

Odessa National Medical University
Department of Family Medicine and Polyclinic Therapy

Syllabus

Selected problems of diagnosis, treatment and prevention of diabetes

Scope	120 hours
Semester, year of study	IV semester, 2nd academic year
Days, time, place	According to curriculum
Teacher(s)	Velychko V.I. Danylchuk G.O. Tsyunchyk Yu.G. Kovalenko S.F. Shyshkina N.V.
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Workplace	classrooms No. 1, 2 of the Department of Family Medicine and Polyclinic Therapy Pishonivska Street 1 Odesa city
Consultations	Thursday 2.30-4.00 p.m.

COMMUNICATION

Communication is possible during face-to-face consultations (offline/face to face), or remotely (online) through Teams (under prior agreement). Communication is also possible through E-mail. It is necessary to indicate your last name, first name, course, and the name of the course. "Business issues" can be solved through specified phone number.

COURSE SUMMARY

Description of the academic discipline

The subject of study of the selective educational discipline "Selected problems of diagnosis, treatment and prevention of diabetes mellitus" is to acquaint students with new achievements and practical skills in the field. In the diagnostic process, the knowledge and ability to assess the risk factors of type 2 diabetes, the possibility of developing complications, and the development of measures to prevent them are essential.

Course Prerequisites: The discipline is based on and integrates with students' study of normal and pathological clinical anatomy, histology, cytology and embryology, clinical chemistry, general and clinical pathological physiology, microbiology, virology and immunology, pharmacology, general pharmacy and clinical pharmacology

Course Postrequisites: the discipline involves the study of relationships with the following disciplines: therapy, pediatrics, family medicine, infectious diseases, obstetrics and gynecology, neurology, and the formation of skills to apply knowledge in the process of further education and professional activity.

The purpose of this studying a selective academic discipline is to train specialists who are capable of competently solving complex problems in the field of professional and research innovation activities upon planning and carrying out their own research and training doctors of philosophy for the high-quality fulfillment of their duties with respect to modern research in the diagnosis of type 2 diabetes mellitus, lesions of the cardiovascular system and extracardiac pathology, conducting differential diagnosis, rational selection of modern antidiabetic drugs, which should reduce the frequency, or prevent the occurrence of complications of disease and side effects during pharmacotherapy.

The main **tasks** of the optional educational discipline are as follows:

- 1) provision of knowledge regarding the pathogenesis and risk factors of type 2 diabetes to PhD students;
- 2) provision of knowledge regarding the use of laboratory research methods in the diagnostic process to PhD students;
- 3) improvement of the knowledge of PhD students regarding the rehabilitation of patients with diabetes under the conditions of a polyclinic and a hospital;
- 4) the formation of practical skills in PhD students with respect to prescription of adequate pharmacotherapy for the purpose of glycemic control and prevention of diabetes complications and improvement of the patient's quality of life.

Expected results

As a result of studying an academic discipline, a graduate student (applicant) should know:

- basic principles of organization and provision of medical care for patients with diabetes under outpatient and hospital conditions;
- peculiarities of diagnosis and treatment of patients with diabetes under modern conditions, measures aimed at preventing the development of complications;
- principles of medical rehabilitation and improving the quality of life of patients;
- peculiarities of the examination of working capacity.

Ability:

- to determine the indications for conducting screening measures during outpatient treatment of different age categories for the early detection of prediabetes;
- to carry out early diagnosis of carbohydrate metabolism disorders using all available research methods;
- to analyze the results of laboratory studies in the case of carbohydrate metabolism disorders;
- to be able to timely diagnose conditions that require urgent therapy with the help of functional and laboratory research methods
- to prescribe adequate non-drug treatment and pharmacotherapy for patients with diabetes, conduct objectification of the treatment process;
- to solve the issue of examination of temporary and long-term disability;

DESCRIPTION OF THE COURSE

Modes and methods of education

The course will be taught in the form of lectures (8 hours), seminars (26 hours) and practical (26 hours), organization of independent work of graduate students (60 hours).

Teaching methods: verbal, explanatory and demonstrative, problem-based teaching method, research.

Types of educational activities of postgraduate student according to the curriculum are as follows: lectures, seminars and practical classes, independent work (IW) with active consultation of the teacher.

