

Obstetric cholestasis



Fighting liver disease

Obstetric cholestasis

The British Liver Trust works to:

- support people with all kinds of liver disease
- improve knowledge and understanding of the liver and related health issues
- encourage and fund research into new treatments
- lobby for better services.

All our publications are reviewed by medical specialists and people living with liver disease. Our website provides information on all forms of adult liver disease and our Helpline gives advice and support on general and medical enquiries. Call us on **0800 652 7330** or visit **www.britishlivertrust.org.uk**

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The liver

Your liver is your body's 'factory' carrying out hundreds of jobs that are vital to life. It is very tough and able to continue to function when most of it is damaged. It can also repair itself – even renewing large sections.

Your liver has around 500 different functions.

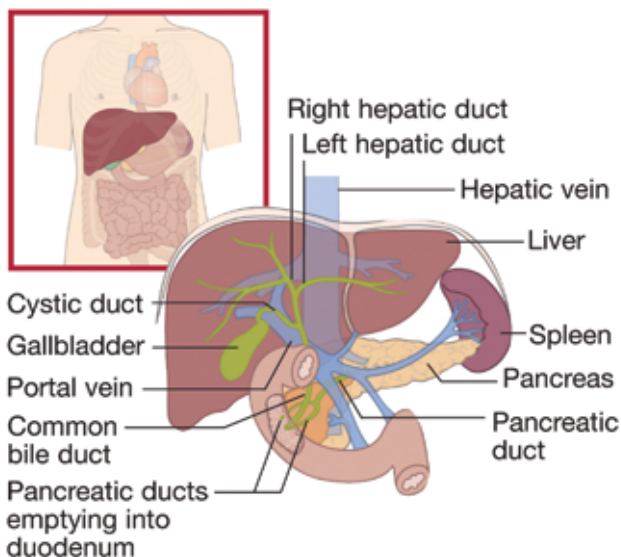
Importantly it:

- fights infections and disease
- destroys and deals with poisons and drugs
- filters and cleans the blood
- controls the amount of cholesterol
- produces and maintains the balance of hormones
- produces chemicals – enzymes and other proteins – responsible for most of the chemical reactions in the body, for example, blood clotting and repairing tissue
- processes food once it has been digested
- produces bile to help break down food in the gut
- stores energy that can be used rapidly when the body needs it most
- stores sugars, vitamins and minerals, including iron
- repairs damage and renews itself.

How liver disease develops

Liver damage develops over time. Any inflammation of the liver is known as hepatitis, whether its cause is viral or not. A sudden inflammation of the liver is known as acute hepatitis. Where inflammation of the liver lasts longer than six months the condition is known as chronic hepatitis.

Fibrosis is where scar tissue is formed in the inflamed liver. Fibrosis can take a variable time to develop. Although scar tissue is present the liver keeps on functioning quite well. Treating the cause of the inflammation may prevent the formation of further liver damage and may reverse some or all of the scarring.



Cirrhosis is where inflammation and fibrosis has spread throughout the liver and disrupts the shape and function of the liver. With cirrhosis, the scarring is more widespread and can show up on an ultrasound scan. Even at this stage, people can have no signs or symptoms of liver disease. Where the working capacity of liver cells has been badly impaired and they are unable to repair or renew the liver, permanent damage occurs.

This permanent cell damage can lead to liver failure or liver cancer. All the chemicals and waste products that the liver has to deal with build up in the body. The liver is now so damaged that the whole body becomes poisoned by the waste products and this stage is known as end stage liver disease. In the final stages of liver disease the building up of waste products affects many organs. This is known as multiple organ failure. Where many organs are affected, death is likely to follow.

What is obstetric cholestasis (OC)?

Obstetric cholestasis (OC) is a liver disorder that occurs during pregnancy. Sometimes referred to as intrahepatic cholestasis of pregnancy (ICP), it is a condition in which the flow of bile from the liver is reduced. This causes affected women to have an increase of chemicals, known as raised bile salts, in their blood.

OC is characterised by itching, known as pruritus. The itching generally appears in the last three months of pregnancy but can appear sooner. It is of variable severity and can be extremely distressing for the mother. It completely disappears soon after birth and does not cause long-term health problems for mothers.

Several fetal complications have been reported in OC pregnancies. Recent studies suggest that women with raised levels of bile salts in the blood have increased risks of preterm delivery and fetal distress. Some case studies have also reported stillbirth occurring near the end of pregnancy in women with OC. Therefore it is essential that the condition is recognised and treated in time.

Most obstetricians in the UK aim to deliver early, at around 37 or 38 weeks. This is done to help prevent the possibility of stillbirth.

What are the causes of OC?

Doctors do not yet know what restricts the flow of bile from the liver in OC.

