EDUCATIONAL PROGRAM
IN

ENDOCRINOLOGY AND METABOLIC DISEASES

FOR REGULAR TRAINING "Medicine"
EDUCATIONAL DEGREE "Master"

 ***Table № 1. Information about the structural units of the discipline***

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| **1. Information Course** |
|  Endocrinology is a modern and growing medical specialty. It studies the function of endocrine glands in the human body in normal and pathological conditions, diseases associated with them as well as methods of diagnosis and treatment. Its therapeutic methods improve the output of a number of endocrine disorders. The aim of the course is to gain in depth clinical knowledge of the most common endocrine diseases, including etiology, pathogenesis, clinical symptoms, diagnosis, differential diagnosis and treatment. The main task is placing correct diagnosis and acquiring skills in the interpretation of various of laboratory and hormonal constellations covering the main nosological units and its application in preclinical manifestation of metabolic syndrome, diabetes, various pre-diabetic conditions and disorders of hypothalamic-pituitary axis, thyroid, adrenal glands and the gonads. It is compulsory and taught in the eighth semester of the fourth year, ending with a semester exam within the examination of Internal Diseases- part one. The course presents theoretical elements related to the production and secretion of hormones, their biological activity, hormone - receptor interactions, hormone regulation, preclinical and clinical manifestations of various diseases, methods of diagnosis and treatment. Special attention is paid to study the fundamental pathоbiochemical and pathophysiologic mechanisms underlying the hormonal- metabolic disorders, their applications in laboratory, hormonal diagnostic and possibility of treatment and prevention. Course is provided with detailed presentations for each lecture- full- text edition included in chapter "Endocrinology" in volume 80 pages of the textbook of Internal Diseases- first part, edition of the author's team of the department as well as guidance for functional diagnostics.Test system, which includes questions from all areas of endocrinology, has been developed to control student’ s knowledge. |
| **2. Teaching staff** |
| *Тази секция се попълва автоматично от сайта на МУ. Проверете дали данните Ви са актуални и ако има разминаване, попълнете секцията с това, което е нужно да се промени* |
| **3. Syllabus** |
| The syllabus is developed in the training department of professors and associate professors in charge. For this purpose they apply and follow the procedures for this type of training document, set in the system to maintain the quality of education.The structure of the program is discussed and approved by the team management at university and meets the requirements of the system for quality management. The program is discussed in the department Board and is proposed for adoption by the board of the main unit. In the syllabus the thematic plan of lectures and exercises and their detailed content in the form of theses are listed. The educational content of the program is updated annually in line with the development of new diagnostic and therapeutic methods and application programs, such as sync with their application in medical practice and science. The program takes effect after approval by the Dean of the Faculty of Medicine**CONTENTS OF THE PROGRAM TRAINING:** Hypothalamic-pituitary diseases hyperfunction and hypofunction of thyroid, parathyroid, adrenal glands, autoimmune thyroid diseases, endocrine diseases of the genital glands, diabetes mellitus type 1 and type 2- pathogenesis, diagnosis and treatment; obesity and metabolic syndrome**.****ASSESSMENT:** Theexam in Endocrinology is an integral part of the exam in Internal Diseases- part I: “ Cardiology, respiratory medicine and endocrinology “ and includes practical and theoretical oral exam.Current assessment during the semester - with tests and colloquia.pdf-256_32Файл 1. Тематичен план на упражненията по ендокринология *(Файл 1.doc)***SCHEDULE** **of the classes of the 4-th year, 8-th semester students ELE for the academic year** **2015- 2016** **EXERCISES OF ENDOCRINOLOGY**1. Hypopituitarism
2. Diabetes insipidus
3. Adenomas of Pituitary gland
4. Autoimmune thyroid diseases
5. Primary Hyperthyroidisms – Grave’s disease
6. Primary Hypothyroidisms – Hashimoto’s thyroiditis
7. Thyroid Nodules, thyroid Cancer, and Goiter
8. Primary Hyperparathyroidism and other Causes of Hypercalcaemia
9. Primary Hypoparathyroidism and other Causes of Hypocalcaemia
10. Primary Hypercriticism – Cushing’s syndrome
11. Primary Hypocorticism – Addison’s disease
12. Pathogenesis and diagnosis of Diabetes mellitus
13. Manifestation and acute complication of Diabetes mellitus
