MINISTRY OF HEALTH OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY

International Faculty

Department of Obstetrics and Gynecology

I APPROVE
Vice-rector for scientific and pedagogical work
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METHODICAL DEVELOPMENT FOR PRACTICAL LESSONS FROM EDUCATIONAL DISCIPLINE

International Faculty, course VI

Elective discipline "Obstetrics and gynecology in the practice of a family doctor"

Practical lesson No. 7. Topic: "Miscarriage"

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

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Practical lesson No. 7

Topic: "Miscarriage"
Goal: To systematize and deepen knowledge on the topic "Non-carrying pregnancy". Expand knowledge about various stages of spontaneous abortion and premature birth, isthmic-cervical insufficiency. To create in students of higher education a sense of responsibility that a general practitioner should have in relation to pregnant women from the risk group for the occurrence of this pathology.
Basic concepts: Spontaneous miscarriage. Isthmic-cervical insufficiency (ICN). Premature birth. Classification and diagnosis.
Equipment: Professional algorithms, structural and logical schemes, tables, models, video materials, results of laboratory and instrumental studies, situational problems, patients, medical histories.

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

Miscarriage is from 10 to 20-35% of the number of pregnancies and there is no tendency to decrease.

The relevance of this problem is determined not only by medical, but also by social aspects, as the failure to carry a pregnancy leads to a decrease in the birth rate, affects the physical and mental health of a woman, her family well-being, work capacity and is often determined by the high perinatal mortality of premature children, significant economic costs, which are related to their care, as well as the significant fate of these children among the disabled from childhood and patients with chronic pathology.

2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.).

- Requirements for the theoretical readiness of students of higher education to perform practical classes.

Knowledge requirements:

- the ability to collect medical information about the patient and analyze clinical data;
- the ability to determine the necessary list of laboratory and instrumental studies and evaluate their results;
- the ability to establish a preliminary and clinical diagnosis of the disease;
- the ability to determine the necessary regime of work and rest in the treatment and prevention of diseases;

- the ability to determine the nature of nutrition in the treatment and prevention of diseases;
- the ability to determine the principles and nature of treatment and prevention of diseases;
- the ability to perform medical manipulations;
- ability to maintain medical documentation, including electronic forms.

List of didactic units:

- spontaneous abortion;
- isthmic-cervical insufficiency;
- premature birth

- **Questions (test tasks, problems, clinical situations) to check basic knowledge on the subject of the lesson.**

Question:

- Definition and classification of miscarriage.
- Risk factors for miscarriage.
- Etiology of miscarriage.
- Clinic, diagnosis and tactics of the family doctor's actions in case of threatened abortion.
- Clinic, diagnosis and tactics of actions of a family doctor during an abortion in progress.
- Clinic, diagnosis and tactics of family doctor's actions in case of incomplete abortion.
- Clinic, diagnosis and tactics of the family doctor's actions in case of complete abortion.
- Clinic, diagnosis and tactics of the family doctor's actions in the event of an abortion that did not take place (termination of the development of the embryo/fetus).
- Isthmic-cervical insufficiency (ICN): definition, diagnosis and tactics of actions of a family doctor.
- Premature birth: definition, diagnosis, family doctor's tactics.
- Prevention of miscarriage.

Typical situational tasks:

1. A 23-year-old woman was hospitalized with complaints of aching pain in the lower abdomen, delayed menstruation (the last menstruation was 6 weeks ago), minor vaginal discharge. First pregnancy. Vaginal: the cervix is tilted back, 2.5 cm long, the external eye is closed, the discharge is insignificant, bloody. The body of the uterus is enlarged up to 6 weeks of pregnancy, in hypertonus. Appendices - without features. Make a diagnosis.

Answer: Diagnosis: Pregnancy I, 6 weeks. Threatened abortion.