The teaching of the selective educational discipline "Selected problems of diagnosis, treatment and prevention of diabetes mellitus" in practical classes is provided by methodical developments for each practical class, visual teaching aids for each class (presentations, video lectures, situational tasks), the department's information resource, structured skill control algorithms.

Content of the academic discipline

Lectures:

1. Genetic and pathogenetic bases of the development of diabetes
2. Metabolic syndrome and its role in the development of type 2 diabetes
3. Risk factors, clinic and course of diabetes. Concept of prediabetes. Differential diagnosis. Acute complications of diabetes
4. Clinical pharmacology and tactics of prescribing antidiabetic drugs. Principles of treatment of patients with diabetes

Practical training

1. Diagnostic algorithm: prediabetes, type 1 diabetes, type 2 diabetes, gestational diabetes
2. Practical skills of working with glucometers. Continuous monitoring of glycemia. Stress tests for diabetes
3. Types and differential diagnosis of diabetes
4. Diagnosis and differential diagnosis of the development of coronary artery disease in diabetes, in particular myocardial infarction and heart failure.
5. Comatose states in diabetes. Developmental risk factors. Early diagnosis. Providing assistance
6. Cerebrovascular disorders in diabetes. Prevention of neurological complications of diabetes
7. Autonomic neuropathy. Diabetic gastroparesis in adults
8. Complications of diabetes (impairment of visual organ and kidneys, diabetic foot). Diabetic angiopathy.
9. Principles of treatment of patients with diabetes. Medicinal and non-medicinal methods. Treatment algorithm for patients with type 2 diabetes. Medical examination of patients

10. Modification of the lifestyle of patients with diabetes: correction of nutrition, performance of dosed physical activities by the patient, etc.

Seminar classes:

1. Diagnostic algorithm: prediabetes, type 1 diabetes, type 2 diabetes, gestational diabetes
2. Diagnosis and differential diagnosis of diabetes
3. Overweight and obesity as risk factors for type 2 diabetes
4. Clinical pharmacology and tactics of prescribing antidiabetic drugs
5. Principles of treatment of certain categories of patients with diabetes (pregnant, elderly, in the presence of comorbid pathology)
6. Damage to the cardiovascular system in diabetes.
7. Damage to the central nervous system in diabetes.
8. Obesity as a risk factor for the development of metabolic syndrome and diabetes. Modification of the lifestyle of patients with diabetes: correction of nutrition, performance of dosed physical exercises by the patient, etc.
9. Principles of treatment of certain categories of patients with diabetes (pregnant, elderly, in the presence of comorbid pathology)

List of recommended literature

Basic literature

1. Diagnostics and semiotics of endocrine diseases: study guide /Y. I. Pichkar. - K.: Ludy v Bilomu , 2014 - 137p
2. Endocrinology: study guide / P. M. Bodnar, V. I. Botsyurko, M. V. Vlasenko [and others]; edited by P. M. Bodnar. – Vinnytsia: Nova Knyga, 2020. – 536 p.

Additional literature

1. Internal diseases. A textbook based on the principles of evidence-based medicine. "Medycyna praktyczna" publishing house, 2019, p. 1632
2. Internal diseases: in 2 parts. Textbook / L.V. Hlushko, S.V. Fedorov, I.M. Skrypnyk and others. "Medytsyna" Publishing House, Kyiv, 2019, 584 p. 4.
3. ADA Diabetes Care Guidelines (2020): New Provisions. Medical newspaper "Health of Ukraine of the 21st century" No. 6 (475), March 2020.
4. Order of the Ministry of Health dated December 21, 2012 No. 1118 Unified clinical protocol of primary and secondary (specialized) medical care. Type 2 diabetes.
5. Order of the Ministry of Health of Ukraine of December 29, 2014 No. 1021 Unified clinical protocol of primary, emergency, secondary (specialized) and tertiary (highly specialized) medical care. Type 1 diabetes in young people and adults
6. Summary review of the 2019 European guidelines for the management of diabetes, prediabetes and cardiovascular diseases

Information resources

1. Ukrainian Diabetes Association <http://uda.in.ua/>
2. American Diabetes Association. <https://www.diabetesjournals.org>
http://care.diabetesjournals.org/content/41/Supplement_1/S1

