MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

International Faculty

Department of obstetrics and gynecology

CONFIRMED by
Vice-rector for scientific and pedagogical work
Eduard BURIACHKIVSKYI
«29» August, 2024

METHODOLOGICAL RECOMMENDATIONS
FOR PRACTICAL CLASS

International Faculty, Course VI

Discipline "Obstetrics and Gynecology"

Practical lesson №24. Topic: Disorders of the menstrual function in reproductive age. Neuroendocrine syndromes in gynecology. Physiological and pathological conditions of the reproductive system at different ages.

Approved:

Meeting of the Department of Obstetrics and Gynecology of Odesa National Medical University

Protocol No. 1 dated August 29, 2024.

Head of the Department_____ (Ihor GLADCHUK)

Developer:
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obstetrics and gynecology department_____ (Y. Onyshchenko)

Practical class № 24.

Topic «DISORDERS OF THE MENSTRUAL FUNCTION IN REPRODUCTIVE AGE. NEUROENDOCRINE SYNDROMES IN GYNECOLOGY. PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS OF THE REPRODUCTIVE SYSTEM AT DIFFERENT AGES»

LEARNING OBJECTIVE is to gain basic knowledge about etiology, pathogenesis of disorders of the menstrual function in reproductive age, pathogenesis and etiology of the neuroendocrine syndromes, classification of menstrual disorders and the scope of the examination and the treatment plan of patients. To determine etiological and pathogenetic factors in disorders of the reproductive system and menstrual function. Evaluate the results of the examination, make a preliminary diagnosis.

BASIC CONCEPTS: Classification of disorders of the reproductive system (menstrual function).

Amenorrhea: classification, diagnosis, tactics of a GP for amenorrhea.

Abnormal uterine bleeding: general classification by FIGO, diagnosis, tactics of a GP, emergency care.

Juvenile uterine bleeding: etiology, clinic, diagnosis, tactics of a general practitioner, emergency care.

Postmenopausal uterine bleeding: etiology, clinic, diagnosis, tactics of a general practitioner, emergency care.

Algodismenorrhea. Symptomatic, diagnosis and treatment.

Neuroendocrine syndromes in gynecology: general classification

EQUIPMENT

– Multimedia equipment (computer, projector, screen), TV.

– Obstetric models and obstetric instruments (pelvimeter, obstetric stethoscope, centimeter tape).

– Professional algorithms, structural-logical schemes, tables, videos.

– Results of laboratory and instrumental researches, situational tasks, patients, medical histories.

EDUCATIONAL TIME – 2 h

I. ORGANIZATIONAL STAGE

– Greetings,

– checking attendees,

– defining of educational goals,

– providing of positive motivation.

Normal menstrual function is due to the correct synchronous interaction of important parts of neuroendocrine regulation. This system include five levels of regulation and violation of any part of it leads to changes in a woman's menstrual function, varying in nature and severity - from abnormal uterine bleeding to amenorrhea. The following social questions as long incapacity for work, decrease in reproductive function that leads to infertility, high risk of development of precancerous diseases and endometrial cancer are closely connected with this pathology.

II. CONTROL OF BASIC KNOWLEDGE (written work, written testing, online testing, face-to-face interview, etc.)

2.1. Requirements for the theoretical readiness of students to perform practical classes.

Knowledge requirements:

– Communication and clinical examination skills.

– Ability to determine the list of required clinical, laboratory and instrumental studies and evaluate their results.

– Ability to make a preliminary and clinical diagnosis of the disease

– Ability to perform medical manipulations

– Ability to determine the tactics of physiological pregnancy, physiological labor and the postpartum period.

– Ability to keep medical records.

List of didactic units:

-Postnatal obesity

-Neurometabolic syndrome

-Postnatal hypopituitarism (Sheehan's syndrome).

-Premenstrual syndrome.

-Polycystic ovary syndrome

-Hyperprolactinemia

-Adrenal hyperandrogenia (pubertal and post-pubertal forms of adrenogenital syndrome).

-Climacteric syndromes

2.2. Questions (test tasks, tasks, clinical situations) to test basic knowledge on the topic of the class.

Questions:

Classification of disorders of the reproductive system (menstrual function).

Amenorrhea: classification, diagnosis, tactics of a GP for amenorrhea.

Abnormal uterine bleeding: general classification by FIGO, diagnosis, tactics of a GP, emergency care.

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Postmenopausal uterine bleeding: etiology, clinic, diagnosis, tactics of a general practitioner, emergency care.

Algodismenorrhea. Symptomatic, diagnosis and treatment.

Neuroendocrine syndromes in gynecology: general classification.

Test tasks

Direction: For each of the multiple-choice questions select the lettered answer that is the one best response in each case.

1. For the clinical manifestations of dysmenorrhea are not typical:

A. Headache

B. Nausea

C. Excessive blood loss

D. Abdominal pain

E. Irritability

2. An 18-year-old girl with normal development of secondary sexual signs complains of primary amenorrhea. Examination revealed that the vagina is underdeveloped, the uterus is absent. Specify the type of amenorrhea:

A. Physiological amenorrhea.

B. Amenorrhea, caused by hyperandrogenia.

C. Hypogonadotric amenorrhea

D. Eugonadotropic amenorrhea.

3. A 24 year old patient complains of amenorrhea. She had labor 13 months ago. Delivery was by caesarian section due to premature detachment of a normally located placenta and intrauterine asphyxia of the fetus. Labor was complicated with a massive blood loss of approximately 2000 ml due to coagulopathy. What test is indicated in this patient?