2. A 10-11 week pregnant woman was admitted to the gynecology department with complaints of severe spasm-like pain in the lower abdomen and lower back, profuse bleeding from the vagina. Pregnancy II. During a gynecological

examination: the cervix is centered, the external eye is open, parts of the fetal egg are in the cervical canal. The uterus is enlarged up to 10 weeks of pregnancy, in increased tone. What is the diagnosis?

Answer: Diagnosis: Pregnancy II, 10-11 weeks. Abortion in progress.

Typical test tasks:

1. Miscarriage is an involuntary termination of pregnancy at term:

A. From the beginning of pregnancy to 36 weeks + 6 days.
A. From the beginning of pregnancy to 22 weeks.
S. From 12 to 22 weeks.
D. From the beginning of pregnancy to 12 weeks.

2. Early spontaneous abortion is an involuntary termination of pregnancy in the term:

A. From the beginning of pregnancy to 22 weeks.
A. From the beginning of pregnancy to 12 weeks.
C. From the beginning of pregnancy to 37 weeks.
D. From 12 weeks to 22 weeks.

3. A late spontaneous abortion is an involuntary termination of pregnancy in the term:

A. From the beginning of pregnancy to 12 weeks.
A. From 10 to 20 weeks.
S. From 22 to 37 weeks.
D. From 12 to 22 weeks.

4. Premature birth is birth during pregnancy:

A. From the beginning of pregnancy to 37 weeks.
A. From 12 to 37 weeks.
S. From 22 to 37 weeks.
D. From 12 to 22 weeks.

Correct answers: 1 - A; 2 – B; 3 – D; 4 - S.

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.).

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

Interactive task:

The winners of the group are divided into 3 subgroups of 4-5 people each. We work in women's consultation rooms with gynecological patients, we give tasks:

And the subgroup - to make a preliminary diagnosis.

Subgroup II - to draw up a patient management plan.

Subgroup III – evaluates the correctness of the answer of subgroups I and II and makes its corrections.

Unusual situational tasks:

1. A first-time pregnant woman had an involuntary abortion at home at 5-6 weeks of gestation. During a vaginal examination: the external genitalia are developed correctly, without signs of inflammation, the vagina is free, the cervix is formed, the cervical canal passes through the tip of the finger, the uterus is dense, painless on palpation, slightly increased in size. The appendages of the uterus are not enlarged, painless, the vaginal vaults are free; discharge is bloody, insignificant.

Task:

1. What stage of spontaneous abortion does this clinical picture correspond to?
2. The next tactic?

Answer:

1. Pregnancy I, 5-6 weeks. Complete abortion.
2. In the absence of complaints, bleeding and tissue in the uterine cavity according to ultrasound, there is no need for an instrumental revision of the uterus. Control ultrasound examination in 1 week. The need for prophylactic use of antibiotics is based on individual clinical indications.

2. A pregnant woman with a gestational age of 16 weeks was admitted to the maternity hospital with complaints of periodic pulling pains in the lower abdomen and in the lumbar region, dark bloody discharge from the genital tract, nausea, weakness. During vaginal examination: the uterus is enlarged up to 12 weeks of pregnancy. During ultrasound: fetal heart activity is not visualized, displacement of skull bones.

Task:

1. What is the most likely diagnosis?
2. The next tactic?

Answer:

1. Pregnancy II, froze at 12 weeks.
2. Urgently carry out the evacuation of fetal tissues from the uterine cavity surgically. The need for prophylactic use of antibiotics is based on individual clinical indications. Remember: finding a non-developing pregnancy in the uterine cavity for 4 weeks or more increases the risk of coagulopathic complications.

Non-typical test tasks:

1. A pregnant woman at 11-12 weeks was admitted to the obstetric hospital with complaints of cramp-like pains in the lower abdomen, significant bleeding. Gynecological examination: the cervix is shortened, the external eye is open, parts of the fetal egg are in the cervical canal; the tone of the uterus is increased, the size of the uterus corresponds to the period of pregnancy; discharge is bloody, significant. What is the stage of spontaneous abortion?