14. Chronic complications of Diabetes mellitus
15. Treatment of Diabetes mellitus type1and Diabetes mellitus type 2
16. Polycystic Ovary Syndrome
17. Hypogonadism in man
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| **4. Lectures** |
| The course is intended for students of the Medical University - Pleven in full-time education in "Medicine. It includes seven two-hour lectures. For each of them it offers detailed presentation distributed to individual lectures and test questions for self-training and control of knowledge. The "Endocrinology" part of the textbook in Internal Medicine can be used by any other students or medical professionals who want to improve their training in internal medicine and endocrinology. It offers training material in simple, well thought out, methodically arranged and properly selected expressions and forms. In chronological order are served basics of building a clinical knowledge in the field of endocrinology including various clinical forms of manifestation of diseases, methods of their diagnosis, their place in the differential diagnostic process, the various therapeutic approaches and outcome of disease.pdf-256_32Файл 2. Тематичен план на лекциите по ендокринология *(Файл 2.doc)***SCHEDULE****of the classes of the 4-th year, 8- th semester students ELE for the academic year 2015- 2016****Lecturer: Assoc Prof. Katya Todorova MD, PhD****Thursday****Parvum hall****13.00h - 14.30h.**1. **Hypopituitarism, Diabetes Insipidus, Adenomas -11. Sep. 2014**
2. **Primary Hyperthyroidism – Grave’s disease - 18. Sep. 2014**
3. **Primary Hypothyroidism– Hashimoto’s thyroiditis -25. Sep. 2014**
4. **Primary Hyperparathyroidism and other Causes of Hypercalcemia - 02.Oct.2014**
5. **Primary Hypoparathyroidism and other Causes of Hypocalcemia – 09.Oct.2014**
6. **Primary Hypercorticism – Cushing’s syndrome - 16. Oct.2014**
7. **Primary Hypocorticism - Addison’s disease - 23. Oct.2014**
8. **Pathogenesis and diagnosis of Diabetes mellitus (DM) - 30. Oct 2014**
9. **Treatment of T1DM and type T2DM - 06. Nov. 2014**
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| **5. Additional materials and presentations** |
| To expand knowledge in accordance with the curriculum presented in this course are provided and additional teaching materials. These materials are not included in the basic lectures or textbook. Additional materials are presented primarily through presentations. These presentations are represented as clinical discussions, colleges and seminars within ten daily internship of Endocrinology.Recommended readings:This section below presents the literature which is necessary to prepare for the course. For successful preparation of examination procedures it is sufficient primary literature, but to deepen the knowledge of educational material needs to be used and additional sources. These are materials featured on the Internet and literature. Suggested main and additional literature are listed in the link below* Файл 3. Учебни помагала *(Файл 3.doc)*
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| **6. Practical exercises and essays** |
| In achieving the goals of the curriculum, besides lectures are also provided practical exercises, test and colloquium. These elements are mandatory for students and are presented as a component in determining the final grade of the student for the semester.**Practical exercises:**Practical classes with a teacher are an essential kind of concepts, through it students obtain practical skills and habits on history taking, physical examination, interpretation of laboratory and hormonal results, construction of diagnosis and differential diagnosis and therapeutic management of endocrine diseases. They also relies on the use of basic knowledge of physiology, pathophysiology, biochemistry and internal medicine to build logical and thorough clinical thinking and correct clinical approach to the patient, to determine the most appropriate clinical diagnostic and therapeutic behavior and assessment of its efficiency. Practice sessions are held to the bedside in hospital rooms and theoretical part of the exercise - in training rooms equipped with computers and multimedia devices. In each of the practical exercises are set general and individual tasks for students analyzing different clinical cases, making discussion of the disease, its severity, complications, clinical evolution, treatment and the effect of therapy. Students have the opportunity to participate actively in history taking, clinical status, reporting of clinical cases, treatment of newly admitted patient. They may attend rosters of their training assistants through the semester and internship.* Файл 4. Тезиси на упражненията по ендокринология *(Файл 5.doc)*

