

Thromboembolic disease in gynecology

After bleeding, embolic events are among the most feared hematological complications in obstetrics. Thromboembolism is the most common, followed by amniotic fluid embolism and rarely air embolism.

Formation of venous thrombosis

Three factors influence the development of a venous thrombus – blood stasis, activation of damaged endothelium and hypercoagulable state (Virchow's trias).

Anatomical and endocrine factors

- Venous stasis promotes the accumulation of coagulation factors , mainly in the valve pockets of the veins of the lower limbs;
- during pregnancy, ileofemoral thrombosis is common (mainly on the left - the iliac vein runs under the left common iliac artery and is pressed by it);
- pregnancy contributes to the pressure of the uterus on the veins of the pelvis and greater stagnation of blood;
- economic class venous thrombosis - long flights (over 5000 km);
- progesterone acting during pregnancy relaxes smooth muscle and increases venous stagnation.

Coagulation factors

- During pregnancy, a physiologically procoagulant state develops (defense against numerous obstetric hemorrhages);
- increases fibrinogen, factors V, VII, VIII, IX, X, and vWF;
- antithrombin III is constant, it rises only in some diseases (preeclampsia);
- the natural procoagulant state during pregnancy is harmful during frequent artificial interventions - there is a risk of DIC.

Risks of thromboembolism

1. During pregnancy – extensive varices, venous thrombosis and embolism in the anamnesis, heart disease, hypertensive disease, DM, liver and kidney diseases, obesity, preeclampsia, malignancies in pregnancy, antiphospholipid syndrome.
2. During childbirth and postpartum – sc iterativa (repeated), conditions after intra-abdominal operations, uterine vulneration, placenta accreta or increta, premature separation of the bed, eclampsia.

Deep vein thrombosis

- It is immediately life-threatening.

Clinical picture

- miscellaneous – swelling, pain, warm limb;
- the most serious form – acute deep ileofemoral thrombosis (phlegamsia alba dolens).

Therapy

- anticoagulation:
 - continuous infusion of heparin (20,000 IU/24 h);
 - low molecular weight heparins 0.2-0.6 mg sc every 12 hours;
 - after delivery we continue as long as possible, we switch to warfarin (therapy for 6 months);
 - thrombolysis is contraindicated in pregnancy and postpartum due to the risk of profuse bleeding;
 - the method of choice is surgical thrombectomy with a Fogarty catheter (within 72 hours of the onset of symptoms).

Pulmonary embolism

Pulmonary embolism is the most serious thrombotic complication.

Clinical picture

1. **massive fulminant embolism;**
 - mortality 50-60%;
 - acute retrosternal pain;
 - tachycardia;
 - hypotension, cold sweat, fear of death;
2. **latent embolism;**
 - tachycardia, slight shortness of breath;

- bronchospasm, subfebrile;
- hemorrhagic sputum, cor pulmonale on ECG.

Therapy

- in the hands of an experienced anesthesiologist, internist and hematologist;
- oxygen, sedation, analgesics, anticoagulation (10,000 IU heparin bolus, then 1000 IU/hour);
- anti-shock, cardiotoxic treatment;
- in massive, life-threatening embolism, immediate Trendelenburg surgery as a last resort.

TEN prophylaxis

Primary prevention

- Principles and measures limiting the development of thromboembolism in direct connection with caesarean section;
- preoperative treatment of the environment (rehydration, ion balance);
- we consider the indications;
- gentle operation, minimization of blood loss;
- DK bandage, early mobilization.

Secondary prevention

- Active search and dispensary of high-risk patients;
- heparin prophylaxis – low-molecular-weight heparins before the procedure and administered until mobilization.

Prophylaxis of TEN in pregnancy and puerperium

- For a patient with a history of thrombosis, we dispensary throughout pregnancy, from the first day after delivery she receives LMWH, from the fifth day warfarin (discontinue at INR 2);
- similarly in patients with antithrombin III deficiency, antiphospholipid Ig.

Links

related articles

- Thromboembolic disease
- Deep vein thrombosis
- Pulmonary embolism

Literature

- ČECH, Evžen, et al. *Porodnictví*. 2. edition. Praha : Grada, 2006. ISBN 80-247-1303-9.