A. Threatened abortion
V. Abortion in progress
S. Incomplete abortion
D. Complete abortion.

2.A pregnant woman at 11-12 weeks was admitted to the obstetric hospital with complaints of cramp-like pains in the lower abdomen, significant bleeding. Gynecological examination: the cervix is shortened, the external eye is open, parts of the fetal egg are in the cervical canal; the tone of the uterus is increased, the size of the uterus corresponds to the period of pregnancy; discharge is bloody, significant. What are the driving tactics?

A. Prescribing progesterone drugs
B. Appointment of tocolytic drugs
C. Curettage of the walls of the uterine cavity
D. Bed rest, observation

Correct answers: 1 – B, 2 – C.

- **Recommendations (instructions) for performing tasks (professional algorithms, orienting maps for the formation of practical skills and abilities, etc.).**

Miscarriage:

- early spontaneous abortion - spontaneous (voluntary) termination of pregnancy up to 11 weeks + 6 days:
- late spontaneous abortion from 12 to 21 weeks + 6 days;
- premature birth from 22 full to 36 weeks + 6 days (154 - 259 days).

Spontaneous abortion (involuntary, spontaneous miscarriage)- expulsion of the embryo/fetus in the period of pregnancy up to 22 weeks or weighing up to 500 grams, regardless of the presence or absence of signs of life.

According to the stages of drinking, the following are distinguished:

- Threatened abortion
- Abortion in progress
- Incomplete fetch
- Complete abortion.

In addition, there are:

- Abortion that did not occur (termination of the development of the embryo/fetus);
- Infected abortion.

*Hemodynamic indicators should be carefully monitored until uterine pregnancy is confirmed.

Table 2 . The scope of examination in case of habitual miscarriage

№ п/п	Way of observation	Before the pregnancy	During pregnancy
1	Analysis of anamnesis	+	+

2	Consultation of the different narrow physicians	+	+
3	Medical examination for identification of urogenital agents	+	+
4	Tests of functional diagnostics	+	+ -
5	Evaluation of hormonal levels and its metabolists	+	+
6	Ultrasound scan	+	+
7	State of Hypothisis	+	- -
8	Immunology investigation if needed	+	+
9	Antibodies to honadothropyn, antyspermal and antyovary antybodies if needed	+ +	+ -
10	Genetic examination (caple caryotiping)	+	-
11	Prenatal diagnostic	-	+
12	Hysterosalpingoscopy and hysteroscopy if needed	+	-
13	Hemostaziograma. Investigation of coagylation system	+	+
14	Estimation of the cervix condition	+	From 12 weeks

Premature birthis childbirth with spontaneous onset, progression of labor and birth of a fetus weighing more than 500 g in the period of pregnancy from 22 weeks to 37 weeks

In connection with the peculiarities of obstetric tactics and the upbringing of children born at different stages of gestation, it is advisable to distinguish the following periods:

- 22 - 27 weeks;

- 28 - 33 weeks;
- 34 - 36 weeks + 6 days of gestation.

Principles of management of premature birth:

- ***Degree evaluation***predicted risk of developing maternal and perinatal pathology in order to determine the level of inpatient care.
- ***Definition of management plan***childbirth and its informed coordination with the woman.
- ***Condition control*****mother**and the fetus during childbirth with partogram management.
- ***Prevention***respiratory distress syndrome up to 34 weeks of pregnancy.
- ***Analgesia for childbirth***according to the indications.
- ***Assessment of the child's condition***, maintaining the thermal chain, carrying out the child's primary toilet, mother and child staying together from the first hours, wide use of the "kangaroo" method when weaning children with low weight.

Pre-pregnancy preparation includes:

• Termination of harmful effects:

1. Quit smoking.
2. Refusal to drink alcohol.
3. Exclusion of the influence of factors of harmful industrial production.
4. Avoiding psycho-emotional overload and stress.