**THESISS OF EXERCISES OF ENDOCRINOLOGY**I. HYPOPITUITARISMSTUDY GOALS The students have to know at the end of exercise: 1. To recognize the clinical symptoms of the disease.
2. To know the main methods for prepare the diagnosis.
3. To know the treatment - medication’s groups, method to apply, medication’s doses, duration of the treatment period.

SHEDUAL OF EXERCISE1. History and observation of patient with diagnose hypopituitarism.
2. Interpretation the patient’s laboratory results- biochemical, hormone’s levels.
3. Presentation of therapeutically schemes for the treatment of hypopituitarism in different periods- at the start of the disease, with full manifestation, in emergency situation, in panpituitarism, presentation of medication’s groups, medication’s doses, schemes for accepting.

II. DIABETES INSIPIDUSSTUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of the disease.
2. To know the main methods for prepare the diagnosis- hormone’s tests, deprivation test, X-Ray study, CT, MRA of hypophisis.
3. To prepare the differential diagnosis with other causes of polyuria and polydipsia- diabetes mellitus, psychogenic form of primary polydipsia.
4. To know the methods of treatment - medication’s groups, medication’s doses, schemes for accepting, sides effect of medications.

SHEDUAL OF EXERCISE1. History and observation of patient with diabetes insipidus.
2. Interpretation the patient’s laboratory results- deprivation test, hormone’s levels.
3. Interpretation the results of X-Ray study, CT, MRI of hypophisis.
4. Presentation of therapeutically schemes and medications for the treatment of diabetes insipidus.

III. ADENOMAS OF PITUITARY GLANDSTUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of most frequent pituitary adenomas- acromegaly, prolactonoma, incidentaloma.
2. To know the main methods for prepare the diagnosis- hormone’s levels, hormone’s tests, CT, MRI, X-Ray.
3. To prepare the differential diagnosis with other causes of hyperprolactinemia.
4. To know the methods of treatment- medication’s groups, medication’s doses, schemes for accepting, surgical treatment- transphenoidal or transcranial adenomectomy, and radiation therapy.

SHEDULE OF EXERCISE1. History and observation of patient with pituitary adenoma.
2. Interpretation the patient’s laboratory results- hormone’s levels, hormone’s tests.
3. Interpretation the results of CT, MRI, X-Ray.
4. Using methodological methods to help of exercise- photos from photoalbum.
5. Presentation of therapeutically schemes and medications for the treatment of acromegaly, prolactonoma, hyperprolactinemia.

IV. AUTOIMUNE THYROID DISEASES STUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of autoimmune thyroid diseases- Grave’s disease, Hashimoto’s thyroiditis, thyroid ophthalmopathy.
2. To know the main methods for prepare the diagnosis- hormone’s levels, hormone’s tests, thyroid ultrasonography.
3. To prepare the differential diagnosis with other causes of hyperthyroidism.
4. To know the methods of treatment- antithyroid medication’s groups, medication’s doses, schemes for accepting, surgical treatment- subtotal thyroidectomy and radioiodine therapy.

SHEDUAL OF EXERCISE1. History and observation of patient with autoimmune thyroid diseases.
2. Interpretation laboratory results- hormone’s levels, hormone’s tests, thyroid antibodies.
3. Prepare thyroid ultrasonography of the patients in the cabinet for ultrasound diagnosis.
4. Using methodological methods to help of exercise- photo album with patient’s photos and ultrasound images.
5. Presentation of therapeutically schemes and medications for the treatment of patient with autoimmune thyroid diseases

V. PRIMARY HYPERTHYROIDISM –GRAVE’S DISEASESTUDY GOULSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of primary hyperthyroidism and Grave’s disease.
2. To know the main methods for prepare the diagnosis- hormone’s levels, hormone’s tests, thyroid ultrasonography.
3. To prepare the differential diagnosis with other forums of thyrotoxicosis- Grave’s disease, toxic adenoma, diffuse and nodular goiter with thyrotoxicosis manifestation.
4. To know the methods of treatment of Grave’s disease.

SHEDUAL OF EXERCISE1. History and observation of patient with Grave’s disease.
2. Interpretation laboratory results- hormone’s levels, hormone’s tests, thyroid antibodies.
3. Prepare thyroid ultrasonography of the patients with Grave’s disease in the cabinet for ultrasound diagnosis.
4. Using methodological methods to help of exercise- photo album with patient’s photos and Presentation of therapeutically schemes and medications for the treatment of patient with Grave’s disease.

VI. PRIMARY HYPOTHYROIDISM –HASHIMOTO’S THYRIDITISSTUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of primary hypothyroidism and Hashimoto’s thyroiditis.
2. To know the main methods for prepare the diagnosis- hormone’s levels, hormone’s tests, thyroid antibodies, thyroid ultrasound imaging.
3. To prepare the differential diagnosis with other forums of hypothyroidism.
4. To know the methods and medications for treatment of hypothyroidism and Hashimoto’s thyroiditis.

SHEDULE OF EXERCISE1. History and observation of patients with primary hypothyroidism and Hashimoto’s thyroiditis.
2. Interpretation laboratory results- hormone’s levels, hormone’s tests, thyroid antibodies.
3. Prepare thyroid ultrasound imaging of the patients with primary hypothyroidism and Hashimoto’s thyroiditis in the cabinet for ultrasound diagnosis.
4. Using methodological methods to help of exercise- photo album with patient’s photos and ultrasound images. Presentation of therapeutically schemes and medications for the treatment of patient with primary hypothyroidism and Hashimoto’s thyroiditis

VII.THYROID NODULES, THYROID CANCER AND GOITERSTUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of thyroid nodules, thyroid cancer, and goiter.
2. To know the main methods for prepare the diagnosis- palpitation of thyroid gland, hormone’s levels, hormone’s tests, thyroid antibodies, thyroid ultrasonography.
3. To prepare the differential diagnosis between that tree diseases, and with other thyroid diseases.
4. To know the methods and medications of treatment of thyroid nodules, thyroid cancer, and goiter.