A. Ultrasound of the organs of the small pelvis

B. Testosterone blood test

C. Progesterone test

D. Gonadotropins test

E. Computer tomography of the head

4. A 20 year old patient complains of periodic menstruation delays for 2-4 months during the last 2 years. She noticed excessive hair growth on the anterior abdominal wall, mammary glands, and lower extremities. During the last year she gained 14 kg weight. Speculum examination: cervix is conic, closed, epithelium is whole. Body of uterus is in anterflexio, small, mobile, painless. Ovaries are palpated on both sides of the uterus, 4x6 cm, painless, firm. Posterior fornix is deep. Discharge is mucous. What is the most probable diagnosis?

A. Adrenogenital syndrome

B. Itsenko-Cushing syndrome

C. Adenoblastoma of ovaries

D. Stein - Leventhal syndrome (Polycystic ovarian syndrome)

E. Sheehan's syndrome

5. A 15 year old girl complains of bloody discharge from the vagina for 2 weeks, which began after a 3 month delay of menstruation. Menarche at 13 years. Irregular menstrual cycle. Blood analysis: Hb - 90 gr/l, erythrocytes - 2,0x1012/l, leukocytes - 5,6x109/l. Rectal exam: the uterus has a normal size, the appendages are not palpated. What diagnosis is most probable?

A. Juvenile bleeding

B. Incomplete abortion

C. Blood clotting disorder

D. Polyp of the endometrium

E. Cancer of the endometrium

6. A 27 year old patient complains of irregular menstruation, infertility for 4 years. Obesity, hypertrichosis. During bimanual examination: the uterus is small, the ovaries on both sides are enlarged, firm. Discharge - leucorrhoea. Examination showed that the basal temperature is monophase. What is the diagnosis?

A. Shihane syndrome

B. Simmonds syndrome

C. Polycystic ovarian syndrome

D. Genital tuberculosis

E. Asherman syndrome

7. The uterine form of amenorrhea can result from all specified below diseases, except:

A. None of the below ovarian cyst

B. Frequent curettage of the uterine cavity

C. Genital infantilism

D. Chronic inflammation nonspecific etiology

E. Tuberculosis of endometrium

8. What is not used for diagnosis of disorders of the menstrual cycle?

A. Tests of functional diagnostics

B. Investigation of the hormone levels in the blood

C. X-ray

D. Determining the level of TTH

E. Use all of the above

9. A 36 year old patient came to the female consultation with complaints of increased irritability, tearfulness, headache, and palpitation, edema of the hands and

feet, decreased urination, engorgement of the mammary glands. These symptoms occur and gradually increase some days before menstruation and disappear at the beginning of menstruation. The menstruation cycle is not dysfunctional. The listed complaints began last year. What is the diagnosis?

A. Climacteric syndrome

B. Shianne syndrome (postnatal hypopituitarism)

C. Premenstrual syndrome

D. Stein-Leventhal syndrome

E. Adrenogenital syndrome

10. A 35-year-old woman was addressed to the doctor 3 months ago with complaints of irregular profuse menstrual bleeding. The doctor administered oral contraceptives for 2 months. Despite of using oral contraceptives, bleeding continued. What is the conducting tactics?

A. Curettage of the uterus mucous membrane

B. Combined oral contraceptives

C. Estrogen

D. Nonspecific anti-inflammatory treatment

E. Progestin.

III. FORMATION OF PROFESSIONAL SKILLS (mastering skills, conducting curation, determining the treatment regimen, conducting a laboratory study, etc.).

3.1. Content of tasks (tasks, clinical situations, etc.).

Interactive task:

Students of the group are divided into 3 subgroups of 3-4 people each. They work in the classroom, reception department of the maternity or gynecological hospital, surgery room.

Tasks:

– Subgroup I - Gather special gynecologic anamnesis. Prepare a plan of inspection sick with various kinds of gynecological diseases. Make the plan of preoperative preparation at planned and urgent gynecologic operations. Management of the postoperative period.

– Subgroup II - Perform gynecological examination- Taking material from the vagina, cervical canal and urethra for examination.- Evaluate: the results of urogenital smear microscopy, cytological examination, colposcopy; results of

bacteriological and other methods; results of ultrasound examination; results of functional tests

– Subgroup III – to assess answers of subgroups I and II and makes adjustments.

Tests:

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3.2. Educational materials, recommendations (instructions) for performing tasks

Disorders of the menstrual cycle of the central genesis can be: cortico-hypothalamic, hypothalamo-hypophysial, hyperphysical. There are also disorders of the menstrual function that are caused by a change in the function of the secondary glands of inner secretion: adrenal glands, thyroid gland. The main tasks when examining patients with disorders of the menstrual cycle are the following: 1) presence or absence of organic damage to the hypothalamus and hypothesis, ovaries and uterus, thyroid gland and adrenal gland, and also extragenital diseases; 2) determine the level of functional damage in the regulation of the menstrual function.

The examination is conducted in several stages:

I stage – pre-admission stage: collect the anamnesis, clarify the menogram, general and gynecological examination, blood test, urine test, coagulagram, blood test for RW and HIV. In this stage, functional diagnostic tests, rontgenography of the skull in two projections, check the field of vision and fundus of the eye, ultrasound of the organs of the small pelvis, the level of sugar in the blood and urine, cholesterol in the blood, research of the sex chromatin, toxoplasmin and tuberculin tests, functional tests of the liver, thyroid gland, determine 17–KS, 17-OKS, the level of hormones in the blood plasma are also preformed; consultation with specialists is conducted (neurologist, endocrinologist, therapist, etc.).