• Women's recovery and treatment of chronic diseases:

1. Normalization of the regime of work and rest.
2. Creating favorable psycho-emotional conditions at work and in the family (everyday life).
3. Rational nutrition.
4. Regular physical activity (morning gymnastics, swimming, walks, etc.).
5. Sanitation of extragenital foci of chronic infection (tonsillitis, sinusitis, pyelonephritis, etc.).
6. Normalization of body weight.
7. Vaccination against rubella of immunonegative women for the prevention of congenital rubella.
8. Vaccination against hepatitis B of women of reproductive age at risk, which provides prevention of vertical transmission of infection, reducing the risk of liver failure and liver cirrhosis in the mother.
9. Preparation of patients with chronic extragenital diseases:

• diabetes: stable compensation of carbohydrate metabolism for three months before fertilization and the appointment of folic acid 800 mcg per day for 3 months before conception;

• arterial hypertension (maintenance of normotension, switching to antihypertensive drugs, additional use during pregnancy is allowed);

• hypothyroidism (correction of L-thyroxine replacement therapy to achieve a euthyroid state);

- epilepsy (switching to anticonvulsants with less negative effect on the fetus, increasing the dose of folic acid to 800 mcg per day 3 months before conception);
- heart defects (radical surgical treatment according to indications);
- diseases that require constant anticoagulant therapy (cancellation of teratogenic coumarin derivatives, appointment of heparin)
- other extragenital diseases (surgical treatment, correction of therapy, achieving disease remission).
- detection and treatment of HIV infection.

Algorithm for performing practical skills.

Measurement and assessment of the size of the female pelvis.

1) greet the patient;
2) identify the patient (name, age);
3) inform the patient about the necessity of conducting the study;
4) explain to the patient how the study is conducted;
5) obtain permission to conduct research;
6) wash hands;
7) put on inspection gloves;
8) pick up a tazometer;
9) place the tasomer buttons on the front-upper spines of the iliac bones (indicate the normative indicator of D. spinarum = 25-26 cm);
10) transfer the buttons of the tazomer to the most distant places of the crests of the iliac bones (specify the standard indicator of D. cristarum = 28-29 cm);
11) install tasomer buttons on the large trochanters of the femurs (indicate the normative indicator of D. trochanterica = 30-31 cm);
12) lay the patient on her left side with the left leg bent at the knee joint; measure the distance from the upper edge of the symphysis to the suprasacral fossa (indicate the normative indicator of C. externa = 20-21 cm);
13) during the internal obstetric examination, measure the distance from the lower edge of the symphysis to the sacral promontory (indicate the normative indicator of C. diagonalis = 12.5-13 cm);
14) inform the patient about the results of the study;
15) thank the patient;
16) remove inspection gloves;
17) wash your hands.

Bimanual (vaginal) examination:

1) say hello to the patient;
2) identify the patient (name, age);
3) to inform the patient about the necessity of conducting the study;
4) explain to the patient how the study is conducted;

5) obtain permission to conduct research;
6) wash hands;
7) put on inspection gloves;
8) with the first and second fingers of the left (right) hand, spread the labia majora, place the middle finger of the "dominant" hand at the level of the posterior adhesion, gently press on it to open the entrance to the vagina;
9) carefully and slowly insert the middle finger, then the index finger into the vagina along the back wall to the vault and cervix, bring the fourth and fifth fingers to the palm, bring the thumb to the top;
10) determine the length of the vaginal part of the cervix in centimeters;
11) determine the consistency of the cervix (dense, soft);
12) determine the patency of the external eye of the cervical canal (closed, a fingertip passes through);
13) to assess the painfulness of the excursion of the cervix;
14) the second palm should be carefully placed on the abdomen (above the symphysis) and moderately pressed to determine the bottom of the uterine body;
15) take the body of the uterus between two hands and determine:
    - the position of the uterus relative to the cervix (anteflexio, retroflexio);
    - the size of the uterus (normal, reduced, increased);
    - the consistency of the body of the uterus (tight-elastic, soft, compacted);
    - mobility of the uterine body (relatively mobile, limited mobility);
    - sensitivity during palpation (painful, painless);
16) place your fingers in the bottom of the right lateral vault and, using both hands, palpate the right vaginal vault and right appendages of the uterus, determine their size, mobility and pain;
17) place your fingers in the bottom of the left lateral vault and, using both hands, palpate the left vaginal vault and the left appendages of the uterus, determine their size, mobility and painfulness;
18) determine the capacity of the vaginal vaults;
19) inform the patient about the results of the study;
20) thank the patient;
21) remove examination gloves;
22) wash hands