3. European Association for the study of Diabetes. <https://www.easd.org>
4. 2011 Evaluation, Treatment, and Prevention of Vitamin D Deficiency, an Endocrine Society Clinical Practice Guideline https://www.researchgate.net/publication/51196545_Evaluation_Treatment_and_Prevention_of_Vitamin_D_Deficiency_an_Endocrine_Society_Clinical_Practice_Guideline

On-line calculators:

[Body mass index calculator \(BMI\)](#)

[Glomerular filtration rate calculator](#)

[Cardiovascular risk calculator \(PROCAM, SCORE, Framingham, IRIS II scales\)](#)

EXAMINATION

Examination forms:

- entrance and final knowledge level control tests on the topic of practical training;
- oral answer to questions based on the material of the current topic;
- solving typical and atypical clinical situational problems;
- control of practical skills;
- final assessment.

Scheme of scoring and distribution of credits received by graduate students

Current control. The success of the study of discipline subjects is assessed based on conventional 4-point scale. Upon completion of the study of discipline, the current success rate is calculated as the average current score, i.e. the arithmetic average of all the grades received by the graduate student according to the traditional scale.

Final control. Test is carried out upon completion of academic discipline. Credit will be given to post-graduate students (students) who have not missed lectures and practical classes or completed missed classroom classes and have an average grade of not lower than 3.00.

To evaluate the discipline on a 5-point scale, it is the arithmetic mean of two components:

1. The average current score of all current grades (the number is rounded to 2 decimal places, (for example, 4.38)
2. Traditional assessment for differential credit

The average score for the discipline is converted into a traditional grade and converted into points on a multi-point scale. Further calculations are carried out by the information and computing center of the university.

Independent work in the study of a selective academic discipline is ensured by methodical developments for independent work, visual teaching aids (video lectures, presentations), information resource of the department, topics of independent work, structured algorithms of skill control.

Topics of independent works

1. Genetic and pathogenetic bases of the development of diabetes. Risk factors.
2. Metabolic syndrome and its role in the development of type 2 diabetes
3. Diagnostic algorithm: prediabetes, type 1 diabetes, type 2 diabetes, gestational diabetes
4. Impairment of cardiovascular system in diabetes.
5. Impairment of nervous system in diabetes.
6. Complications of diabetes (impairment of vision organs and kidneys, diabetic foot). Diabetic angiopathy.
7. Comatose states in diabetes.
8. Clinical pharmacology and tactics of prescribing antidiabetic drugs
9. Overweight and obesity as risk factors for the occurrence of type 2 diabetes. Modification of the lifestyle of patients with diabetes: correction of nutrition, performance of dosed physical activities by the patient, etc.
10. Principles of treatment of certain categories of patients with diabetes (pregnant, elderly, in the presence of comorbid pathology)
11. Clinical guidelines for treatment in diabetology
12. Preparation to creditable class (examination of practical skills).

COURSE POLICY

The policy with respect to deadlines and retesting, academic integrity, attendance and tardiness, mobile devices, behavior in the classroom is in accordance with the "Regulations on Organization of Educational Process for Higher Education Students in Odessa National Medical University", 2019.

Deadlines and Retesting Policy:

All missed classes should be worked off. Lectures should be worked off by writing essays on the topic of the lesson. Practical classes should be worked off according to the consultation schedule. Modules should be reexamined if there are good reasons (for example, sick leave).

Academic Integrity Policy:

Mandatory observance of academic integrity, namely:

- independent fulfillment of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to information sources in the case of using ideas, developments, statements, information;
- compliance with copyright law and related rights;
- providing reliable information about the results of one's own educational (scientific, creative) activities, the use of research methods and sources of information.

Attendance and Tardiness Policy:

Attending lectures and practical classes is mandatory, lateness is not welcome. A serious reason for missing classes is illness, which is confirmed by a certificate issued by the doctor (hospital).

Mobile devices:

It is prohibited to use a mobile phone, tablet or other mobile devices during classes (except for cases provided for by the curriculum and methodical recommendations of the teacher).

Behavior in the audience:

The course involves working in a team. The communication environment should be friendly, creative and open to constructive criticism.