



EUROPEAN
ACADEMY OF
DERMATOLOGY &
VENEREOLOGY

Information Leaflet
for Patients

Intrahepatic Cholestasis of Pregnancy (ICP)

The aim of this leaflet

This leaflet is designed to tell you more about Intrahepatic Cholestasis of Pregnancy (ICP). It tells you what the condition is, what causes it, and what can be done about it.

Intrahepatic Cholestasis of Pregnancy (ICP)

What is Intrahepatic Cholestasis of Pregnancy?

ICP refers to a liver condition in which the normal flow of bile is impaired resulting in severe itching in the mother and a risk for stillbirth and prematurity (delivery before term) in the baby. ICP usually develops during the last third of pregnancy, when hormone levels are highest. ICP is also referred to as obstetric cholestasis, cholestasis of pregnancy, and *pruritus/prurigo gravidarum*.

What causes it?

ICP is caused by a defect in the excretion of bile from the liver resulting in rising bile acids in the blood. The exact mechanism is still not fully understood, but current research suggests genetic, hormonal, and environmental factors. Recently, a particular gene mutation (change in a specific gene) has been detected in some ICP patients.

ICP typically develops when there are high hormone levels in late pregnancy. It may also occur in women on the oral contraceptive pill. In Central Europe, less than about 2% of pregnant women will get the condition; in Scandinavia and South America, ICP is more common.

Does Intrahepatic Cholestasis of Pregnancy run in families?

Yes – mothers and sisters of patients with ICP are at higher risk of developing ICP, because there seems to be a change in one of the genes which may be present in other family members. ICP also tends to recur in following pregnancies (60-90%).

What are its characteristics and what does it look like?

The main characteristic is a sudden onset of severe itch that typically increases in severity until you are either treated for it or delivery takes place. It often starts on the palms and soles, but then quickly involves the whole body. The longer the itch persists, the more skin changes may be present due to scratching. These vary from fine scratch marks (*excoriations*) to

5-10 mm raised lumps (so-called *prurigo* nodules) typically involving the shins, arms, and buttocks. Apart from these changes, there is usually no rash associated with ICP. Loss of sleep, loss of appetite, and inability to perform normal daily tasks can be a result of the intense itching.

Less common symptoms (<10% of patients) include dark urine and/or pale stools (greyish in colour), jaundice (the whites of your eyes and sometimes the skin becomes yellowish), pain in your belly, and nausea.

How is Intrahepatic Cholestasis of Pregnancy diagnosed?

The best available test for ICP is the "serum bile acid test." A diagnosis of ICP is certain when bile acid levels are elevated above the normal range. As bile acids are not part of a routine liver function test, this test must be specifically requested by your clinician. However, there are only few laboratories that have the equipment necessary to perform this test, so because of this the diagnosis may be delayed.

A routine liver function test that measures liver enzymes in the blood should also be done when checking for ICP. However, this test may be normal in ICP, meaning you may still have ICP, because serum bile acid levels typically rise before liver enzymes increase. If serum bile acid levels are normal but the liver function test is found to be increased, your clinician will search for other liver diseases (for example hepatitis), which require other tests to diagnose.

Will the baby be affected?

Yes, this may happen. ICP harbours an increased risk for foetal distress (being unwell), premature (early) labour, and infant stillbirth (intrauterine death of the baby). Your chance of having a stillbirth depends on the level of bile acids found in your blood as well as any other pregnancy complications you may be experiencing.

If your bile acid levels are between 19 and 39 micromol/L (Mild ICP) and you do not have any other risk factors, the chance of you having a stillbirth is no different to someone who doesn't have ICP.

If your bile acid levels are between 40 and 99 micromol/L (Moderate ICP), and you do not have any other risk factors, then the chance of you having a stillbirth is similar to someone who doesn't have ICP until you are 38-39 weeks' pregnant.

If your bile acid levels are 100 micromol/L or more (Severe ICP), your chance of having a stillbirth is higher than someone who doesn't have ICP and is around 3%. Most of these stillbirths happen after 36 weeks of pregnancy.

If you have other factors (such as gestational diabetes and/ or pre-eclampsia) or are having a multiple pregnancy (twins or triplets) you may have a higher chance of stillbirth and this may affect when your healthcare team recommend that you give birth.

If liver function tests are abnormal in patients with ICP, in particular an elevated bilirubin, your eyes and skin may turn yellow. Then there is an increased risk for bleeding (haemorrhage) in both the mother and child, because vitamin K, which is essential for blood clotting, is not absorbed properly.

Can Intrahepatic Cholestasis of Pregnancy be cured?

No. It cannot be cured, because it is, at least partly, determined by your

genes. However, treatment for ICP will help both the mother's and baby's symptoms. Without treatment, the itch usually stops within days to weeks after delivery when hormone levels return to normal. However, a recurrence in following pregnancies or being on the contraceptive pill is common (see above).

How can it be treated?

Two important steps may be taken:

1. Reducing the bile acids in your bloodstream:

Ursodeoxycholic acid (UDCA - a naturally occurring bile acid) is currently the best treatment of ICP. UDCA improves the liver function, helps to reduce the toxic (bad) bile acid concentration in the bloodstream and improves bile acid transport across the placenta (taking it away from the baby). However, UDCA is not licensed for use in pregnancy. It may be prescribed on an individual basis, with what is called "informed consent." You have to discuss this with your clinician. For the time being, it is the only treatment that has been shown to reduce not only itching but also foetal risks in ICP. It may reduce the chance of giving birth prematurely but it does not prevent stillbirth. UDCA tablets (15mg/kg/day or simply 1g daily) are given either as a single dose or divided into 2-3 doses and continued until delivery, then treatment can usually be stopped.

Other treatments do not seem to be beneficial. Cholestyramine and other cholesterol-lowering drugs should be avoided because they may increase the risk of bleeding.

2. Planning delivery depending on your bile acid levels.

The recommended timing of your baby's birth will depend on the level of bile acids in your blood and also whether you have any additional risk factors. To reduce your chance of having a stillbirth, you might be asked

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to consider a planned birth rather than waiting to go into labour naturally. In particular with high bile acid levels of 100 micromol/L or more, your obstetrician may recommend planned birth at 35-36 weeks' gestation.

Is treatment safe for the baby and mother? Is any special monitoring required?

UDCA is safe for the mother and baby. The only adverse effect may be mild diarrhoea in the mother.

Close monitoring of the baby is important; your obstetrician may prefer to deliver the baby earlier in order to keep the risk for your baby as low as possible. Certain weekly check-ups upon diagnosis are suggested; apart from regularly checking your bile acid levels, they include a "biophysical profile" (test that uses the *non-stress test* and ultrasound to examine foetal movements, heart rate, and *amniotic*

fluid amounts), *cardiotocography* (evaluates foetal heart rate), and *Doppler flow study* (a type of ultrasound which uses sound waves to measure the blood flow). These tests need to be discussed with a specialist. Six weeks after delivery blood tests are recommended to make sure that your liver enzymes and bile acids have returned to normal. If you still have symptoms or if your blood tests have not returned to normal by this time, you may need to see a specialist for further investigations.

Is normal delivery possible?

Yes.

Can women with Intrahepatic Cholestasis of Pregnancy still breastfeed?

Yes. Neither ICP nor treatment with UDCA influences breastfeeding negatively.

While every effort has been made to ensure that the information given in this leaflet is accurate, not every treatment will be suitable or effective for every person. Your own clinician will be able to advise in greater detail.