- **Requirements for work results, including to registration**
- Collect the anamnesis and highlight the signs of miscarriage.
- Make a plan for examination of patients with miscarriage.
- Draw up a treatment plan for patients with miscarriage.
- Diagnose the threat of premature birth.
- Oral report about the thematic patient.
- Analysis and discussion of the results of the patient's examination.
- Multimedia presentation on the topic of the class (literature review using modern sources; video films, etc.).

- **Control materials for the final stage of the lesson: problems, assignments, tests, etc.**

Unusual situational tasks:

1. A repeatedly pregnant K., 25 years old, gestational age of 15-16 weeks, came to the gynecological department, complaining of periodic pulling pains in the lower abdomen and in the lumbar region for 5 days. In the history: the previous childbirth three years ago was complicated by a rupture of the cervix of the II degree. The postpartum period was uneventful.

The abdomen is soft, painless on palpation. Pasternacki's symptom is negative on both sides. They are worried about anchorages. Urination is painless, somewhat accelerated. During the internal obstetric examination: the cervix is softened, shortened to 1.5 cm, the cervical canal freely passes one finger. Amniotic sac intact. The uterus is normal, enlarged according to the period of pregnancy. The appendages of the uterus are not enlarged. The discharge from the genital tract is white.

Task:

- Diagnosis.
- What are the patient management tactics?

Answer:

- Pregnancy II, 15-16 weeks. Threat of abortion. Isthmic-cervical insufficiency.
- Bed rest, sexual rest, antispasmodic, sedative therapy, vaginal sanitation, applying a suture on the cervix or installing an obstetric pessary.

2. Repeat-pregnant V., 28 years old, with a gestation period of 30 weeks, came to the obstetric hospital with complaints of periodic spasm-like pain in the lower abdomen. In the history of two involuntary abortions in the late term.

The abdomen is enlarged by the pregnant uterus, ovoid in shape. The body of the uterus has clear contours, there is no local soreness. The uterus is periodically toned. Movement of the fetus feels good. The fetal heartbeat is clear, rhythmic, up to 150 beats/min, heard on the left below the navel. Pasternacki's symptom is negative on both sides. Physiological parameters are normal.

During vaginal examination: the cervix is softened, 1.5 cm long, centered; the cervical canal passes the tip of the finger; the head is presented, which is pressed against the entrance to the small pelvis. Amniotic sac intact. There are no exostoses in the pelvic cavity, the promontory is inaccessible. Mucous discharge.

Task:

- Diagnosis.
- Patient management tactics.

Answer:

- Pregnancy III, 30 weeks. OAA. The threat of premature birth.
- Taking into account the gestation period (30 weeks), the opening of the cervix is less than 3 cm, tocolytic therapy is prescribed for 48 hours. in order to prevent respiratory distress syndrome. Tocolytic therapy is performed with calcium channel blockers (nifedipine), beta-mimetics (ginipral).

