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Royal College of Obstetricians & Gynaecologists

Information for you

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Reducing the risk of venous thrombosis in pregnancy and after birth

What is venous thrombosis?

Thrombosis is a blood clot in a blood vessel (a vein or an artery). Venous thrombosis occurs in a vein. Veins are the blood vessels that take blood towards the heart and lungs; arteries take the blood away.

A deep vein thrombosis (DVT) is a blood clot that forms in a deep vein of the leg, calf or pelvis.

Who is this information for?

This information is about reducing the risk of a venous thrombosis if you are thinking about having a baby, you are already pregnant or you have just had a baby.

If you need information on the treatment of venous thrombosis (perhaps because you have already had a venous thrombosis during pregnancy or after birth) see the RCOG Patient Information leaflet: *Treatment of venous thrombosis in pregnancy and after birth - information for you*.

Who is at risk of venous thrombosis?

Venous thrombosis is uncommon in pregnancy or in the first 6 weeks after the birth of your baby. However the risk for venous thrombosis for this group of women is 1 in 500, which is ten times more likely than for women who are the same age but not pregnant. You are at highest risk of getting a DVT just after you have had your baby. However, it can occur at any time during your pregnancy including the first three months, so it is important to see your midwife early in pregnancy.

You are at increased risk of venous thrombosis if any of the following apply to you.

Before pregnancy/medical conditions

If you:

- are over 35 years of age
- have already had three or more babies

- have had a previous venous thrombosis
- have a mother, father, brother or sister who has had a venous thrombosis
- have a thrombophilia - a condition which makes a blood clot more likely
- have a medical condition such as heart disease, lung disease or arthritis.
- Your doctor or midwife will be able to tell you whether any medical condition you have increases your risk of a DVT/PE
- have severe varicose veins (if they are painful or above the knee with redness/swelling)
- are a wheelchair user.

Lifestyle

If you:

- are obese and have a body mass index (BMI) over 30
- are a smoker
- use intravenous drugs.

During pregnancy

If you:

- are carrying more than one baby (multiple pregnancy)
- become dehydrated or less mobile in pregnancy due to for example, vomiting in early pregnancy, being in hospital with a severe infection such as appendicitis or a kidney infection or if you are unwell from fertility treatment (ovarian hyperstimulation syndrome)
- are immobile for long periods of time, for example, after an operation or when travelling for four hours or longer (by air, car or train)
- have severe pre-eclampsia - see RCOG Patient Information: *Pre- eclampsia: what you need to know*
- are admitted to hospital.

After the birth of your baby

If you:

- have a prolonged labour (more than 24 hours) or have had a caesarean birth
- lose a lot of blood after you have had your baby
- receive a blood transfusion.

Why is a DVT serious?

Venous thrombosis can be serious because the blood clot may break off and travel in the blood stream until it gets stuck in another part of the body, such as in the lung (known as pulmonary embolism or PE). This is potentially life threatening although dying from a PE is very rare in women who are pregnant or who have just had a baby. The symptoms of a pulmonary embolus may include:

- sudden unexplained difficulty in breathing
- tightness in the chest or chest pain
- coughing up blood (haemoptysis)
- feeling very unwell or collapsing.

Seek help immediately if you experience any of these symptoms. Diagnosing and treating a DVT reduces the risk of developing a pulmonary embolus.

Can I reduce the risk of getting a DVT or a pulmonary embolism?

You can reduce your risk as most DVTs and PEs which occur during pregnancy and after birth are preventable. Once a DVT has been identified, your doctor can give you treatment to reduce the risk of a PE occurring.

Do I need treatment if I have any risk factors?

You will have a risk assessment during pregnancy and after you have had your baby, which is when your doctor or midwife asks if you have any of the risk factors above. This helps to decide whether you would benefit from preventative treatment. This will depend on which risk factors you have and how many.

Some risk factors, such as previous thrombosis, are significant enough on their own for treatment to be recommended. Other risk factors may not be enough on their own for you to require treatment. Your midwife or obstetrician will talk with you about your risk factors and explain why treatment may be advised in your case.

Can my risk change?

Yes. Your risk can either increase or decrease.

- You may start by having one or two risk factors but your risk can increase if you develop other factors, such as becoming unwell, developing severe varicose veins, travelling for over four hours or having a complicated birth. In this case, you may be advised to start taking treatment.
- Your risk may also decrease, for example, if you stop smoking. Treatment may then no longer be necessary.

When will my risk be assessed?

Before pregnancy

If you have any of the risk factors listed above and are planning a pregnancy you should talk to your GP or midwife. You may need to see an obstetrician early in pregnancy to discuss starting treatment.

If you have had a DVT or PE or have a thrombophilia (see above) your GP can arrange a hospital appointment with a haematologist or an obstetrician who specialises in thrombosis in pregnancy.

If you are already taking warfarin to treat or prevent venous thrombosis, you may be advised to change to heparin because warfarin can be harmful to your unborn baby (see section below). Most women are advised to change before becoming pregnant or as early as possible in pregnancy. For some women warfarin may be the only option. If you are already taking warfarin, talk to your doctor so that any changes can be planned to optimise your health and that of your baby.

During and after pregnancy

Your midwife should carry out a risk assessment at your first antenatal booking and may update this if your situation changes during your pregnancy. A further risk assessment should also be carried out if you are admitted to hospital and will be repeated after you have had your baby.