II stage – this stage contains additional, the most difficult methods and is performed in the hospital: biopsy of the endometrium, endoscopy of the genitals (hysteroscopy, colposcopy, laparoscopy), Metrosalpingography.

III stage – focused examination: additional X-ray study of the skull, examination of the fundus of the eye and field of vision, quantitative determination of the hormones in the blood plasma in the dynamics of the menstrual cycle and in the dynamics of supervision, functional hormonal tests. As a result, the studies should give information about the state of the target organ; determine the level of disorder in the system.

The absence of menstruation in an adult woman for 6 months is called amenorrhea.

Amenorrhea.

Amenorrhea is the absence of menstruations during 6 months and longer in women aged 16–45 years.

Pathological amenorrhea is also classified depending on the level of affection of a certain part of the reproductive system. According to this there are differentiated

hypothalamic-pituitary, ovarian, and uterine forms of amenorrhea, and also amenorrhea conditioned by pathology of the adrenal glands, thyroid gland, and the presence of extragenital diseases.

Such forms of amenorrhea are determined:

true amenorrhea – the absence of menstruation caused by a disorder in the production of the sexual organs;

false amenorrhea – the absence of menstruation because of a disorder in the cyclic changes in the ovaries and with the presence of obstacles in the outflow of menstrual blood;

Primary amenorrhea.

Primary amenorrhea with no sexual development: - gonadal digenesis (Shereshevsky–Turner syndrome, Swayer syndrome); - testicular feminization (Morris syndrome).

Primary amenorrhea with sexual development delay: - resistant ovary syndrome (in case it arises in the prepubertal period); - hypogonadotropic hypogonadism.

Primary amenorrhea without sexual developments: - Maldevelopments of the vagina and uterus (uterine and vaginal aplasia – Rokitansky–Kuestner syndrome; atresia of the hymen, vagina, and cervical canal of uterus).

Secondary amenorrhea:

Asherman's syndrome (intrauterine synechias as a consequence of traumatic injuries of the uterus);

hypergonadotropic hypogonadism;

hypogonadotropic hypogonadism;

emotional amenorrhea;

weight loss amenorrhea/

Secondary amenorrhea arises after a period of normal or disturbed menstrual cycle and makes up to 75 % in the structure of amenorrhea. This form of amenorrhea is not accompanied by sexual development derangement. Depending on the degree of reproductive system affection there are differentiated hypothalamic, hypophysial, ovarian, and uterine forms of amenorrhea.

1) Hypothalamic amenorrhea: - emotional amenorrhea, including at anorexia nervosa; - amenorrhea at false pregnancy; - Chiari–Frommel's syndrome – amenorrhea and galactorrhea, which arises as a complication of the puerperal period, often after an abnormal labor and pathological pregnancy; - Forbes–Albright's syndrome – amenorrhea and galactorrhea, which arises as a consequence

of a psychogenic trauma, a hypothalamic pituitary tumor, and also after intake of some medications, namely hormonal contraceptives, neuroleptics, hypotensive and antihistaminic preparations in nulliparous.

2) Hypophysial amenorrhea is most often met in the following pathologies: - Sheehan's syndrome (puerperal hypopituitarism); - amenorrhea against the background of Hyperprolactinemia as a consequence of pituitary micro- or macroadenoma; - Morphan's syndrome (a hereditary disease, which is transmitted by the dominant type); - Itsenko–Cushing's disease.

3) Ovarian amenorrhea: - resistant ovary syndrome; - ovarian exhaustion syndrome.

4) Uterine secondary amenorrhea: - Asherman's syndrome (the presence of intrauterine synechias); - cervical canal stenosis.

Dysfunctional uterine bleedings (DUB) are the bleedings conditioned by disturbances of the cyclic secretion of ovarian hormones and not connected with organic diseases or extragenital pathologies. DUB incidence makes 15–20 % of all gynecological pathologies. DUB development is based on the dysfunction of the hypothalamo-pituitary-ovarian system, which leads to the disturbance of folliculo- and steroidogenesis. DUB may arise at any age. However, they have their peculiarities in different age periods. These differences are the basis of DUB classification. Every period in a woman's life presents an imprint on the possibility of DUB occurring and requires individual approach in conducting the diagnostics and therapy. Therefore, the clinical practice the following are determined:

DUB of the pubescence period (juvenile bleeding);

DUB of the reproductive period;

DUB of the premenopausal period (climacteric bleeding) in women over 40.

DUB classification by the character of menstrual irregularities and functional-morphological changes:

Anovulatory DUB: a) short-term follicle persistence; b) long-term follicle persistence. c) Immature follicle atresia.

Ovulatory DUB. According to the estrogen level DUB divided into hyperestrogenic (most DUB) and hypoestrogenic (more frequent in the puberty, but may also be observed at the childbearing age).

The system has been approved by the FIGO Executive Board as a FIGO classification system.

There are 9 main categories, which are arranged according to the acronym PALM-COEIN (pronounced “pahm-koen”). PALM criteria:

Polyp (AUB-P) there seems to be little controversy regarding the inclusion of endometrial and endocervical polyps. These epithelial proliferations comprise a variable vascular, glandular, and fibromuscular and connective tissue. Component and are often asymptomatic, but it is generally accepted that at least some contribute to the genesis of AUB.

Adenomyosis (AUB-A) generally, these criteria have been based on histopathology evaluation of the depth of “endometrial” tissue beneath the endometrial–myometrial interface, as determined via hysterectomy.