SHEDULE OF EXERCISE:1. History and observation of patients with thyroid nodules, thyroid cancer, and goiter.
2. Interpretation laboratory results- hormone’s levels, hormone’s tests, thyroid antibodies.
	1. Prepare thyroid ultrasonography of the patients with thyroid nodules, thyroid cancer, and goiter in the cabinet for ultrasound diagnosis.
	2. Using methodological methods to help of exercise- photo album with patient’s photos and ultrasound imaging.
	3. Presentation of therapeutically schemes and medications for the treatment of patient with thyroid nodules, thyroid cancer, and goiter

VIII. PRIMARY HYPERPARATHYROIDISM AND OTHER CAUSES OF HYPERCALCAEMIA STUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of primary hyperparathyroidism and other causes of hypercalcaemia
2. To know the main methods for prepare the diagnosis of primary hyperparathyroidism- serum calcium’s and phosphate’s levels, ionized calcium’s levels, level of parathyroid hormone, parathyroid echography.
3. To prepare the differential diagnosis between primary hyperparathyroidism and other causes of hypercalcaemia
4. To know the methods and medications of treatment of primary hyperparathyroidism.

SHEDULE OF EXERCISE1. History and observation of patients with primary hyperparathyroidism.
2. Interpretation laboratory results- serum calcium’s and phosphate’s levels, ionized calcium’s levels, level of parathyroid hormone.
3. Prepare parathyroid ultrasonography of the patients with primary hyperparathyroidism.

 in the cabinet for ultrasound diagnosis.1. History and observation of patients with other causes of hypercalcaemia.
2. Presentation of therapeutically schemes and medications for the treatment of primary hyperparathyroidism and other causes of hypocalcaemia.

IX .PRIMARY HYPOPARATHYROIDISM AND OTHER CAUSES OF HYPOCALCAEMIA STUDY GOALSThe students have to know at the end of exercise: 1. To recognize the clinical symptoms of primary hypoparathyroidism and other causes of hypocalcaemia.
2. To know the main methods for prepare the diagnosis of primary hypoparathyroidism- serum calcium’s and phosphate’s levels, ionized calcium’s levels, level of parathyroid hormone, parathyroid ultrasound imaging
3. To prepare the differential diagnosis between primary hypoparathyroidism and other causes of hypocalcaemia.
4. To know the methods and medications of treatment of primary hypoparathyroidism.

SHEDULE OF EXERCISE1. History and observation of patients with primary hypoparathyroidism.
2. Interpretation laboratory results- serum calcium’s and phosphate’s levels, ionized

 calcium’s levels, level of parathyroid hormone.1. Prepare parathyroid ultrasonography of the patients with primary hypoparathyroidism
2. History and observation of patients with other causes of hypocalcaemia.
3. Presentation of therapeutically schemes and medications for the treatment of primary

 hyperparathyroidism and other causes of hypocalcaemia. X. PRIMARY HYPERCORTICISM –CUSHING’S SYNDROMESTUDY GOALS: The students have to know at the end of exercise: 1. To recognize the clinical symptoms of primary hypercriticism – Cushing’s syndrome.
2. To know the main methods for the diagnosis of primary hypercriticism-hormone’s levels- cortisol, ACTH, rhythm of secretation of cortisol, functional supression tests.
3. To know the methods- CT, MRI of hypophisis and suprarenal glands.
4. To prepare the differential diagnosis between Cushing’s syndrome and Cushing’s disease, and other forms of hypercriticism.
5. To know therapeutically schemes and medications for the treatment of primary hypercriticism – Cushing’s syndrome and other forms of hypercriticism

SHEDUAL OF EXERCISE1. History and observation of patients with primary hypercriticism.
2. Interpretation laboratory results- hormone’s levels- cortisol, ACTH, rhythm of secretation of cortisol, functional supression tests.
3. History and observation of patients with other causes of hypercriticism.
4. Presentation of therapeutically schemes and medications for the treatment of primary hypercriticism and other causes of hypercriticism.

XI. PRIMARY HYPOCORTICISM – ADDISON’S DISEASESTUDY GOALS: The students have to know at the end of exercise: * 1. To recognize the clinical symptoms of primary hypocorticism – Addison’s disease.
	2. To know the main methods for prepare the diagnosis of primary hypocorticism

Hormones’ levels- cortisol, ACTH, rhythm of secretation of cortisol, functional stimulating tests. * 1. To know the methods- CT, MRI of hypophisis and suprarenal glands.
	2. To prepare the differential diagnosis between Addison’s disease and other forms of

 hypocriticism.* 1. To know therapeutically schemes and medications for the treatment of primary

 hypocriticism – Addison’s disease and other forms of hypocorticism.SHEDUAL OF EXERCISE* 1. History and observation of patients with primary hypocoriticism.
	2. Interpretation laboratory results- hormone’s levels- cortisol, ACTH, rhythm of secretion of cortisol, functional stimulating tests.
	3. History and observation of patients with other causes of hypocriticism.
	4. Presentation of therapeutically schemes and medications for the treatment of primary hypocoriticism – Addison’s disease and other forms of hypocriticism.

