagnosis**

Basic diagnosis:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Complications of underlying disease\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Additional diagnosis:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**The plan of treatment**

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**Characteristics of drugs prescribed to the patient**

**А**) Justification of prescription

|  |  |
| --- | --- |
| The drug, dosage form, dosage and frequency of admission | The purpose of prescription |
| A) The impact on underlying disease | |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| B) The effect on comorbidities | |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

B) Drugs safety assessment

|  |  |  |  |
| --- | --- | --- | --- |
| Drug | The main side-effects | Criteria of safety (The methods of control) | The presence in the patient |
| 1 | 1.  2.  3.  4. |  |  |
| 2 | 1.  2.  3.  4. |  |  |
| 3 | 1.  2.  3.  4.  5. |  |  |
| 4 | 1.  2.  3.  4. |  |  |
| 5 | 1.  2.  3.  4. |  |  |
| 6 | 1.  2.  3.  4. |  |  |
| 7 | 1.  2.  3.  4.  5. |  |  |
| 8 | 1.  2.  3.  4. |  |  |
| 9 | 1.  2.  3.  4. |  |  |
| 10 | 1.  2.  3.  4. |  |  |

Side effects observed in two or more drugs and that are likely to worsen in the case of their combined prescription to the patient

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Interaction of drugs that are prescribed to the patient**

Pharmacodynamics

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| № | Drug | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 |  | Х |  |  |  |  |  |  |  |  |  |
| 2 |  |  | Х |  |  |  |  |  |  |  |  |
| 3 |  |  |  | Х |  |  |  |  |  |  |  |
| 4 |  |  |  |  | Х |  |  |  |  |  |  |
| 5 |  |  |  |  |  | Х |  |  |  |  |  |
| 6 |  |  |  |  |  |  | Х |  |  |  |  |
| 7 |  |  |  |  |  |  |  | Х |  |  |  |
| 8 |  |  |  |  |  |  |  |  | Х |  |  |
| 9 |  |  |  |  |  |  |  |  |  | Х |  |
| 10 |  |  |  |  |  |  |  |  |  |  | Х |

«+» - The combination is effective and safe

«+/-» - In the case of combination the therapeutic effect enhances, but the side-effects may also enhance (specify which)

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

«-» - irrational combination (In your opinion)

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**Conclusion of evaluation of the interaction of drugs in the treatment of selected patient.**

The effectiveness of the drugs that are taken

Positive dynamics: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Negative dynamics (causes) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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No changes (causes) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**B)** Justification of prescription\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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C) Safety\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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D) Rationality of combinations\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Recommendations for ambulatory treatment**

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| Drug | Admission scheme+justification |
| Permanent admission at home | |
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| Duration of treatment which began in hospital | |
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