



## OBSTETRIC CHOLESTASIS : A REVIEW ARTICLE

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**ABSTRACT** Obstetric cholestasis is a rare condition which occurs during the last trimester of pregnancy. The condition does not usually pose a serious risk for the mother's long term health, but it may cause severe complications for the infant like pre mature birth, still birth, meconium aspiration etc. Cholestasis happens when the liver cannot excrete bile properly in to the duodenum and as a result the bile gets deposited under the skin. It is thought that pregnancy hormones, and especially the additional estrogen, may affect the proper functioning of the gallbladder and the liver. The most prominent symptom is itching over the palms of hands and soles of the feet often becomes worse during the night other common symptoms are dark urine, light coloured feces, jaundice. Cholestasis is diagnosed when the total bile acids (TBA) or serum bile acids are measured at 10 micromol/L and above. Close monitoring of the mother and fetal wellbeing is mandatory to avoid complications. Regular maternal blood test, USG, NST should be assessed. Urodeoxycholic acid, is a drug of choice to relieve itching and increase bile flow, tropical ointments are also useful and also vitamin K supplements are suggested because patients with cholestasis will have low levels of vitamin K, increasing the chance of haemorrhage.

## KEYWORDS :

**Introduction**

Cholestasis is of two types extra hepatic and intra hepatic cholestasis. Bile is a yellow –green fluid that helps to digest fat. It mainly consists of cholesterol, bile salt, and the pigmented bilirubin. It is produced by the liver and stored in the gall bladder, from the gall bladder it passes through the common bile duct into the duodenum. Some times a blockage outside the liver prevents the bile from leaving the liver, leading to a condition known as extra hepatic cholestasis. Intra hepatic cholestasis happens when there is a problem with eliminating the bile salt from the liver. Intra hepatic cholestasis also called obstetric cholestasis, cholestasis of pregnancy, jaundice of pregnancy, and prurigo gravidarum. It most often presents in

**Definition**

Obstetric cholestasis is a rare condition in which the normal flow of the bile is affected by the increased amount of pregnancy hormones. This condition usually develops in the late second or early third trimester of pregnancy.

**Incidence**

It is uncommon, affecting 1 in 140 pregnant women (0.7%). Mothers whose family birth origins are India or Pakistan have a slightly higher risk (1-2%). Approximately 1% of pregnancies in the United States are affected by this condition. According to Cincinnati Children's Hospital Medical Center, Cholestasis occurs in about 1 out of 1,000 pregnancies but is more common in Swedish and Chilean ethnic groups

**Risk factors of Developing Cholestasis**

- More common in women who have a history of liver disease.
- Women who have a medical history of developing gall stones.
- Multiple pregnancies.
- In women who have a family history of their mother or sisters having Cholestasis.
- Being of Swedish or Chilean descent. Women from these countries are at a higher risk.
- Having a history of itchy skin (pruritis) when taking the oral contraceptive pill.

**Causes**

- ICP/OC occurs when there is a reduced flow of bile down the bile ducts in the liver.
- Bile is a fluid that is made by the liver that helps with digestion.
- The reduced flow causes the bile acids to leak out into the bloodstream
- **Hormonal factors.** Pregnancy causes an increase in oestrogen and progesterone hormones. These can affect the liver in a way which slows down the bile as it passes out along the tiny bile ducts. Some pregnant women may be more sensitive to these hormonal effects.
- **Genetic factors.** Obstetric cholestasis seems to run in some

families (although it may skip some generations). One theory is that women who develop obstetric cholestasis may have inherited a very slight problem with the way bile is made and passes down the bile ducts. This doesn't matter when they aren't pregnant but the high level of hormones made during pregnancy may tip the balance to really slow down the flow of bile

- **Environment:** ICP/OC is more common in the winter months, which is why dietary factors may be involved including lack of vitamin D and selenium (a nutrient found in certain foods) levels.
- **Gallstones:** A collection of small stone masses in the gallbladder caused by imbalances of bile (pregnant women are also more at risk of gallstones due to increased estrogen levels) can also be the culprit.

**Clinical manifestations**

Most women with this condition present in third trimester with itching without a rash. Typically, the itching is localized to the palms of the hands and soles of the feet but can be anywhere on the body.

**Most common**

- Itching, in particular but not limited to that of the palms of the hands and soles of the feet, without presence of a rash
- Itching that increases in the evening
- Itching that does not respond favourably to anti-histamines or other anti-itch remedies
- Often, elevated LFT results as well as serum bile acid counts

**Less common:**

- Darker urine
- Lighter stools
- Increased clotting time (due to possibly associated vitamin K deficiency)
- Fatigue
- Increased nausea
- Decrease in appetite
- Jaundice
- Upper right quadrant pain

**Diagnostic findings**

- ICP is diagnosed when the total bile acids (TBA) or serum bile acids are measured at 10 micromol/L and above.
- A diagnosis of cholestasis can be made by doing a complete medical history, physical examination, and blood tests that evaluate liver function, bile acids, and bilirubin.
- The liver function tests (LFTs) is a simple blood test, the results of which should be available by the next day. If the ALT level is elevated, this, plus pruritus of palms and soles, could be considered as potentially diagnostic of ICP but only with elevated bile acid level.
- The serum bile acid blood test for ICP is a quantitative

measurement of bile salts. The results of this test often take longer to return, but the test is more specific for ICP.

- Other problems with the liver that occur in pregnancy like preeclampsia, the HELLP syndrome, and acute fatty liver of pregnancy. Furthermore, other causes of hepatitis, like hepatitis viruses, cancer and certain medications, should also be considered.

### Management

- Close monitoring of the mother and her baby is essential.
- Regular blood tests are frequently ordered to determine liver function and bile concentration.
- Fetal monitoring and recording may be attended. This is to ensure the baby is not becoming stressed by the higher levels of bile salts in the mother's blood stream.
- Planning may be made for a caesarian section delivery of the baby.
- Occasionally a mother will have an ultrasound to determine that there is no underlying liver disease or gallstones. If present, these may exhibit similar symptoms to Cholestasis.
- It is important to determine if the mother has a previous history of liver disease, excessive drinking, illicit drug use or risk taking behaviours.
- Mothers with Cholestasis are often referred to a specialist obstetric physician who specialises in liver disease during pregnancy.
- If the bile salt level exceeds a certain point, or the liver function is becoming compromised, then admission to hospital for monitoring becomes necessary.
- There needs to be careful management to ensure the placenta is delivered complete with the membranes.
- Topical anti-itch medications or medication with corticosteroids
- Medication to decrease the concentration of bile acids such as ursodeoxycholic acid
- Cold baths and ice water slow down the flow of blood in the body by decreasing the temperature
- Dexamethasone is a steroid that increases the maturity of the baby's lungs
- Vitamin K supplements administered to the mother before delivery and again once the baby is born to prevent intracranial haemorrhage
- Regular blood tests monitoring both bile serum levels and liver function

### Complications

Maternal consequences include the following:

- Itching, which can become intense and debilitating
- Premature labour
- Deranged clotting, which requires Vitamin K

Fetal consequences include:

- Fetal distress
- Meconium ingestion
- Meconium aspiration syndrome
- Stillbirth

### Conclusion

Obstetrician often induce labour early if the mother has cholestasis of pregnancy, because of the potentially serious complications for the baby. Cholestasis of pregnancy may increase the risk of metabolic disorders, such as obesity and cardiovascular disorders, when the child reaches adult hood.

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