XII. PATHOGENESIS AND DIAGNOSE OF DIABETES MELLITUSSTUDY GOALS: The students have to know at the end of exercise: 1. To recognize the clinical symptoms of diabetes mellitus.
	1. To know definition and classification of diabetes mellitus.
	2. To know the pathogenesis of type 1 and type 2 diabetes mellitus.
	3. To know criteria and the main methods for prepare the diagnosis of diabetes mellitus,

and the categories impaired fasting glucose and impaired glucose tolerance. * 1. To prepare the differential diagnosis between type 1 and type 2 diabetes mellitus and other causes of polyuria and polydipsia, and hyperglycemia.

SHEDULE OF EXERCISE:1. History and observation of patients with type 1 and type 2 diabetes mellitus.
2. Interpretation laboratory results- blood glucose, HbA1c, OGTT
3. History and observation of patients with impaired fasting glucose and impaired glucose tolerance.

XIII. MANIFESTATION AND ACUTE COMPLICATIONS OF DIABETES MELLITUSSTUDY GOALS:The students have to know at the end of exercise: 1. To recognize the main clinical symptoms of type1 and type 2 diabetes mellitus.
2. To recognize the clinical symptoms and pathogenesis of acute complications of diabetes mellitus-hypoglycemia, diabetic ketoacidosis, hyperglycemic hyperosmolar nonketotic coma, lacktoacidosis coma.
3. To know the laboratory tests for diagnosis type1 and type 2 diabetes mellitus, and diagnosis of acute complications of diabetes mellitus.
4. To prepare the differential diagnosis between acute complications of diabetes mellitus
5. To know therapeutically schemes and medications for the treatment of acute complications of diabetes mellitus

SHEDULE OF EXERCISE1. History and observation of patients with type 1 and type 2 diabetes mellitus.
2. History and observation of patients with acute complications of diabetes mellitus.
3. Interpretation laboratory results- blood glucose, serum and urine ketenes, acidosis, serum levels of potassium, sodium, phosphorus.
4. Presentation of therapeutically schemes and medications for the treatment of acute complications of diabetes mellitus.

XIV.CRONIC COMPLICATIONS OF DIABETES MELLITUSSTUDY GOALS: The students have to know at the end of exercise: 1. To recognize the main clinical symptoms of chronic complications of type1 and type 2 diabetes mellitus.
2. To know the classification of chronic complications of diabetes mellitus.
3. To know the pathogenesis of chronic complications of diabetes mellitus.
4. To know the diagnostic criteria for chronic complications of diabetes mellitus.
5. To prepare differential diagnosis between peripheral neuropathy and atherosclerosis- peripheral vascular disease.
6. To know therapeutically schemes and medications for the treatment of chronic complications of diabetes mellitus

SHEDUAL OF EXERCISE1. History and observation of patients with type 1 and type 2 diabetes mellitus and chronic complications- retinopathy, nephropathy, neuropathy, coronary artery disease, peripheral vascular disease.
2. Interpretation laboratory results- blood glucose, microalbuminuria, proteinuria.
3. Presentation of therapeutically schemes- control of hypertension, dietary-limitation protein intake, and medications for the treatment of chronic complications of diabetes mellitus.

XV. TREATMENT OF TYPE 1 DIABETES MELLITUS AND TYPE 2 DIABETES MELLITUSSTUDY GOALS: The students have to know at the end of exercise: 1. To know modification in diet and changes of physical activity in diabetes mellitus.
2. To know insulin forms- insulin preparations, their onset, peak, duration of action.
3. To know oral antihyperglycemic drugs- classes, their action.
4. To prepare therapeutically schemes in type 1 and type 2 diabetes mellitus.

SHEDULE OF EXERCISE:1. History and observation of patients with type 1 and type 2 diabetes mellitus.
2. Presentation of insulin forms and therapeutically schemes in insulin in type 1 diabetes mellitus.
3. Presentation of medications and therapeutically schemes with insulin in type 2 diabetes mellitus.
4. Presentation of therapeutically schemes with insulin in type 2 diabetes mellitus.
5. Presentation of therapeutically schemes with insulin and oral drugs in type 2 diabetes mellitus

XVI. POLYCYSTIC OVARY SYNDROMESTUDY GOALS:The students have to know at the end of exercise: 1. To recognize the clinical symptoms of polycystic ovary syndrome.
2. To know the pathophysiology of polycystic ovary syndrome.
3. To know laboratory results for diagnose- hormone’s levels, OGTT, insulin’s levels, insulin resistance.
4. To prepare differential diagnosis between polycystic ovary syndrome and other androgen excess syndromes.
5. To know medications and therapeutically schemes for the treatment of patients with polycystic ovary syndrome.

