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Prevention and treatment of venous thrombosis during pregnancy and after childbirth

The purpose of this leaflet is to provide patients with information about the nature and risks of venous thrombosis and to introduce preventive measures and treatment for thrombosis during pregnancy and after childbirth.

Thrombosis refers to the formation of blood clots (thrombi) in a blood vessel (either a vein or an artery). Venous thrombosis occurs in the veins. Veins are the blood vessels that carry blood to the heart and lungs. Blood clots most commonly form in the deep veins of the legs, a condition known as deep vein thrombosis. Sometimes, inflammation with an intravascular clot can occur in the superficial veins of the leg – a condition known as superficial thrombophlebitis (phlebitis). If there are varicose veins on the leg, the area of the varicose vein/varicose nodule can become inflamed.

Pregnancy increases the risk of venous thrombosis (up to 10 times compared to non-pregnant women) due to changes in a woman's clotting system and slower blood flow in the leg veins during pregnancy. Venous thrombosis can occur throughout the entire pregnancy, including the first trimester. The risk of thrombosis is highest immediately after childbirth, as tissue trauma during the birthing process can further activate the clotting system. The risk of venous thrombosis persists for about six weeks after childbirth.

Deep vein thrombosis definitely needs treatment, because in untreated conditions, the clot can grow uncontrollably and particles (emboli) can detach from the clot and travel to the lungs through the bloodstream, causing a condition known as pulmonary embolism (PE). Pulmonary embolism can manifest with mild symptoms, but it can rapidly progress to a life-threatening condition. Diagnosing and treating deep vein thrombosis can prevent the development of pulmonary embolism.

What are the symptoms of deep vein thrombosis?

Deep vein thrombosis usually occurs in one leg, more often in the left leg in pregnant women. Classic signs include a uniform, fairly rapidly developed and persistent swelling of the calf or the entire leg; there may be redness and the leg may feel warmer than the other. Pain may be limited to the calf but sometimes the pain can be felt in the lower abdomen and/or hip. Walking usually exacerbates the pain. Simultaneous swelling of both legs is not generally typical of deep vein thrombosis; heaviness and discomfort in the legs are quite common during pregnancy and may not indicate health problems.

What are the symptoms of pulmonary embolism (PE)?

Symptoms of PE may include suddenly developed shortness of breath, chest tightness or pain behind the breastbone, coughing up blood, feeling very unwell or fainting. Sometimes, a sign of PE can be a rapid (within days) worsening of exercise tolerance, meaning shortness of breath occurs with activities that were recently not problematic. However, even with respiratory problems, it is important to note that in the second half of pregnancy, due to the elevated position of the diaphragm and possible excessive weight gain, shortness of breath or breathlessness can occur more easily and may not necessarily indicate a pathological condition.

PLEASE NOTE! If during pregnancy you have both symptoms suggestive of thrombosis in the leg and breathing difficulties, it is important to consider the possibility of deep vein thrombosis and PE.

What are the risk factors for deep vein thrombosis and PE?

Pre-pregnancy risk factors

- Age over 35 years.
- Three or more previous deliveries.
- Previous deep vein thrombosis or pulmonary embolism.
- Deep vein thrombosis in the mother, father, sister or brother (possible hereditary predisposition).
- If you have been diagnosed with thrombophilia, meaning a congenital or acquired change in the clotting system that increases the likelihood of clot formation. Heart disease, lung disease or arthritis (this should be mentioned to your midwife or obstetrician).
- Large varicose veins extending above the knee, appearing red, swollen and painful, i.e. inflamed.
- Use of a wheelchair for mobility.
- Overweight with a body mass index over 30.
- Smoking.

Risk factors during pregnancy

- Hospitalisation due to another illness (associated with reduced mobility).
- Multiple pregnancy.
- Dehydration (e.g. due to vomiting in early pregnancy).
- Ovarian hyperstimulation syndrome due to fertility treatment.
- Reduced mobility during pregnancy.
- Immobility for prolonged periods (e.g. after surgery/trauma, travelling for more than 4 hours).
- Preeclampsia.

Postpartum risk factors

- Prolonged labour (over 24 hours) or caesarean section.
- Large blood loss during childbirth and subsequent blood transfusion.

How can the risk of deep vein thrombosis and PE be reduced?

- Wear special compression stockings.
- Be as physically active as possible.
- Drink plenty of water.
- Do not smoke.
- If you are overweight, try to lose weight before you get pregnant; avoid gaining too much weight during pregnancy.