How can I reduce my risk of getting a DVT or PE?

There are steps you can take to reduce your risk of getting of a DVT or PE, such as:

- staying as active as you can
- wearing special stockings (graduated elastic compression stockings) to help prevent blood clots
- keeping hydrated by drinking normal amounts of fluids
- stopping smoking
- losing weight before pregnancy if you are overweight.

You may be advised to start treatment with injections of heparin (an anticoagulant) to 'thin the blood'. There are different types of heparin. The most commonly used in pregnancy is 'low-molecular-weight heparin' (LMWH). Heparin is also used to treat venous thrombosis, but the dose of heparin used to prevent a venous thrombosis is usually less.

For most women, the benefits of heparin are that it reduces the risk of a venous thrombosis or a PE developing.

What does heparin treatment involve?

Heparin is given as an injection under the skin (subcutaneous) at the same time every day (sometimes twice daily). The dose is worked out for you depending on your risk factors and your weight in early pregnancy or before you became pregnant. You may be on a low dose or a high dose regimen. You (or a family member) will be shown how and where in your body to give the injections. You will be provided with the needles and syringes (already made up) and will be given advice on how to store and dispose of these.

How long will I need to take heparin?

If you think you may need heparin during pregnancy, you should see a healthcare professional as early as possible so that heparin can be started at the right time. For some women this may be before their booking appointment.

The length of time you will be advised to stay on heparin depends on your risk factors and whether your situation changes. It may be that treatment is recommended for only a few days to cover long distance travel or treatment may be recommended for the week immediately after delivery. Sometimes, treatment may be recommended for the whole of your pregnancy and for up to six weeks after the birth.

Are there any risks to my baby and me from heparin?

Low-molecular-weight heparin does not cross the placenta and therefore cannot harm your baby.

There may be some bruising where you inject – this will usually fade in a few days. One or two women in every 100 (1% to 2%) will have an allergic reaction. If you notice a rash after injecting, you should inform your doctor so that the type of heparin can be changed.

What should I do when labour starts?

If you think you are going into labour, do not have any more injections. Phone your maternity unit and tell them that you are on heparin treatment. They will advise you what to do.

If the plan is to induce labour, you should stop your injections 12 hours (24 hours if you are on a high dose) before the planned date. An epidural injection (a regional anaesthetic injection given into the space around the nerves in your back to numb your lower body) cannot be given until 12 hours (24 hours if you are on a high dose) after your last injection. You will have the option of alternative pain relief.

What if I have a caesarean birth?

If you are having a planned caesarean section your last injection should be 12 hours (24 hours if you are on a high dose) before the planned caesarean delivery. Your injections will usually be re-started within four hours of the operation.

If your baby needs to be born by emergency caesarean section within 12 hours (24 hours if you are on a high dose) of your last injection you will not be able to have an epidural or spinal injection and instead will need a general anaesthetic for your operation.

What happens after birth?

It is important to be as mobile as possible after you have had your baby and avoid becoming dehydrated.

If you were on heparin before the baby's birth, you may need to continue this for between 1 and 6 weeks afterwards. Even if you weren't having injections in pregnancy, you may need to start having injections for the first time after birth.

If you were taking warfarin before pregnancy and have changed to heparin during pregnancy you can change back to warfarin usually three days after birth.

After birth, you should be given a postnatal appointment with your GP or obstetrician. At that appointment your doctor should:

- discuss future pregnancies: you may be recommended heparin treatment during and after your next pregnancy but if, for example, you stop smoking or lose weight before your next pregnancy, heparin treatment may not be necessary next time
- discuss your options for contraception: you may be advised not to use any contraception that contains oestrogen, such as the 'combined pill', as this can also add to your risks of DVT.

Can I breastfeed?

Yes. Heparin and warfarin are safe to take when breastfeeding.

Sources and acknowledgements

This information has been developed by the RCOG Patient Information Committee. It is based on the RCOG guideline *Reducing the Risk of Thrombosis and Embolism during Pregnancy and the Puerperium* (November 2009). The guideline contains a full list of the sources of evidence we have used. You can find it online at: http://www.rcog.org.uk/womens-health/clinical-guidance/reducing-risk-of-thrombosis-greentop37a.

The RCOG produces guidelines as an educational aid to good clinical practice. They present recognised methods and techniques of clinical practice, based on published evidence, for consideration by obstetricians and gynaecologists and other relevant health professionals. This means that RCOG guidelines are unlike protocols or guidelines issued by employers, as they are not intended to be prescriptive directions defining a single course of management.

This information has been reviewed before publication by women attending clinics in Glasgow, Coleraine and Sunderland.

A glossary of all medical terms is available on the RCOG website at http://www.rcog.org.uk/womens-health/patient-information/medical-terms-explained.

A final note

The Royal College of Obstetricians and Gynaecologists produces patient information for the public. The ultimate judgement regarding a particular clinical procedure or treatment plan must be made by the doctor or other attendant in the light of the clinical data presented and the diagnostic and treatment options available. Departure from the local prescriptive protocols or guidelines should be fully documented in the patient's case notes at the time the relevant decision is taken.

All RCOG guidelines are subject to review and both minor and major amendments on an ongoing basis. Please always visit www.rcog.org.uk for the most up-to-date version of this guideline.