One theory is that your liver cannot cope with the high levels of hormones associated with pregnancy (estrogen and progesterone). This leads to a reduction in the flow of bile and causes a build up of bile salts in the blood. This is believed to be what causes itching in the mother and can lead to jaundice (a yellowing of the skin and the whites of the eyes) in a small number of OC cases. The transfer of bile salts across the placenta is thought to contribute to the risk of the baby dying in the womb.

What is bile?

Bile is a yellow-green fluid produced by your liver which contains chemicals to aid digestion, as well as waste products for excretion via the bowel. It plays a central role in helping the body digest fat. It acts as a detergent, breaking the fat into very small droplets so that it can be absorbed from food in your gut. It also makes it possible for your body to take up the fat-soluble vitamins A, D, E and K from the food passing through the gut.

There is also a theory that OC has a genetic cause. This means it is linked to an abnormality or 'mutation' in a gene or genes. While mutations that may be linked to OC have been identified, they do not currently explain all the causes of the disorder and further research is being carried out.

There have been no reports of any harmful effects to babies born to mothers who have had OC once they have been delivered. Large follow-up studies have not yet been carried out.

How common is OC?

OC may affect up to 1% of the population and is more common in twin and triplet pregnancies. The number affected among South Asian women is slightly increased (1.5%) and much higher still in South American countries and in Scandinavia (over 2%). This is seen by some to support evidence that suggests OC has a genetic or environmental cause.

What are the symptoms of OC?

Itching is usually the only symptom of OC. The itching generally begins on the arms, legs, hands and soles of the feet. It may also occur on other parts of the body such as the face, back and breasts. It is usually worse at night, leading to sleeplessness and exhaustion.

Some women scratch themselves so frantically that they make themselves bleed. A few lose their appetite and feel generally unwell. A number of women (one in five) will develop jaundice in pregnancy. However, most women with OC do not have jaundice.

Itching is not uncommon in normal pregnancy. However, some women may not be aware that they have OC because they are told that itching is normal in pregnancy.

This can be misleading. It is important that if you are pregnant and itching, you should check with your doctor or midwife. It may be helpful to take a copy of this leaflet with you.

Diagnosis

Your doctor will diagnose OC from blood tests called liver function tests (LFTs) and a serum bile acid test. They should also be keen to exclude all other possible causes of your itching, such as allergies or eczema.

Doctors may also take into consideration the following as evidence of OC:

- pale stools
- dark urine
- a family history of OC

Liver function tests are performed to gain an idea how the different parts of your liver are functioning. They are made up of a number of separate examinations, each looking at different properties of your blood.

In OC, doctors will be looking for abnormal levels of the liver enzymes alanine aminotransferase (ALT), aspartate aminotransferase (AST) and gamma glutamyl transferase (GGT).

The most specific test involves measuring serum bile acids. Usually the level of bile acids in your blood is raised before the liver function tests can detect any changes. If the tests are within normal limits and you carry on itching, it is important that the tests are repeated.

Unfortunately the serum bile acid test is not available in all hospitals. Your doctor may need to send a sample to a specialist centre for diagnosis.

If LFTs are abnormal, doctors will carry out screening to eliminate other causes such as viral hepatitis and autoimmune disease before diagnosing OC.

This may involve an ultrasound scan to look for any sign of liver abnormality. Doctors may also use ultrasound to check for gallstones, as research suggests these occur more often with OC.

If measured levels return to normal or increase rapidly, doctors may consider that you do not have OC.

Research suggests that absorption of vitamin K is reduced in OC. A lack of vitamin K may affect your blood's clotting mechanism and increase blood loss during birth. Following diagnosis it is important to have a blood test to check how your blood is clotting before the birth as you may need extra vitamin K.

Your pregnancy may involve having regular tests to monitor your baby's heartbeat over a set period of time (cardiotocography).

Prevention

Because the reasons behind stillbirth in OC are still not fully understood, the policy in most obstetric units is to monitor you closely and for your baby to be delivered early. At the moment it is not known whether it is safe to monitor pregnancy through to natural labour.

With effective management – treatment and early delivery – the risk of stillbirth for women with the disorder is thought to be the same as that for normal pregnancy (around 1%).

Treatment

There is no cure for OC. Treatment is currently aimed at reducing the build-up of bile salts in the blood to relieve the itching and to protect the baby.

Following diagnosis of OC doctors may carry out liver function tests on a weekly basis to monitor your condition. This may involve more trips to hospital which can be either reassuring or unsettling at this time. If your itching persists, doctors are advised to run these tests every one or two weeks.

A number of medications may be used in your treatment. As yet, a specific medication to manage OC is not available although clinical studies are in progress. Some of the medications listed below are primarily used for other conditions and agreement about their effectiveness in OC is not settled.