SHEDULE OF EXERCISE:1. History and observation of patients with polycystic ovary syndrome.
2. Interpretation laboratory results- hormone’s levels- FSH, LH, testosterone, OGTT, insulin’s levels, insulin resistance.
3. Presentation of medications and therapeutically schemes in patients with polycystic ovary syndrome.

XVII. MALE HYPOGONADISM STUDY GOALS: The students have to know at the end of exercise: 1. To recognize the clinical symptoms of male hypogonadism.
2. To know the main causes for male hypogonadism- hypogonadotropic and hypergonadotropic syndromes.
3. To know laboratory results for diagnose- hormone’s levels- FSH, LH, testosterone.
4. To know medications and therapeutically schemes for the treatment of patients with male hypogonadism.

SHEDULE OF EXERCISE:1. History and observation of patients with male hypogonadism.
2. Interpretation laboratory results- hormone’s levels- FSH, LH and testosterone.
3. Presentation of medications and therapeutically schemes in patients with male hypogonadism.
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| **7. Summary for the exam** |
| Summary is developed to finalize the preparations for the course and laying the semester examination. The purpose of the questionnaire is to systematize the acquired knowledge by concentrating on main issues presented in the lectures and the textbook. In the questionnaire are included only issues that must be presented in the presentations to lectures or full text textbook. This requires students to read carefully the issues of their examination summary, to look at the presentations and all chapters of the textbook and supplementary materials* Файл 5. Конспект за семестриален изпит... *(Файл konspekt.doc)*

**CONSPECTUS OF ENDOCRINOLOGY****4-th year, 8- th semester students ELE for the academic year** **2015-2016** 1. Hypopituitarism
2. Diabetes insipidus
3. Oversecretion of Pituitary Hormones, Adenomas- Acromegaly, Cushing’Disease
4. Autoimmune thyroid disease
5. Primary Hyperthyroidisms – Grave’s disease
6. Primary Hypothyroidism – Hashimoto’s thyroiditis
7. Thyroid Nodules, thyroid Cancer, and Goiter
8. Primary Hyperparathyroidism and other Causes of Hypercalcaemia
9. Primary Hypoparathyroidism and other Causes of Hypocalcaemia
10. Primary Hypercriticism – Cushing’s syndrome
11. Primary Hypocorticismus- Addison’s disease
12. Pathogenesis and diagnosis of Diabetes mellitus (DM)
13. Manifestation and acute complication of Diabetes mellitus
14. Chronic complications of Diabetes mellitus
15. Management of Diabetes mellitus
16. Treatment of type 1 Diabetes mellitus and type 2 Diabetes mellitus
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| **8. Tests Course** |
| Tests for control of knowledge are elements by which it is verified the preparation of students after each lecture and controlling their self-study after passing the full course in the subject. In tests are included questions with just one true statement. The test should be resolved at the end of the last lecture and after that students may receive authentication for the semester. |
| **9.General comments and recommendations** |
|  Connection to this section provides guidance to students on how to prepare for the course. |
| **10. Forum discipline** |
| The forum on the subject is a place in the system of distance learning where can be accommodated comments, questions and recommendations on ways of presenting the material, its content and relevance. The forum is open to all students who wish to use it. Information contained therein should be brief and clear in strict compliance with the requirements of academic ethics and good manners. Teachers will take into account your comments and recommendations on the course and preparation for it. Thank you for the understanding. |
| **11. Consultations** |
| Consultations on thе course requires attendance. They are recommended and are held in the Department of Endocrinology – Pleven on schedule, announced by the lecturers. These consultations explain the methodology and terms of preparation for the course and characteristics of the practical test. |

***Табл. 2. Information about the content of the lectures and training units***

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| **Lecture № 1: Hypopituitarism, diabetes insipidus, pituitary adenomas.** |
| The first lecture presents the structure and tasks of the course "Endocrinology"- hormonal functional activity and forms of hormonal control and regulation. Next is anatomy-physiological description of the hypothalamic-pituitary axis- causes, mechanisms, clinical symptoms and treatment of diseases of the pituitary flowing with hyperfunction and hypofunction. Three are the main focuses of the lecture:1. Hypopituitarism – etiology of the disease, incidence

*Main reasons for the disease.* *Pathophysiological mechanisms*. *Clinical picture. Methods of diagnosis. Treatment of the disease - major groups of medications*1. Diabetes insipidus - etiology of the disease, incidence

Clinical presentation, diagnostic methods, sample craving, differential diagnosis. Treatment medications.1. Pituitary adenoma - classification, incidence

