**Ministry of health of Ukraine**

**Kharkiv national medical university**

**Department of Internal Medicine No. 2, Clinical Immunology and Allergology named after academician L.T. Malaya**

**Syllabus of discipline**

**(Optional course)**

**“Drug Allergy in Clinical Practice”**

**for masters in the field of preparation 22 "Health"**

**specialty 222 "Medicine"**

**qualification Master of Medicine**

**Program "Medicine"**

**Kharkiv – 2020**

**Sixth year of study**

**Required Items:**

Number of credits - 3

The total number of hours - 90.

Hours for full-time study: classroom - 30, independent master work - 60.

Year - 6, semesters - 11 and 12.

Practical classes - 30 hours.

Independent work - 60

Type of control: credit.

Location of practical classes: study rooms of the Department of Internal Medicine №2, Clinical Immunology and Allergology named after Acad. LT Small on the basis of the National Clinical Hospital "City Clinical Hospital №27" of KhCM (41 Pushkinskaya St.).

Classes: Monday, Tuesday, Wednesday, Thursday, Friday (800-1215 / 1225-1555 according to schedule).

**Course coordinators**

1. Pavlo Kravchun - Head of the Department of Internal Medicine No.2, Clinical Immunology and Allergology named after academician L.T. Malaya, Dr. med. Professor.

2. Volodymyr Babadzhan - Professor of the Department of Internal Medicine No.2, Clinical Immunology and Allergology named after academician L.T. Malaya, Dr. med. M.Sc., Professor, Email: [vd.babadzhan@knmu.edu.ua](mailto:vd.babadzhan@knmu.edu.ua)

3. Olexandra Yermak - Assistant professor of the Department of Internal Medicine No. 2, Clinical Immunology and Allergology, named after academician L.T. Malaya, Dr. Med.

**Course abstract**

**1. The purpose and objectives of the discipline**

The purpose of teaching the elective course "Drug allergy in clinical practice" is to deepen knowledge of modern methods of clinical and laboratory diagnosis and treatment of drug allergies necessary in the professional activity of a physician, surgeon, obstetrician, gynecologist, pediatrician, etc., which are established on the basis of educational professional program.

The main objectives of the discipline "Drug Allergy in Clinical Practice" are to improve competencies in accordance with the general and professional competencies of the educational-professional program of knowledge 22 "Health" of the second (master's) level of higher education in 222 "Medicine" qualification Master of Medicine: 1) the ability to realise medical help in the event of emergencies with drug allergies – treatment of anaphylaxis ; 2) the ability to prescribe and evaluate methods of laboratory diagnosis and skin tests to prevent drug allergies; 3) the ability to put diagnose and prescribe treatment for drug allergies; 4) the ability to conduct and evaluate the results of patch tests with drugs, dental products and materials for various purposes, to choose the safest tools; 5) understanding of the subject area and professional activity, the ability to adapt and act in a new situation, making an informed decision, the ability to work in a team, to act socially responsibly and consciously.

General characteristics of the discipline. The discipline "Drug allergy in clinical practice" includes an idea of ​​the mechanisms of occurrence, clinical manifestations, the possibility of clinical and laboratory diagnosis of drug therapy, emergency care in its occurrence. Such information will help doctors of various specialties to protect themselves and patients from the complications of medical treatment and the use of various materials in their daily practice.

The role and place of discipline in the system of training. The study of the discipline will allow the doctor to apply methods of diagnosis and treatment of drug allergies, to determine the safety of various materials. Thus, the study of the discipline is needed by physicians, surgeons, obstetricians, gynecologists, pediatricians and others. in their daily practice.

**The purpose of teaching the elective course** "Drug allergy in clinical practice" is to deepen knowledge of modern methods of clinical and laboratory diagnosis and treatment of drug allergies necessary in the professional activity of a physician, surgeon, obstetrician, gynecologist, pediatrician, which are established on the basis of educational programs.