Ursodeoxycholic acid (URSO or UDCA) is the most commonly prescribed medication to relieve itching caused by OC. It is still being evaluated for use in pregnancy and is prescribed with ‘informed consent’ (that is, taken with the knowledge that it is not licensed or clinically proven). It has been shown to be effective in women with higher levels of bile acids, but wider research studies need to be carried out.

URSO is a naturally occurring bile acid which accounts for 1% of circulating bile acids in your body. Taken orally in capsule form, this proportion can be increased to 50% to provide more protection for the liver by displacing more harmful bile acids and improving the flow of bile.

Dexamethasone (sold as Decadron) is a steroid sometimes prescribed to increase the maturity of the baby’s lungs so the baby can be delivered earlier. Its use is aimed at reducing your level of hormone production and to help relieve itching. However, wider studies are needed to establish the safety and effectiveness of dexamethasone.

Cholestyramine has been proven to reduce itching in some women but may lead to further vitamin K deficiency (see page 14).

Chlorpheniramine (Piriton) is an antihistamine that may be prescribed to help you sleep at night but is not considered to have much effect on your itching.

Vitamin K is a fat-soluble vitamin absorbed in your diet that is essential for blood coagulation (clotting). Following birth in OC your baby may require an injection of vitamin K.

You are likely to receive a daily supplement of vitamin K in the form of a water-soluble tablet (rather than by injection) to help prevent bleeding during delivery.

Looking after yourself

Diet

There are no special foods to eat or to avoid. It is important that you eat a well-balanced diet which includes lots of vegetables, fruit and whole wheat cereals, including bread.

To help with itching you may find the following suggestions from other mothers helpful:

- Have frequent cold baths
- Try not to get too hot
- Use lotions such as calamine and aqueous cream with menthol
- Wear loose cotton clothing
- Gently scratch your skin with a baby's hairbrush.

Can I drink alcohol?

OC is not caused or made worse by alcohol. However, the Department of Health recommends that if you are pregnant or are planning a pregnancy, you should avoid drinking alcohol to minimise harm to your baby.

If you still wish to drink, try to limit this to no more than one or two units of alcohol one or twice a week. You should avoid getting drunk.

Will OC damage my liver?

OC is not thought to cause any lasting liver damage. However, it may leave your liver more sensitive to normal changes in the level of your hormones and a few women report what is known as ‘cyclical itching’ during the menstrual cycle. This can happen just before ovulation or just prior to a period.

This type of itching is usually only mild and stops either when ovulation has taken place or your period has started.

What about future pregnancies?

It is highly possible that you may have OC in future pregnancies. The risk is generally estimated to be greater than 50%. If OC does recur, it may not necessarily follow the same pattern.

It is important that any future pregnancies are carefully managed by a consultant obstetrician who is familiar with the condition.

If you are worried that you may have OC, you must contact your doctor or midwife.

Aftercare

After the delivery the itching should disappear relatively quickly. It is thought that there is no damage caused to the liver of either mother or baby.

There are no developmental problems for the baby. The risk of developing neonatal jaundice is the same as for other babies.

Ideally you might have a post natal check related to your OC at around six to twelve weeks. This should not be any sooner than three weeks so that you have had plenty of recovery time. At your appointment your doctor will be keen to establish that the itching has gone away.

They should also carry out an LFT and serum bile acid test. If there are any abnormal results you will need to have further tests. These are to determine whether your liver is taking extra time to settle down or, more rarely, whether you have an underlying liver problem.

If this is the case you may be referred to a hepatologist, or perhaps a gastroenterologist with knowledge of liver problems.

You and your baby should receive the standard health checks after birth.

Contraception

Until it is proven that the hormones estrogen and progesterone have an effect on the liver in OC, it would seem sensible to approach hormonal contraception (the 'pill') with caution or avoid it completely.

However, this may not be realistic or practical for all women and it may be best to discuss the options with your doctor or a suitable healthcare professional. Use of contraception after OC is still a new area and may involve some trial and error in choosing what is right for you.

There is anecdotal evidence that a number of women can tolerate the mini pill and that others are also able to use a low dose combined oral contraceptive pill.

You might also consider intrauterine contraceptive devices (IUCDs). These release a lower dose of hormones which avoid the liver by going directly into the womb rather than into the bloodstream.

If you do proceed with hormonal contraception, an LFT should be undertaken beforehand to establish that your liver function is normal. You should have the test followed up with another six weeks later. Otherwise there are other forms of contraception available.

In general, if you continue to itch after six months a referral to a liver specialist should be sought.

OC should not influence your ability to breastfeed.

Because they have the potential to cause cholestasis it may be advisable to avoid the antibiotics erythromycin and augmentin following an OC pregnancy as other treatments are likely to prove just as effective. The use of antibiotics should be weighed against the risk of irritation to the womb caused by a urinary tract infection.