Clinical picture. Methods of diagnosis. Treatment.pdf-256_32 Презентация към лекция № 1... (Файл pr1.pptx) |
| **Lecture № 2: Disorders of the thyroid gland** |
| At the beginning of this lecture is presented thyroid disease occurring with hyperfunction. The main emphasis is thyrotoxicosis, with its clinical expression Graves' disease. Viewed in sequential order: definition, frequency and prevalence, etiology and pathogenesis of the disease, clinical forms and thyroid-associated ophthalmopathy (TAO). Mentioned are the complications of the disease, the construction of diagnosis and differential diagnosis, criteria for diagnosis, laboratory tests, functional tests and instrumental diagnosis by ultrasound of the thyroid gland.The focus is on three main treatment approaches: 1). Groups medication and method of administration of the drugs. 2). Surgery-indications, surgical techniques, complications; 3). Treatment with radioactive iodine- indication, route of administration, complications. Second part of the lecture includes thyroid diseases occurring with hypofunction: primary hypothyroidism, endemic and sporadic struma and thyroiditis. In this part of the lecture focus is directed to Hashimoto's thyroiditis - etiology and pathogenesis, incidence and prevalence, diagnosis and differential diagnosis, ultrasound of the thyroid gland and its importance for diagnosis. Medical schemes and route of administration of medicationpdf-256_32 Презентация към лекция № 2 ... (Файл pr2.pptx)pdf-256_32 Допълнение част 1. (Тиреоидити G3.docx)  |
| **Lecture № 3: Diseases of the parathyroid glands** |
|  In the third lecture are presented diseases of the parathyroid glands flowing as hyperfunction and hypofunction. At the beginning of the lecture is considered the primary hyperparathyroidism. The lecture starts with definition of the disease and in logical order are presented its frequency and distribution, etiology, pathogenesis, pathomorphology, clinical picture, diagnosis - laboratory methods and hormonal studies. Different instrumental methods for objectifying the parathyroid glands - ultrasound, scintigraphy, CT, MRI, differences in the differential diagnosis of primary hyperparathyroidism with secondary and tertiary hyperparathyroidism are represented. Relatively are detailed other diseases with hypercalciemia: ectopic form of cancers and carcinoma metastases, renal failure, hypervitaminosis D, sarcoidosis, acute adrenal insufficiency, hyperthyroidism, treatment with thiazide diuretics. It is shown the main treatment plan - rehydration, calcitonin, diuretics- methods and regimens of medication. Particular attention is paid to primary hypoparathyroidism presented in the same order of presentation: definition, incidence and prevalence, etiology, pathogenesis, pathomorphology. Etiopathogenetic classification of diseases with primary hypoparathyroidism is also presented. The focus is on the clinical picture of the disease - clinical symptoms of manifest tetany with increased neuromuscular excitability and latent form evidenced by provocative tests. The construction of the diagnosis by laboratory and hormonal methods are analyzed in details. Other causes of hypocalciemia - induced in alkalosis, pregnancy, infection, treatment with diuretics, genetic forms in children are explained in details.The therapeutic approach in acute and chronic forms and the use of various calcium drugs with various forms of vitamin D and parathyroid hormone are represented.The lecture is provided with a presentation presented in the link below: pdf-256_32 Презентация към лекция № 3 ... (Файл pr3.pptx)  |
| **Лекция № 4: Adrenal gland diseases.** |
|  In this lecture two topics have been discussed: hyper- and hypofunction of the adrenal glands.The introduction into this lecture includes the function, secretion and control of adrenal hormones. The first part of the lecture includes primary hypercorticism, Cushing syndrome - definition, incidence, aethiology, pathogenesis, pathomorphology, pathophysiology, classification, clinical features, diagnosis – laboratory, hormonal and supression diagnostic tests, differential diagnosis, treatment(surgical, and nonsurgical). The second part of the lecture presents the primary hyporcorticism, Addisson disease. The main content definition, incidence, aethiology, pathogenesis, pathomorphology, pathophysiology, classification, clinical features, diagnosis – laboratory, hormonal and stimulation diagnostic tests, differential diagnosis of primary, secondary and tertiary hypocorticism, differential diagnosis with other diseases whose clinical features include melanodermia, astheno-adinamia, arterial hypotension, hypoglycaemia. Hormone supplementary treatment with glucocorticosteroids and mineralcorticoids. Indications for treatment, doses, regimens A presentation is attached to the lecture, see below pdf-256_32 Презентация към лекция № 4 ... (Файл pr4.pptx) |
| **Lecture № 5: Ethiology, pathogenesis and diagnosis of Diabetes.** |
| The content is about diabetes: definition, incidence, aethiology, pathogenesis, pathomorphology, pathophysiology of type 1 and type 2 diabetes, risk groups.The attention is focused on the diagnosis and the difference between the two forms, interpretation of the OGTT, the significance of pre-diabetes – impaired prandial glycaemia and impaired glucose tolerance. Differential diagnosis of polydipsia-polyuria syndrome and hyperglycemia are also included. A presentation is attached to the lecture, see below pdf-256_32 Презентация към лекция № 5... (Файл pr5.pptx) |
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| **Lecture № 6: Treatment of type 1 and type 2 Diabetes** |
| The type of treatment is discussed in this lecture1). Training of diabetes patients in the different periods of the disease2). Dietary and physical activity regimens3). Insulin treatment – indications and contraindications, types of insulins(pharmacodynamics, dose regimens and schemes)4). Peroral treatment – groups of antihyperglycemic drugs, dose regimens and schemes 5). Hypoglycemia – definition, causes, clinical signs and treatment A presentation is attached to the lecture, see below pdf-256_32 Презентация към лекция № 6... (Файл pr6.pptx) |
| **Lecture № 7: Acute and chronic complications of diabetes.** |
| The acute and chronic complications of diabetes.have been presented there, with an emphasis of the acute, live threatening complications- diabetic ketoacidosis, hypoglycemic, hyperosmolar and lactacidosis comas . The differences in the ethiopathogenesis, the clinical manifestation, the laboratory parameters, diagnosis differential diagnosis and treatment have been pointed out.Details about the common pathogenic mechanisms for the late micro- and macrovascular complications, the difference between them and the stages of their development, the methods of early diagnosis, treatment and prophylaxis. The main role for the prophylaxis is the optimal glycemic in order to lengthen the live and reduce the cardio vascular incidence and mortality, providing a better quality of life in type two diabetes patients A presentation is attached to the lecture, see below pdf-256_32 Презентация към лекция № 7... (Файл pr7.pptx)  |