Leiomyoma (AUB-L) Benign fibromuscular tumors of the myometrium are known by several names, including “leiomyoma,” “myoma,” and the frequently used “fibroid.” “Leiomyoma” is generally accepted as the more accurate term and was selected for use in the present system.

Malignancy and hyperplasia (AUB-M) Although relatively uncommon, atypical hyperplasia and malignancy are important potential causes of, or findings associated with, AUB and must be considered in nearly all women of reproductive age

Coagulopathy (AUB-C) The term “coagulopathy” encompasses the spectrum of systemic disorders of hemostasis that may be associated with AUB. Highquality evidence demonstrates that approximately 13% of women with HMB have biochemically detectable systemic disorders of hemostasis, most often von Willebrand disease.

Ovulatory dysfunction (AUB-O) Ovulatory dysfunction can contribute to the genesis of AUB, generally manifesting as a combination of unpredictable timing of bleeding and variable amount of flow (AUB), which in some cases results in HMB

Endometrial (AUB-E) When AUB occurs in the context of predictable and cyclic menstrual bleeding, typical of ovulatory cycles, and particularly when no other definable causes are identified, the mechanism is probably a primary disorder of the endometrium

Iatrogenic (AUB-I) There are several mechanisms by which medical interventions or devices can cause or contribute to AUB (AUB-I). These include medicated or inert intrauterine systems and pharmacologic agents that directly impact the endometrium, interfere with blood coagulation mechanisms, or influence the systemic control of ovulation.

In general, the components of the PALM group are discrete (structural) entities that can be measured visually with imaging techniques and/or histopathology, whereas the

COEIN group is related to entities that are not defined by imaging or histopathology (non-structural).

Juvenile Uterine Bleedings

Juvenile uterine bleedings (JUB) are referred to the most frequent pubertal gynecological disorders, their incidence reaches 10 %. Etiology and pathogenesis. JUB pathogenesis is based on the functional immaturity of the hypothalamic pituitary structures in the puberty, which declares itself in the absence of a formed circhoral rhythm of gonadoliberin secretion. This brings to a misbalance of gonadotropin production, and in consequence of that follicle maturing is disturbed, more frequently by the type of immature follicle atresia, and then comes anovulation.

The etiologic factors, which promote JUB development, are very versatile. An important role is played by chronic and acute infectious diseases, hypovitaminoses, psychic traumas, overload, which violate the functioning of the hypothalamo-pituitary-ovarian system. As a result, against the background of low estrogen level a couple of follicles begin to grow to the antral condition. Further development of the follicles is taking place under the action of FSH, whose cyclic production is violated in this case. Owing to this the follicles do not mature completely and undergo atresia (immature follicle atresia). At that, steroidogenesis in the ovaries is disturbed. In immature follicle atresia in the ovaries insufficient amount of estrogens is produced, but their long-term action on the endometrium leads to the development of hyperplastic processes. Anovulation results in yellow body absence, and that accordingly leads to progesterone deficit. Progesterone deficit conditions the absence of the secretory transformation of the endometrium. In case of follicle involution there arises bleeding as a reaction to hormone decrease. Bleedings lead to anemia, which is the most marked in JUB.

Clinic diagnostic criteria of JUB:

Bleedings last up to 20–30 days, but usually they are not that voluminous in comparison with follicle persistence. Bleedings are preceded by 2–3-month menstruation delay (usually lasting longer than in case of follicle persistence);

anemia;

anovulation;

functional diagnostic tests: hypothermic single-phase character of the temperature profile, the basal rectal temperature does not reach 37° C; pupil phenomenon “±” or “+”;

the cariopicnotic index (CPI) in this pathology does not exceed 28–35 %;

pelvic ultrasound may show hypoplastic uterus or endometrium hyperplasia;

hormone research: low progesterone level in blood;

Dysfunctional Uterine Bleedings in the Premenopausal Period

DUB incidence in the premenopausal period makes 15 % in the structure of gynecological disorders. Etiology and pathogenesis. In most women of this age the main pathological mechanism of DUB is anovulatory dysfunction of the ovary with long-term follicle persistence. Long-term follicle persistence (2–6 weeks) with considerable menstruation delays (up to 1.5 months) followed by severe long-term bleedings is called metropathia hemorrhagica, or Shroeder's disease.

While JUB is a consequence of no steady cyclic function of the hypothalamo-pituitary-ovarian system, premenopausal bleedings are a consequence its involution disturbances. Age-related changes of the hypothalamic structures, which regulate the gonadotropin function, condition disturbance of the rhythm and amount of gonadotropins released. FSH formation and release prevail, the LH level also rises, acquires a monotonous character. The decrease of gonadotropin receptors amount in the ovaries leads to a disorder of the feedback mechanism. This is accompanied by disturbed folliculogenesis and anovulation.

Yellow body absence, decreased progesterone secretion lead to hyperestrogenism development (relative hyperestrogenism against the background of hypoprogesteronemia) and endometrial hyperplasia of different level. In consequence of endometrium growth and insufficient trophism there develop dystrophic changes of the endometrium, which declare themselves with thrombosis, necrosis and irregular desquamation accompanied by long-term bleeding.

Clinico-diagnostic criteria:

Profuse long-term uterine bleedings with delays up to 1.5 months. It should be noted that menstruation delay is observed in the period of follicle growth and persistence;

anovulation; - functional diagnostic tests: • hypothermal monophase temperature profile; • the pupil phenomenon, colpocytology study shows a higher degree of estrogen saturation than in short-term follicle persistence; • a higher CPI – 80–100 %;

gynecological examination and pelvic ultrasound show somewhat oversized uterus and endometrial hyperplasia;

Histological study of the endometrium scrape shows endometrial hyperplasia more often than at the childbearing age – glandular hyperplasia, endometrial polyps. In long-term bleeding accompanied by mucosa desquamation the scrape may be scanty, but secretion signs are also absent in it.