The main objectives of the discipline "Drug Allergy in Clinical Practice" are to improve competencies in accordance with the general and professional competencies of the educational-professional program of knowledge 22 "Health" of the second (master's) level of higher education in 222 "Medicine" qualification Master of Medicine: 1) general issues of diagnosis, treatment and prevention of drug allergies, anaphylaxis, allergic contact dermatitis; 2) realize mergency aid for patient with anaphylaxis and treatment of another forms of drug allergies; 3) to put diagnosis of drug sensitization using skin tests (prick-tests, scarification-tests); 4) to know recommendations for concentrations of drugs administered systemically for skin tests, methodics of scarification tests and prick-tests with drugs; 5) know recommendations for the use of haptens for patch testing; indications and methods of patch tests with drugs, dental products, cosmetics, household paints, fabrics and other materials that exhibit the properties of haptens; 6) the ability to prescribe laboratory methods for the diagnosis of drug allergies – determination of total IgE; specific IgE to drugs with ELISA and ImmunoCAP immunofluorescent single-component measurement indirect basophil degranulation test, CAST, Flow-CAST-basophil activation test by expression of CD63 and CD203 on the basophil membranes; drug challenge test; provocative tests with drugs; 7) understanding of pathogenetic mechanisms, clinical manifestations, methods of diagnosis, treatment and prevention of hypersensitivity to antibiotics, local and systemic anesthetics, analgesics, intravenous X-ray contrast agents, antihypertensive and other drugs; immediate therapy for anaphylactic shock and Quincke's edema; 8) know clinical manifestations, methods of diagnosis, treatment and prevention of anaphylaxis to drugs; reducing the risk of anaphylaxis during anesthesia: guidelines; 9) understanding of the subject area and professional activity, the ability to adapt and act in a new situation, making an informed decision, the ability to work in a team, to act socially responsibly and consciously.

**The organization of training - curriculum**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Titles of sections and topics | Number of hours | | | |
| All | Pr. | IWS | Including individual work |
| Topic № 1. Types of allergic reactions according to Jel and Coombs, classification of allergic reactions Cook. Anaphylaxis. | 2 | 2 |  | Preparation of a review of scientific literature, a report or an abstract, the fulfillment of a creative task |
| Topic № 2. General issues of diagnosis, treatment and prevention of drug allergies. | 6 |  | 6 |
| Topic №3. Classification and clinical forms of drug allergies. Allergic contact dermatitis. | 2 | 2 |  |
| Topic № 4. Skin tests. Prick-tests and scarification tests in the diagnosis and prevention of drug allergies. | 8 | 2 | 6 |
| Topic № 5. Methodics of scarification tests and prick-tests with drugs. | 2 | 2 |  |
| Topic № 6. Patch tests in diagnosis and prevention of drug allergies. | 6 |  | 6 |
| Topic № 7. Methods of patch tests with drugs. | 2 | 2 |  |
| Topic № 8. Laboratory diagnosis of drug allergy. | 8 | 2 | 6 |
| Topic № 9. Laboratory methods for the diagnosis of drug allergies. | 2 | 2 |  |  |
| Topic № 10. Diagnosis, treatment and prevention of allergies to antibiotics, local and systemic anesthetics. | 8 | 2 | 6 | Preparation of a review of scientific literature, a report or an abstract, the fulfillment of a creative task |
| Topic № 11. Drug allergy to antibiotics, local and systemic anesthetics. | 2 | 2 |  |
| Topic № 12. Diagnosis, treatment and prevention of allergies to analgesics, intravenous X-ray contrast agents, antihypertensive and other drugs. | 6 |  | 6 |
| Topic № 13. Drug allergy to analgesics, intravenous X-ray contrast agents, antihypertensive and other drugs. | 2 | 2 |  |
| Topic № 14. Diagnosis, treatment and prevention of allergies to drugs for local anesthesia and anesthesia. | 8 | 2 | 6 |
| Topic № 15. Drug allergy to drugs for local anesthesia and anesthesia. | 2 | 2 |  |  |
| Topic № 16. Hypersensitivity to drugs that have the properties of haptens. | 6 |  | 6 |  |
| Topic № 17. Drug allergy to drugs that have the properties of haptens. Patch test. Types of allergens for Pach-tests. | 2 | 2 |  |  |
| Topic № 18. Anaphylaxis. Anaphylactic shock in clinical practice. Causes, pathogenesis, diagnosis, clinical picture, severity and emergency care. | 8 | 2 | 6 |  |
| Topic № 19. Emergencies (anaphylactic shock, angioedema (Quincke's edema) and acute urticaria) in clinical practice. | 2 | 2 |  |  |
| Topic № 20. Preparation for the credit. | 6 |  | 6 |  |
| 21. Credit |  |  |  |  |
| Total hours in discipline: 120  Кредитів ECTS: 4 | **90** | **30** | **60** |  |