Test tasks STEP-2:

1. **(2020)**A 30-year-old woman had three miscarriages and one premature birth. During the examination, there is a positive reaction to anticardiolipin antibodies and lupus anticoagulant. Make a diagnosis:
   A. Antiphospholipid syndrome*
   B. Stein-Leventhal syndrome
   C. Hemorrhagic syndrome
   D. Sheehan's syndrome
   E. Syndrome of testicular feminization
2. **(2019)**A 22-year-old pregnant woman turned to a women's consultation with complaints of bleeding from the genital tract, which began 2 days ago, severe fatigue and dizziness. The gestation period is 13 weeks. During the day, she used 6 sanitary pads. During physical examination: blood pressure - 90/60 mm Hg, temperature - 37.8°C, pulse 125/min., respiratory rate - 15/min. Infusion therapy has been started. During a vaginal examination: blood in the vagina, the cervix is smoothed and opened. On ultrasound, the fertile egg in the uterine cavity, the heartbeat and movements of the fetus are not determined. Which of the following steps in the management of the patient would be most appropriate?
   A. Methotrexate
   B. Bed rest and analgesics
   C. Magnesium sulfate intravenously
   D. Dilation and curettage of the uterus*
   E. Antibiotic therapy
3. (2016) A 24-year-old female patient was brought to the hospital by an ambulance team due to complaints of cramp-like pains in the lower abdomen, profuse, clotted bloody secretions from the genital tract, weakness. AT-100/60 mm Hg, Ps- 90/min. The last normal menstruation was 2 months ago. During the examination of the cervix, the remains of embryonic tissue are observed in the mirrors. During the bimanual examination: the uterus is enlarged up to 6 weeks of pregnancy, painless, the cervical canal passes a finger. What is the previous diagnosis?
   A. Incomplete abortion*
   B. Dysfunctional uterine bleeding
   C. Violated ectopic pregnancy
   D. Inflammation of the appendages of the uterus
   E. Myoma of the uterus
4. (2010, 2009) An 18-year-old first-time pregnant woman at 27-28 weeks of pregnancy was operated on for acute phlegmonous appendicitis. What complications should be prevented in the postoperative period?
   A. Miscarriage*
   B. Intestinal obstruction
   C. Fetal hypotrophy

D. Premature detachment of the placenta
E. Late gestosis

4. Summing up.

Current control:oral survey, testing, assessment of communication skills during role play, solving situational clinical tasks, assessment of activity in class, etc.

Final control: balance

Evaluation of the current educational activity in a practical session:

1. Evaluation of theoretical knowledge on the subject of the lesson:
- methods: survey, solving a situational clinical problem;
- the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Evaluation of work with a patient on the subject of the lesson:
- methods: assessment of: a) communication skills of communicating with the patient, b) the correctness of prescribing and evaluating laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) substantiation of the clinical diagnosis, e) drawing up a treatment plan;
- assessment: maximum assessment – 5, minimum assessment – 3, unsatisfactory assessment – 2.

The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

Current assessment criteria for practical training:

"5"	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills. Excellently interprets the data of clinical, laboratory and instrumental studies, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
"4"	The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills. Interprets the data of clinical, laboratory and instrumental studies well with some errors, expresses his opinion on the subject of the class, demonstrates clinical thinking.
"3"	The acquirer does not have sufficient knowledge of the material, takes part in the discussion and solution of the situational clinical problem without confidence, demonstrates practical skills during the examination of the patient and interprets the data of clinical, laboratory and instrumental studies with significant errors.

"2"	The acquirer does not possess the material, does not take part in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data.

5. List of recommended literature.

Basic:

1. Gladchuk I.Z. Obstetrics: student`s book / Gladchuk I.Z., Ancheva I.A. . – Vinnitsia: Nova Knyha, 2021. – 288 p.
2. Obstetrics and Gynecology: in 2 volumes. Volume 1. Obstetrics: textbook / V.I. Gryshchenko, M.O. Shcherbina, B.M. Ventskivskyi et al. (2nd edition). – «Medicina», 2018. – 392 p.
3. Hiralal Konar DC Dutta's Textbook of Obstetrics (9th Ed.) / Hiralal Konar (Ed.). – Jp Medical Ltd, 2018. – 700 p.
4. F. Gary Cunningham Williams Obstetrics (26th Edition) / F. Gary Cunningham, Kenneth Leveno, Jodi Dashe, Barbara Hoffman, Catherine Spong, Brian Casey. – McGraw Hill / Medical, 2022. – 1328 p.
5. Jeremy Oats, Suzanne Abraham Llewellyn-Jones Fundamentals of Obstetrics and Gynaecology (10th Ed) / Jeremy Oats, Suzanne Abraham. – Elsevier, 2016. – 384 p.