Treatment DUB is complex and depends on the character of the ovariao-menstrual cycle irregularities, age, intensity and remoteness of the bleeding, the degree of anemia severity, the data of the laboratory methods of investigation, particularly hormonal status before the initiation of treatment. The treatment is provided in three stages:

Hemostasis.

Pathogenetic treatment aimed at rebreeding prevention (hormonal disorder correction, menstrual cycle restoration, or achieving menopause).

After treatment (recovery of the reproductive function in women of the childbearing age). Hemostasis (the 1st treatment stage). In order to achieve hemostasis one takes surgical, hormonal, and symptomatic measures.

Surgical hemostasis.

Hemostasis (the 1st treatment stage). In order to achieve hemostasis one takes surgical, hormonal, and symptomatic measures. DUB treatment at the childbearing and premenopausal age is begun with diagnostic and therapeutic dilatation and curettage of cervical and uterine mucous membranes. Under modern conditions surgical hemostasis may be conducted using the so-called little-invasive surgical procedures, which are applied under endoscopic control: cryodestruction, laser ablation, and thermal balloon ablation of the endometrium.

In JUB surgical hemostasis is carried out according to the following indications: - profuse uterine bleeding, which threatens the patient's life; - Hb 70 g/L and less, Ht below 25 %; - Suspected pathological changes of the endometrium structures (an endometrial polyp shown by pelvic ultrasound); - In patients with frequent rebreeding's and disease duration exceeding 2 years.

Hormonal hemostasis. For hormonal hemostasis one most often uses estrogens, gestagens and monophase combined estrogen-gestagen preparations, androgens, gonadoliberin agonists, gonadotropin antagonists. The choice of preparations depends on the pathogenetic variety of DUB, the patient's age, and contraindications. The action of the preparations is based on the inhibition of pituitary gonadotropic hormones and maintenance of the steroid hormone concentration at a high level.

Monophase combined oral contraceptives (COCs) are used for hormonal hemostasis the most often. Hemostasis regimen: on the first day 1 COC pill per hour is administered up to 4–6 pills (at the age of 14–15 years – up to 3 pills), then the preparation dosage is reduced daily to 1 pill a day. The preparation is taken during 21 days.

Hormonal hemostasis with COCs is not provided in the premenopausal period. Estrogens have a quick and rather high hemostatic effect.

For hormonal hemostasis one may use preparations of natural estrogens (non-synthetic), for example, progynova (estradiol valerate), and estraferm (17β-estradiol). These preparations are administered in the same way as oral contraceptives, but after hemostasis and intake of these preparations for 2 more weeks one should necessarily administer gestagens during 10 days.

Estrogens may be used for hemostasis at any age, but in the premenopausal period their use must be limited and conducted after a histological study of the endometrium. Gestagens have a hemostatic effect at the expense of influencing the endometrium transformation. They block proliferative processes and shift the endometrium into the secretory phase.

For hormonal hemostasis one uses gestagens of two classes: derivatives of 17-OH-progesterone (Dydrogesterone – duphaston 10 mg twice a day, medroxyprogesterone acetate – Depo-Provera 200–400 mg i.m. once a week; 17-oxyprogesterone capronate 2 ml 12.5 % i.m., etc.) and derivatives of 19-nortestosterone (levonorgestrel, norgestrel, lynestrenol – orgametryl, norethisterone acetate – primalut-nor, norcalut – 10 mg twice a day, etc.). Unlike estrogen hemostasis, gestagen introduction does not produce a quick bleeding arrest. In 1–2 days after the cessation of gestagen action there is always noted intensive bleeding of the menorrhagia type. Taking into account the ability of gestagens to cause endometrium atrophy and central effect inhibition in the juvenile age, it is not advisable to administer them at this age.

For hormonal hemostasis one may also use antagonists of pituitary gonadotropic hormones: - danazol (danoval, danogen, danol) – 200–400 mg/day, treatment duration makes 3–6 months; - gestrinone (nemestran) – 2.5 mg twice a week during 6 months, etc.

DUB may also be treated with gonadoliberin agonists: - goserelin (zoladex) – 1 injection (3.6 mg) during 28 days subcutaneously; - triptorelin (decapeptyl, dipherelin) – 3.75 mg i.m. once in 28 days. It should be added that androgen hemostasis is resorted to very rarely nowadays because of numerous contraindications and also in connection with pronounced virilization effects. One should remember that administration of hormonal treatment in teenager girls requires special caution and systematic control of the hormonal status of the organism with 3–6-month intervals. The doses of hormonal preparations in the period of menstrual function formation must be rationally limited. In girls one may use estrogens or combined estrogen-gestagen preparations for hormonal hemostasis. In all DUB types there are administered symptomatic hemostatic and uterotonics

preparations. There is used sodium etamsylar, ε-aminocapronic acid, tranexamic acid, 10 % calcium chloride solution.

Among uterotonics preference is given to ergot preparations, since unlike oxytocin they do not cause tonic contractions of the uterus (methylergometryl).

The doctor also administers vitamin therapy, tinctures of nettle, water pepper, and buckthorn.

The 2 -nd treatment stage foresees recovery of the menstrual cycle and recurrent bleeding prevention. At this stage there are administered general health improving preparations, hemostimulating and vitamin therapies are continued. Hormonal correction is carried out depending on the patient's age and is determined by the defined goal (menstrual cycle recovery, pregnancy planning, or menopause onset).