**Topics of practical classes**

|  |  |  |
| --- | --- | --- |
| №  i/o | Title of topic | Number of hours |
| 1. | Types of allergic reactions according to Jel and Coombs, classification of allergic reactions Cook. Anaphylaxis.Immunogram in acute infectious diseases of viral and bacterial etiology. Activated T- and B-cell immune response. Immune system dysfunction. | 2 |
| 2. | Classification and clinical forms of drug allergies. Allergic contact dermatitis. | 2 |
| 3. | Skin tests. Prick-tests and scarification tests in the diagnosis and prevention of drug allergies. | 2 |
| 4. | Methodics of scarification tests and prick-tests with drugs. | 2 |
| 5. | Methods of patch tests with drugs. | 2 |
| 6. | Laboratory diagnosis of drug allergy. | 2 |
| 7. | Laboratory methods for the diagnosis of drug allergies. | 2 |
| 8. | Diagnosis, treatment and prevention of allergies to antibiotics, local and systemic anesthetics. | 2 |
| 9. | Drug allergy to antibiotics, local and systemic anesthetics. | 2 |
| 10. | Drug allergy to analgesics, intravenous X-ray contrast agents, antihypertensive and other drugs. | 2 |
| 11. | Diagnosis, treatment and prevention of allergies to drugs for local anesthesia and anesthesia. | 2 |
| 12. | Drug allergy to drugs for local anesthesia and anesthesia. | 2 |
| 13. | Drug allergy to drugs that have the properties of haptens. Patch test. Types of allergens for Pach-tests. | 2 |
| 14. | Anaphylaxis. Anaphylactic shock in clinical practice. Causes, pathogenesis, diagnosis, clinical picture, severity and emergency care. | 2 |
| 15. | Emergencies (anaphylactic shock, angioedema (Quincke's edema) and acute urticaria) in clinical practice. | 2 |
| 16. | Credit |  |
|  | Total hours of practical classes | 30 |

**Independent work of masters**

|  |  |  |
| --- | --- | --- |
| №  i/o | Title of topic | Number of hours |
| 1 | General issues of diagnosis, treatment and prevention of drug allergies. | 9 |
| 2 | Skin tests. Prick-tests and scarification tests in the diagnosis and prevention of drug allergies. | 9 |
| 3 | Patch tests in diagnosis and prevention of drug allergies. | 9 |
| 4 | Laboratory diagnosis of drug allergy. | 7 |
| 5 | Diagnosis, treatment and prevention of allergies to antibiotics, local and systemic anesthetics. | 7 |
| 6 | Diagnosis, treatment and prevention of allergies to analgesics, intravenous X-ray contrast agents, antihypertensive and other drugs. | 7 |
| 7 | Diagnosis, treatment and prevention of allergies to drugs for local anesthesia and anesthesia. | 9 |
| 8 | Hypersensitivity to drugs that have the properties of haptens. | 7 |
| 9 | Anaphylaxis. Anaphylactic shock in clinical practice. Causes, pathogenesis, diagnosis, clinical picture, severity and emergency care. | 9 |
| 10 | Preparation for the credit. | 9 |
|  | Total hours of independent work of the master | **100** |