Additional:

1. The PROMPT-CIPP Editorial Team. (2019). PROMPT-CIPP Course Participant's Handbook: Care of the Critically Ill Pregnant or Postpartum Woman (Critical Car Prompt Practical Obstetric Multi-professional Training). – Cambridge University Press; 1st edition, 2019. – 136 p.
2. L. A. Magee The FIGO Textbook of Pregnancy Hypertension. An evidence-based guide to monitoring, prevention and management. / L. A. Magee, P. Dadelszen, W. Stones, M. Mathai (Eds). – The Global Library of Women's Medicine, 2016. – 456 p.
3. Edwin Chandraharan Handbook of CTG Interpretation: From Patterns to Physiology / Edwin Chandraharan. – Cambridge University Press; 1st edition, 2017. – 256 p.
4. Louise C. Kenny, Jenny E. Myers Obstetrics by Ten Teachers (20th ed) / Louise C. Kenny, Jenny E. Myers. – CRC Press, 2017. – 342 p.
5. J. Studd Current Progress in Obstetrics and Gynaecology. Vol 4. / J. Studd, Seang Lin Tan, F. Chervenak. – TreeLife Media (A Div of Kothari Medical), 2017. – 419 p.
6. J. Studd Current Progress in Obstetrics and Gynaecology. Vol 5. / J. Studd, Seang Lin Tan, F. Chervenak. – TreeLife Media (A Div of Kothari Medical), 2019. – 403 p.

7. J. Studd Current Progress in Obstetrics and Gynaecology. Vol 6. / J. Studd, Seang Lin Tan, F. Chervenak. – TreeLife Media (A Div of Kothari Medical), 2022. – 309 p.
8. Mark Landon Obstetrics: Normal and Problem Pregnancies, 8th Edition / Mark Landon, Henry Galan, Eric Jauniaux, Deborah Driscoll, Vincenzo Berghella, William Grobman, et al. – Elsevier, 2021. – 1280 pp.
9. Mark B. Landon Gabbe's Obstetrics Essentials: Normal & Problem Pregnancies, 1st Edition / Mark B. Landon, Deborah A. Driscoll, Eric R. M. Jauniaux, Henry L. Galan, William A. Grobman, Vincenzo Berghella. – Elsevier, 2019. – 496 pp.
10. Ian M. Symonds, Sabaratnam Arulkumaran Essential Obstetrics and Gynaecology, 6th Edition / Ian M. Symonds, Sabaratnam Arulkumaran. – Elsevier, 2020. – 480 pp.
11. Myra J. Wick Mayo Clinic Guide to a Healthy Pregnancy, 2nd Edition / Myra J. Wick. – Mayo Clinic Press, 2018. – 520 p.

Internet sources:

1. https://www.cochrane.org/ - Cochrane
2. https://www.acog.org/ - The American College of Obstetricians and Gynecologists
3. https://www.uptodate.com – UpToDate
4. https://online.lexi.com/ - Wulters Kluwer Health
5. https://www.ncbi.nlm.nih.gov/ - National Center for Biotechnology Information
6. https://pubmed.ncbi.nlm.nih.gov/ - National Library of Medicine
7. https://www.thelancet.com/ - The Lancet
8. https://www.rcog.org.uk/ - Royal College of Obstetricians & Gynaecologists
9. https://www.npwh.org/ - Nurse practitioners in womens health
10. http://moz.gov.ua
11. www.ama-assn.org – American Medical Association
12. www.who.int
13. www.dec.gov.ua/mtd/home/
14. http://bma.org.uk
15. www.gmc-uk.org- *General Medical Council (GMC)*
16. www.bundesaerztekammer.de
17. www.euro.who.int