At this stage gestagens and COCs are used more often. The 2 -nd treatment stage is aimed at the recovery of the reproductive function in women of the childbearing age. When the rhythmical menstrual cycle is recovered, ovulation is induced with the application of direct (clomiphene, anestrozol, letrozol) and indirect ovulation inductors (gonadoliberin agonists, recombinant gonadotropins, human menopausal gonadotropins, etc.).

Neuroendocrine syndromes.

1. Postnatal obesity
2. Neurometabolic syndrome, unrelated to pregnancy.
3. Postnatal hypopituitarism (Sheehan's syndrome).
4. Premenstrual syndrome.
5. Polycystic ovaries (polycystic ovaries, primary polycystic ovaries, polycystic ovary syndrome, Stein-Leventhal syndrome – secondary polycystic ovaries).
6. Hyperprolactinemia.
7. Adrenal hyperandrogenia (pubertal and post-pubertal forms of adrenogenital syndrome).
8. Algomenorrhea.
9. Postcastration syndrome.
10. Menopausal disorders

Post-delivery hypopituitarism (Sheehan's disease).

Pathogenesis. Sheehan's syndrome develops as a result of necrotic changes in hypothesis, which follow the revulsion, intravascular coagulation in the frontal part of hypothesis or bacterial shock in delivery or abortion. Specifics of hypothalamus blood supply, the weight of frontal part of which during pregnancy becomes 2 times larger, as well as belladonna preparations widely used in the process of labor and hemorrhages contribute to these changes. The frequency of gestosis in woman with Sheehan's disease in pregnancy period makes it possible to think that they are the factor The frequency of gestosis in the period of pregnancy in women with Sheehan's syndrome, which is the gestosis-predisposing factor, as a tendency to intravascular coagulation in pregnant with severe form of gestosis is well-known. Furthermore, the fact that physiological decrease of ACTH discharge occurs after pregnancy, also contributes to hypothesis ischemia. Clinical manifestations of Sheehan's disease directly depend on the level of hypothesis injury level. A lot of sientists consider a marked disease to develop if 80% of adenohypotheysis tissue is damaged. But in several cases post-mortem examination showed about 5mm of hypothesis frontal part to be damaged, but there was no clinical symptomatology while alive. In addition there is information about patients which had marked post-delivery pituitairism, and post-mortem examination showed only slight injury of hypothesis.

Repetitive labors are considered to cause Sheehan's disease (the interval not less than 2 years).

Clinico-diagnostic criteria - it may be characterized by various level of endocrine glands hypofuntion – first of all of that of thyroid, renal and sex. There are such forms of Sheehan's disease, depending on the insufficiency of hypophysial tropic hormones:

1) Global form – with clinical manifestations of ТТН, gonadotropin, АКТГ. The course of the disease may be slight or severe;

2) Partial form – with gonadotropic, thyrotrophic, adrenocorticotropic function insufficiency;

3) combined gonadotropic and thyrotrophic function insufficiency; combined thyrotrophic and adrenocorticotropic.

Differentiated diagnosis is differentiated with nervous anorexia, hypophysial tumor, Addison's disease, and myxedema. Characteristic anamnesis of patients – bleeding or septic shock - helps a lot in making the diagnosis.

Treatment. Substitutive therapy, glucocorticoid and thyrotrophic drugs in clinical implications of the hypofuntion of the same glands are prescribed. There exists an opinion, that it is better to use cortisone and prednisolone then dexasone and

dexamethasone, as the last ones have a marked anticorticotropic property, in such a way inhibiting the production of ACTH by hypothesis, which has already been decreased. Prednisolone is recommended twice a day in 5mg doses during 2-3-weeks, one course of treatment per 2-3 months, with regard to the clinical picture. In amenorrhea or oligomenorea cyclic hormonotherapy is recommended to women before 40. After 40 androgens are used, due to their anabolic effect: methyl testosterones in once a day in 5mg, one course of treatment per 2-3 months; androgens are quite effective in anti-plead therapy. Such anabolic drugs as retabolil, methylandrostenediol and etc. turned to be effective. B, E, PP -group vitamins; biostimulators – aloe, Fibs (20-30 intramuscular injections) are necessary. Nutrition must be complete, with no protein deficiency. Anemia oriented iron drugs controlled by the blood analysis are indicated.

Patients with severe form of Sheehan's disease are ultimately treated in endocrinological dispensary. The prophylaxis of the disease includes professional therapeutically management of pregnant with gestosis, timely therapy, professional labor management with the bleeding prevention, and finally adequate resuscitation in labor bleedings, abortions and septic shock.

Premenstrual syndrome (PMS).

It is a complicated complex of symptoms, occurring in premenstrual days and is performed in form of CNS malfunctioning, caused by exo- or endogenic factors secondary to gained or inherited liability of hypothalamo-hypophysial-ovarian system. Usually the PMS symptoms develop 2-3 days before menses and pass just after menses onset or on its first days.

PMS frequency ranges differently in different age periods. At the age of 19-20 this syndrome occurs nearly in 20% of patients, after 30 it's grow up to 47%, and after 40-49 in women with regular menstruations – up to 55%. It is more common in women of intellectual work.

Pathogenesis. A great number of grounding theories (hormonal, "hydrointoxication", psychosomatic dysfunction) reflect the fact that it is difficult and poorly studied.