**Methods of control the discipline “Molecular Allergology”**

**Current training activity.** Teachers shall ensure that each master receives the necessary competences in the areas covered by the practical classes. Mastering the topic (current control) is controlled by practical lessons according to specific goals. The following measures are used to assess the level of master preparation: interpretation and evaluation of the results of specific immuno-diagnostics, laboratory tests (ELISAs for determining the levels of specific IgEs), immunoassay tests and immunohistochemistry, specific immunotherapy, tests, solution of situational tasks, control of the acquisition of practical skills.

When assessing the mastering of each discipline subject (current training activity - CTA) and the final session (software), the master is awarded an assessment according to the traditional 4-point system: "excellent", "good", "satisfactory" and "unsatisfactory".

**Evaluation of the success of master's of Medicine studies in ECTS, the organization of the educational process - a credit.**

**The final lesson** is conducted in accordance with the program of the discipline during the semester according to the schedule. The grade in the discipline is given to the Masters of Medicine at the last (final) lesson. The grade in the discipline includes a grade for current learning activities of Masters of Medicine.

**Assessment of the current training activity of the Master of Medicine.** Recalculation of the average grade for current training activities in a multi-point scale is carried out in accordance with the "Instructions for assessing the educational activities of Masters…" (Table 1). The total amount of points for the current training activity is defined as the arithmetic mean of traditional grades for each lesson, rounded to 2 decimal places, which are converted into points using table 1 (ACS - average score) is from 120 to 200 points. The minimum number of points that a Master of Medicine must score for the current training activity during the study of the discipline is 120 points, the maximum number of points - 200 points.

Table 1.

Recalculation of the average for current activity in a multi-point scale

(for disciplines ending with a credit)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4-point scale | 200-point scale |  | 4-point scale | 200-point scale |  | 4-point scale | 200-point scale |
| 5 | 200 | 4.22-4,23 | 169 | 3.45-3,46 | 138 |
| 4.97-4,99 | 199 | 4.19-4,21 | 168 | 3.42-3,44 | 137 |
| 4.95-4,96 | 198 | 4.17-4,18 | 167 | 3.4-3,41 | 136 |
| 4.92-4,94 | 197 | 4.14-4,16 | 166 | 3.37-3,39 | 135 |
| 4.9-4,91 | 196 | 4.12-4,13 | 165 | 3.35-3,36 | 134 |
| 4.87-4,89 | 195 | 4.09-4,11 | 164 | 3.32-3,34 | 133 |
| 4.85-4,86 | 194 | 4.07-4,08 | 163 | 3.3-3,31 | 132 |
| 4.82-4,84 | 193 | 4.04-4,06 | 162 | 3.27-3,29 | 131 |
| 4.8-4,81 | 192 | 4.02-4,03 | 161 | 3.25-3,26 | 130 |
| 4.77-4,79 | 191 | 3.99-4,01 | 160 | 3.22-3,24 | 129 |
| 4.75-4,76 | 190 | 3.97-3,98 | 159 | 3.2-3,21 | 128 |
| 4.72-4,74 | 189 | 3.94-3,96 | 158 | 3.17-3,19 | 127 |
| 4.7-4,71 | 188 | 3.92-3,93 | 157 | 3.15-3,16 | 126 |
| 4.67-4,69 | 187 | 3.89-3,91 | 156 | 3.12-3,14 | 125 |
| 4.65-4,66 | 186 | 3.87-3,88 | 155 | 3.1-3,11 | 124 |
| 4.62-4,64 | 185 | 3.84-3,86 | 154 | 3.07-3,09 | 123 |
| 4.6-4,61 | 184 | 3.82-3,83 | 153 | 3.05-3,06 | 122 |
| 4.57-4,59 | 183 | 3.79-3,81 | 152 | 3.02-3,04 | 121 |
| 4.54-4,56 | 182 | 3.77-3,78 | 151 | 3-3,01 | 120 |
| 4.52-4,53 | 181 | 3.74-3,76 | 150 | **Less 3** | **Not enough** |
| 4.5-4,51 | 180 | 3.72-3,73 | 149 |  |  |
| 4.47-4,49 | 179 | 3.7-3,71 | 148 |
| 4.45-4,46 | 178 | 3.67-3,69 | 147 |  |  |
| 4.42-4,44 | 177 | 3.65-3,66 | 146 |  |
| 4.4-4,41 | 176 | 3.62-3,64 | 145 |  |  |
| 4.37-4,39 | 175 | 3.6-3,61 | 144 |  |  |
| 4.35-4,36 | 174 | 3.57-3,59 | 143 |  |  |
| 4.32-4,34 | 173 | 3.55-3,56 | 142 |  |  |
| 4.3-4,31 | 172 | 3.52-3,54 | 141 |  |  |
| 4,27-4,29 | 171 | 3.5-3,51 | 140 |  |  |
| 4.24-4,26 | 170 | 3.47-3,49 | 139 |  |  |