Useful words

ALT – stands for alanine aminotransferase, a liver enzyme that enters the blood following liver damage. An ALT test is used to monitor and assess the degree of liver damage in patients with hepatitis of any cause including, for example, toxins and viruses.

AST – stands for aspartate amino transferase, a liver enzyme but less specific to the liver than ALT (see above). A raised AST level may follow a heart attack, for example.

Cholestasis – a condition where the flow of bile from the liver is reduced.

Enzyme – a substance, usually a protein, produced by the body to help speed up a chemical reaction (which can be measured with liver function tests).

Gallstones – stones formed from bile that solidifies and hardens. Most gallstones are now known to be cholesterol gallstones, formed when the liver secretes bile that is abnormally saturated with cholesterol. Other stones can be formed from bile pigment (bilirubin). Gallstones become stored in the gallbladder or can find their way to the common bile duct.

Gene – a segment of a chromosome (or unit of DNA) that carries the instructions or code for making a specific protein or set of proteins responsible for, or contributing to, a specific physical trait or action.

GGT – gamma-glutamyl transferase, a liver enzyme in your blood that is measured to check for liver damage.

Hepatic – anything relating to the liver

Hepatocyte – a liver cell.

Inflammation – the first response of the immune system to infection, commonly characterised by heat, swelling, pain and tenderness.

Intrahepatic – within the liver.

Jaundice – a condition in which the whites of the eyes go yellow and in more severe cases the skin also turns yellow. This is caused by accumulation in the blood of bilirubin, a yellow pigment and a waste product normally disposed of by the liver in bile.

Mutation – an occurrence where a gene undergoes a change or variation in the base sequence of its DNA. Some mutations result in the gene no longer coding for the correct protein, or producing a reduced amount of the protein.

Serum – more than half of your blood is made of plasma which carries the circulating blood cells and platelets. Normally clear or yellowish, serum is the liquid that separates from blood when clotting occurs. Many chemical tests are carried out using serum.

Who else can help?

Obstetric Cholestasis Support Website

www.ocsupport.org.uk

Email: jennychambersoc@aol.com

A web-based support resource for people in the UK affected by OC and those wanting to find out more about the disorder. OC Support provides general information and the latest research on OC, with testimonies from people with OC and a discussion forum.

Sands (Stillbirth and Neonatal Death Society)

28 Portland Place

London W1B 1LY

National Helpline: 020 7436 5881 (9.30am to 5.30pm, Monday to Friday)

Email: helpline@uk-sands.org

www.uk-sands.org

A charity established by bereaved parents to support anyone affected by the death of a baby.

The Miscarriage Association

c/- Clayton Hospital

Northgate

Wakefield

West Yorks WF1 3JS

Helpline: 01924 200 799 (9.00am to 4.00pm, Monday to Friday)

Fax: 01924 298 834

Email: info@miscarriageassociation.org.uk

www.miscarriageassociation.org.uk

A charity providing information and support for anyone affected by the loss of a baby during pregnancy.

Tommy's, the baby charity

Nicholas House

3 Laurence Pountney Hill

London EC4R 0BB

Tel: 0870 777 7676

Fax: 0870 770 7075

Email: mailbox@tommys.org

www.tommys.org

A charity funding research into and providing information on the causes and prevention of miscarriage, premature birth and miscarriage.

Further information

The British Liver Trust publishes a large range of leaflets about the liver and liver problems written for the general public.

Leaflets that you may find particularly helpful include:

- *Diet and liver disease*
- *First steps – a guide to your liver*
- *Getting the best from your doctor*
- *Liver disease tests explained*

Special thanks

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Can you make a difference?

Liver disease is increasing alarmingly and the need to do more is greater than ever before...

For the British Liver Trust to continue its support, information and research programme, we need your help. We raise funds from many sources and a large proportion is donated by voluntary contributions. If you would like to send a donation it will enable us to continue providing the services that people need.

If you can help, please fill in the form on the page opposite.

If you wish to help us further with our work by organising or participating in a fundraising event or becoming a **“Friend of the British Liver Trust”** please:

**Call us on
0800 652 7330**

**Email us at
info@britishlivertrust.org.uk**

**Make a donation via our website at
www.britishlivertrust.org.uk**

**or write to
British Liver Trust
2 Southampton Road
Ringwood, BH24 1HY**



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I am interested in leaving the Trust a legacy. Please send me more information

* You must pay an amount of income tax and/or capital gains tax equal to the amount the British Liver Trust will reclaim on your donation: which is equal to 25p for every £1 you donate.

Your name and address will be added to our computer database ensuring you are sent the latest information. If you do not wish to receive further information, please tick here.



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