PMS classification

Classification after ICD-I0

N94 – pain and other conditions, connected with female genitals and menstrual cycle, premenstrual syndrome

PMS classification by clinical complex of symptoms and clinical manifestations of premenstrual dysfunction

-premenstrual syndrome

- Genuine premenstrual syndrome

-premenstrual dysphoretic dysfunctions

- Premenstrual magnification

Classification by the stage of severity:

-Light – development of 3-4 symptoms 2-10 days before menstruation with 1-2 brightly marked:

-Severe form – 5-12 symptoms, 3-14 days before, with 2-5 brightly marked

Classification by stages of development of PMS

- Compensated stage- PMS symptoms development in lutein phase of menstrual cycle and their neutralizing after menstruation onset without progressing with time;

- Sub compensated stage – the course of the disease is worsened with time, symptoms develop till the end of menstruation;

- Decompensated stage – severe course – PMS clinics still persists after the end of menstruation, the spans between patient's normal condition and symptoms become shorter.

Clinico-diagnostic criteria: PMS is a complicated complex of symptoms, characterized by various psychopathologic, vegeto-vascular and endocrine metabolic dysfunctions, developing in the lutein phase of MC.

Depending on the symptoms prevailing in the clinical picture four main forms of PMS are distinguished: neuropsychic, hydroptic, cephalic, critical. Although such definition is nominal to some extent, anyway in the clinical practice it is quite important both for short characteristics of PMS specific symptoms and for therapeutic correction management.

In most cases symptoms develop in the second phase of menstrual cycle, 7-10 days before menstrual bleeding.

Syndrome has several names:

-Premenstrual tension (PMT);

Premenstrual syndrome (PMS);

Premenstrual tension syndrome(PMTS);

Cyclic syndrome (CS).

Cyclic syndrome is the most exact definition, as it is known the complex of symptoms characteristic for premenstrual syndrome may replace cyclic course in

women with irregular menstruations, as well as in the prepubertal, postmenopause period. But the term PMS is the most widespread both in native and foreign literature.

Any system and organ of women's' organism may dysfunction in premenstrual days. But the most common symptoms are:

Tension, hydroids and pain in mammary glands; Headaches; Dizziness; Body weight decrease; Abdominal discomfort: abdominal distention, diarrhea, constipation; Thirst; Nausea, vomiting; Change of appetite: hunger for alcohol, spicy food, sweets; Pains throughout the body or in limbs, back, joints, lumbar region; Hyperesthesia of different parts of the body; Lethargy; Sleeplessness; Depression; Exhaustion; Aggression.

As a rule all the symptoms progress up till the onset of menstruation and stop with the beginning of bleeding or few hours before it. When classifying the symptoms by disorder of function of certain system the next symptoms may be distinguished:

Psychological dysfunction:

- Frequent changes of mood;
- Irritability;
- Inability to concentrate;
- Loss and deterioration of memory;
- Unfriendliness and aggression;
- Fatigue;
- Lethargy;
- Sleeplessness;
- Fear;
- Melancholy;
- Reasonless crying or laugh;
- Suicidal thoughts;
- Libido change.

Neurological symptoms:

- Headaches, migraine;
- Dizziness;
- Lurch;

- Hyperesthesia;
- Dysmenorrhea;
- Asthma;
- Rhinitis;
- Increase or development of cerebral seizures;
- Electric encephalogram shows increased irritability.

Dermatologic symptoms:

- Acne;
- Hives;
- Fever;
- Pruritus;
- Pigmentation of face and trunk;
- Dryness or abnormally fatty skin of face and scull;
- Pain in bones, joints, back;
- Anemia of muscles;
- Symptoms of arthritis - pains, edema;

Gastrointestinal symptoms:

- Deterioration of appetite, even bulimia and anorexia;

- Nausea, vomiting;
- Abdominal distention;
- Evacuation disorders

Renal symptoms:

- Accumulation of liquid as a result of renal dysfunction;
- Change of urine amount

Anti PMS treatment includes:

Medicated and non-medicated therapy:

Non-medicated therapy:

work and rest regimen normalization;

dosed physical activity;

psychotherapy;

physiotherapy, massage;

Dietary pattern normalization: The principles of healthful and dietary meals in PMS:

1. Controlled daily caloric intake - 1200 -1500 kilocalories:

30 % proteins;

20 % -fats;

50 % -carbohydrates

2. Dietary regimen: meals in small portions, 5-6 times per 24 hours. This regimen lets fat tissue metabolism be normalized and prevent the decrease the amount of blood sugar level.

3. The next products must be excluded: salt, tinned foods, frozen fruits and vegetables, strong cheese, smoked meats, pickled products, chips; simple carbohydrate; saturated fatty acids, animal fats; alcohol, which reduces vitamins and minerals reserves and disturbs carbohydrate metabolism in organism; tea, coffee, cacao, cola - coffeincontaining products, that may cause anxiety, irritation, tension in mammary glands.

4. It is useful to include such products to the diet:

A, B, C, E group vitamins (for every day intake)

-vitamin A-I0-15mg; vitamin B -25 -50 mg; (without B6 vitamin); vitamin E -100 -600 mg; vitamin C -100 mg; vitamin D -100 mg; Mg, K, Ca- macroelements, which take part in the nervous system regulation (including CNS), in water-electrolytic balance maintenance and in processes of microrelaxation; Zn, Se microelements, acting as antioxidants; sunflower, peanut oils, pout liver, unsalted roe; juices, carrot and lemon first of all; herbal teas.

Drug therapy of PMS is differentiate and is carried out depending on the level of severity and disease course. The groups of drugs are enumerated in order of prescription recommended to apply.