During pregnancy and after childbirth, your doctor or midwife will assess your risk of venous thrombosis using a questionnaire approved by the Estonian Gynaecologists Society. The risk factors vary in importance and are assigned 1-4 points accordingly; the sum of risk points helps assess your individual risk of venous thrombosis during pregnancy. The risk is assessed during the first pregnancy appointment with a midwife or obstetrician.

If the sum of risk factors results in a high risk of venous thrombosis, you will be recommended medication in addition to the measures mentioned above. The medication is called low molecular weight heparin. It is an injectable medication that is injected at the same time every day. The correct dose is determined by your midwife or obstetrician, taking into account risk factors and weight. The injection technique is easy to learn. Oral medications cannot be used for preventing or treating venous thrombosis during pregnancy because they are harmful to the foetus; the safety of low molecular weight heparins has been tested.

If you are already taking medication for thrombosis treatment or prevention and are planning pregnancy or suspecting pregnancy, you should see a doctor to switch to low molecular weight heparin.

Can the risk of developing thrombosis also change during pregnancy?

The risk of developing thrombosis can both increase and decrease during pregnancy. The risk may increase, for example, when travelling for more than four hours or in the case of surgical interventions or trauma. The risk may decrease, for example, by quitting smoking.

How is pregnancy-related deep vein thrombosis and/or PE treated?

Treatment for deep vein thrombosis and PE during pregnancy also involves injectable low molecular weight heparins, but the doses are higher than in preventive treatment and injections are usually required twice a day. The dosage of the medication is based on your weight. The choice of medication and dose does not differ whether you have only deep vein thrombosis or both deep vein thrombosis and PE – the treatment is the same. Since the thrombosis-promoting situation lasts until the end of pregnancy and for six weeks after childbirth, treatment should continue even if, for example, leg discomfort and/or respiratory problems improve. The risk of recurrence is high if treatment is stopped prematurely. In some cases, the doctor may slightly reduce the medication dose towards the end of the treatment period, but such decisions are always well considered and individual. Oral antithrombotic medications should not be used in pregnant women.

Is daily injection of low molecular weight heparin harmful to the foetus?

Heparin injection is not harmful to the foetus because the drug does not reach the foetus through the placenta.

You may experience bruises at the injection sites, which are safe and generally disappear on their own. Around 1-2% of women experience an allergic reaction to the medication. If you develop a rash after the injection, you should tell your doctor or midwife.

When labour begins, do I need to continue thrombosis prophylaxis?

When contractions begin, the medication should no longer be injected. Epidural or spinal anaesthesia (‘back injection’) cannot be performed until 12 hours have passed (for prophylactic doses) or 24 hours (for therapeutic doses) since the last low molecular weight heparin injection. However, other methods of pain relief can be used.

If labour induction is planned, low molecular weight heparin injections should be stopped 24 hours before the planned induction date.

What if a cesarean section is needed?

For a planned caesarean section, 12 hours should have passed since the last low molecular weight heparin injection for prophylactic doses and 24 hours for therapeutic doses. Usually, low molecular weight heparin is resumed when at least four hours have passed since the operation.

In the case of an emergency caesarean section, the caesarean section cannot be performed using epidural or spinal analgesia unless 12 hours have passed since the last prophylactic dose and 24 hours since the last therapeutic dose. In this case, the operation must be performed under general anaesthesia.

What happens after childbirth?

Treatment with low molecular weight heparin should be continued after delivery for as long as your doctor recommends. After childbirth, the risk of thrombosis is reassessed. There are situations where thrombosis prophylaxis was not indicated during pregnancy but is recommended for a certain period after childbirth. Depending on the level of risk, treatment with low molecular weight heparin can be given either during the hospital stay only, for 10 days or 6 weeks after childbirth.

If thrombosis prevention was necessary during pregnancy, it is likely that the treatment will continue for six weeks after childbirth.

In the case of deep vein thrombosis and/or PE, the duration of postpartum treatment depends on how long you have been receiving treatment. The minimum duration of DVT/PE treatment is three months and it is often recommended for six months (time counted from the time of diagnosis, including treatment received during pregnancy).

It is very important to move as much as possible and consume enough fluids after childbirth.

If deep vein thrombosis and/or PE occurred during pregnancy, it must be taken into account when prescribing contraceptives in the future, as the use of oestrogen-containing contraceptives (e.g. combined pills, patch, vaginal ring) is not allowed.

Can I breastfeed?

Yes, breastfeeding is safe for both the mother and the baby during low molecular weight heparin injections.

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