Assessment of masters' independent work. Independent work of masters, which is provided by the topic of the lesson along with the classroom work, is assessed during the ongoing control of the topic at the relevant lesson.

**Score for discipline**

The grade in the discipline is given only to masters who have all practical classes and lectures.

**Elimination of academic debt (working off)** The course grade is given only to Masters of Medicine who have completed all practical classes and lectures. If a Masters has arrears of absenteeism (absent or unsatisfactory) and lectures (absent), he or she may complete an internship or lecture (write an abstract and answer questions on a lecture topic) during the current semester, as well as approved the schedule of the educational process for a period of two weeks during the winter or summer holidays before the beginning of the next semester, after the end of the corresponding semester, or the academic year with the permission of the dean.

**Recommended literature**

1. Oxford Handbook of Clinical Immunology and Allergy/ Third edition/Edded by Gavin P.S. – Oxford University Press, 2015 - 659 p.

2. USMLE STEP 1Lecture Notes, 2016/ Immunology and Microbiology/Tiffany L. Alley, Kim Moscatello- NY-Kaplan, Inc., 2016 – 519 p.

**Information resources**

1. Library of Congress Cataloging-in-Publication Data

2. [www.allergen.org](http://www.allergen.org)

3. [www.allergyeducation-ma.com](http://www.allergyeducation-ma.com)

**Course Policy**

In order to achieve the learning goals and successfully complete the course, it is necessary: from the first day to join the work; attend lectures regularly; read the material beforehand before considering it in a practical session; not to be late or miss classes; to come to the department dressed in a medical gown, to have replaceable shoes, to have a phonendoscope, a notebook, a pen; complete all necessary tasks and work daily; be able to work with a partner or as part of a group; seek help and receive it when you need it.

Provided academic mobility, interchangeability of credit credits (volume of 1 credit 30 hours). Masters can discuss different tasks, but their implementation is strictly individual. Writing, using any kind of software, tips, using a mobile phone, tablet or other electronic gadgets during the class are not permitted. Masters are not allowed to be late for practical classes. The absences of the practical classes are worked out hour by hour by the group teacher or the regular teacher. Reception of workings and consultations are held daily from 1500 - 1700, on Saturdays in accordance with the "Regulations on the order of working out by masters of educational classes" from 07.12.2015 № 415.

Masters with special needs should meet with the teacher or warn him or her before the class starts, at the request of the master, this may be done by the head of the group. If you have any questions, please contact your teacher.

Head of the Department of Internal Medicine №2,

clinical immunology and allergology

named after academician L.T. Malaya,

Doctor of medicine, Profssor P. Kravchun