3.3. Requirements for the results of work.

Show the phantom method of physical examination on organ systems.

Show on phantom gynecological examination.

Demonstrate phantom performance tests of functional diagnostics, fractional diagnostic curettage of the uterus/

Collect special gynecological history, assess the results of laboratory studies (general and biochemical analyzes of blood, urine, blood coagulation system, etc.).

In gynecology department: to take the history, perform an objective and gynecological examination of the patient, to appoint examination

3.4. Control materials for the final stage of the class: tasks, tests, etc.

Tests

1. For the clinical manifestations of dysmenorrhea are not typical:

A. Headache

B. Nausea

C. Excessive blood loss

D. Abdominal pain

E. Irritability

2. An 18-year-old girl with normal development of secondary sexual signs complains of primary amenorrhea. Examination revealed that the vagina is underdeveloped, the uterus is absent. Specify the type of amenorrhea:

A. Physiological amenorrhea.

B. Amenorrhea, caused by hyperandrogenia.

C. Hypogonadotric amenorrhea

D. Eugonadotropic amenorrhea.

3. A 24 year old patient complains of amenorrhea. She had labor 13 months ago. Delivery was by caesarian section due to premature detachment of a normally located placenta and intrauterine asphyxia of the fetus. Labor was complicated with a massive blood loss of approximately 2000 ml due to coagulopathy. What test is indicated in this patient?

A. Ultrasound of the organs of the small pelvis

B. Testosterone blood test

C. Progesterone test

D. Gonadotropins test

E. Computer tomography of the head

4. A 20 year old patient complains of periodic menstruation delays for 2-4 months during the last 2 years. She noticed excessive hair growth on the anterior abdominal wall, mammary glands, and lower extremities. During the last year she gained 14 kg weight. Speculum examination: cervix is conic, closed, epithelium is whole. Body of uterus is in anterflexio, small, mobile, painless. Ovaries are palpated on both sides of the uterus, 4x6 cm, painless, firm. Posterior fornix is deep. Discharge is mucous. What is the most probable diagnosis?

A. Adrenogenital syndrome

B. Itsenko-Cushing syndrome

C. Adenoblastoma of ovaries

D. Stein - Leventhal syndrome (Polycystic ovarian syndrome)

E. Sheehan's syndrome

5. A 15 year old girl complains of bloody discharge from the vagina for 2 weeks, which began after a 3 month delay of menstruation. Menarche at 13 years. Irregular menstrual cycle. Blood analysis: Hb - 90 gr/l, erythrocytes - 2,0x1012/l, leukocytes - 5,6x109/l. Rectal exam: the uterus has a normal size, the appendages are not palpated. What diagnosis is most probable?

A. Juvenile bleeding

B. Incomplete abortion

C. Blood clotting disorder

D. Polyp of the endometrium

E. Cancer of the endometrium

6. A 27 year old patient complains of irregular menstruation, infertility for 4 years. Obesity, hypertrichosis. During bimanual examination: the uterus is small, the ovaries on both sides are enlarged, firm. Discharge - leucorrhoea. Examination showed that the basal temperature is monophase. What is the diagnosis?

A. Shihane syndrome

B. Simmonds syndrome

C. Polycystic ovarian syndrome

D. Genital tuberculosis

E. Asherman syndrome

7. The uterine form of amenorrhea can result from all specified below diseases, except:

A. None of the below ovarian cyst

B. Frequent curettage of the uterine cavity

C. Genital infantilism

D. Chronic inflammation nonspecific etiology

E. Tuberculosis of endometrium

8. What is not used for diagnosis of disorders of the menstrual cycle?

A. Tests of functional diagnostics

B. Investigation of the hormone levels in the blood

C. X-ray

D. Determining the level of TTH

E. Use all of the above

9. A 36 year old patient came to the female consultation with complaints of increased irritability, tearfulness, headache, and palpitation, edema of the hands and feet, decreased urination, engorgement of the mammary glands. These symptoms occur and gradually increase some days before menstruation and disappear at the beginning of menstruation. The menstruation cycle is not dysfunctional. The listed complaints began last year. What is the diagnosis?

A. Climacteric syndrome

B. Shianne syndrome (postnatal hypopituitarism)

C. Premenstrual syndrome

D. Stein-Leventhal syndrome

E. Adrenogenital syndrome

10. A 35-year-old woman was addressed to the doctor 3 months ago with complaints of irregular profuse menstrual bleeding. The doctor administered oral contraceptives for 2 months. Despite of using oral contraceptives, bleeding continued. What is the conducting tactics?

A. Curettage of the uterus mucous membrane

B. Combined oral contraceptives

C. Estrogen

D. Nonspecific anti-inflammatory treatment

E. Progestin.

IV. SUMMING UP

Current control: oral examination, testing, assessment of practical skills, solving situational clinical problems, assessment of activity in the classroom.

Criteria for current assessment on the practical lesson:

5 The student is fluent in the material, takes an active part in the discussion and solution of situational clinical problems, confidently demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies, expresses his opinion on the topic, demonstrates clinical thinking.

4 The student is well versed in the material, participates in the discussion and solution of situational clinical problems, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with some errors, expresses his opinion on the topic, demonstrates clinical thinking.

3 The student isn't well versed in material, insecurely participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with significant errors.

2 The student isn't versed in material at all, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of a pregnant and the interpretation of clinical, laboratory and instrumental studies.

RECOMMENDED LITERATURE

Basic:

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5. Kaplan. USMLE Step 2 CK Lecture Notes: Obstetrics and Gynecology. 2019.-pp. 365-454.

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