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 ***Table 3. Information about the lecture tasks (aims, instructions, terms, etc.)***

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| **Educational task № 1.** The aim of the task is to look at the main clinical units in Endocrinology and to analize the clinical, laboratory, hormonal and instrumental data in order to consider a proper diagnosis. Mainly, the goal of this task is directed to the diseases of the hypothalamus-hypophysal gland axis. A positive score from executing the task is a condition for a successful finishing the expected in the beginning of the first lecture training. |
| **Educational task № 2.** Developing practical skills for diagnosis and treatment to a patient with a thyroid gland disease. The aim of the task is to exercise a different diagnostic-therapeutic approach to patients either with hyper-, or with hypofunction of the thyroid gland. A positive score from executing the task is a condition for a successful finishing the expected in the beginning of the second lecture training. |
| **Educational task № 3.** Developing specific knowledge and skills in observing and treatment of patients with parathyroid gland disease in the area of impaired calcium phosphate turnover.The aim of the task is to develop clinical skills for taking anamnesis, physical status and applying stimulation probes for latent hapocalciemia as well as a correct interpretation of the results of different laboratory and imaging tests. The required knowledge for this educational task is forseen in the content of lecture number three.  |
| **Educational task № 4.** The aim of the task isto develop practical skills **in classifying the different types hypercorticism or hypocorticism,** and to apply the attained knowledge for the main approaches forming the diagnosis – laboratory methods, hormonal tests, diagnostic suppression and stimulation of cortisol secretion tests, as well as treatment methods. The required knowledge for this educational task is forseen in the content of lecture number four.  |
| **Educational task № 5.** The aim of this task is classify the different types of diabetes, the difference between the clinical signs in type 1 and type 2 diabetes, diferetial diagnosis of polydipsia polyuria syndrome and hyperglycemia. The assigned knowledge of this task is the forming of the diagnosis diabetes and the interpretation of the results from OGTT.A positive score from executing the task is a condition for a successful finishing the expected in the beginning of the fifth lecture training. |
| **Educational task № 6**. The aim of this task is to practice the abilities for choosing and applying hypoglycemic treatment in type 1 and type 2 diabetes patients, to exercise the applying of insulin with insulin pen and to learn the indications and contraindications for insulin treatment, the right choice of drug, dosing regimen and schemes, as well as developing skills for treatment with oral agents. Specific knowledge about recommendations for dietary treatment, glucose monitoring and training has been attained The required knowledge for this educational task is forseen in the content of lecture number six. |
| **Educational task № 7**. The aim of this task is to apply the differentiation of clinical signs and differential diagnosis of the acute complications of diabetes, as well as to attain knowledge about the therapeutic approach applied in each of them. In this task the difference between the micro- and macrovascular complicatiions of diabetes should be learned as well as the possibilities for prevention. A positive score from executing the task is a condition for a successful finishing the expected in the beginning of the seventh lecture training. |

 ***Table 4. A score scale for the endocrinology quiz***

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| **Level of success** | **Mark** |
| 90 – 100 % | 6.00 |
| 76 – 89 % | 5.00 |
| 63 – 75 % | 4.00 |
| 50 – 62 % | 3.00 |
| 0 – 49 % | 2.00 |

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 **/Assoc. Prof d-r Katya Todorova, PhD./**