Review Article

Obstetric Cholestasis: An Overview

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ABSTRACT

Obstetric cholestasis is a multifactorial condition of pregnancy characterized by intense pruritus in the absence of a skin rash with abnormal liver function tests which is resolved after birth. It occurs during third trimester of pregnancy and incidence varies in different countries. Diagnostic findings usually have raised concentrations of bile acids greater than 10 micromoles /L and 40 micromoles/L have been associated with increased fetal risk. UDCA (Ursodeoxycholic acid) are beneficial for symptomatic relief of pruritus and decrease in abnormal liver function test and bile acid. In addition, detailed study of the consequences of maternal cholestasis on both placental transport function and fetal hepatic transport capacity may help to prevent fetal distress and Intra Uterine fetal Death in the clinical setting. Adverse perinatal outcome is a major concern with potential fetal risks, which may include spontaneous preterm birth, iatrogenic preterm birth and fetal death. The objective of the review is to explore and share about Obstetric cholestasis and its management.

Keywords: Fetal risk, Obstetric cholestasis, Pruritus

INTRODUCTION

Obstetric Cholestasis (OC) also referred to as intrahepatic cholestasis of pregnancy, is a liver disorder where there is liver dysfunction associated with pruritus (Shrestha & Panta, 2017).It usually occurs with a complex etiology including genetic, environmental and endocrinological factors (South Australian Perinatal Practice guidelines, 2016). It classically presents in the third trimester with pruritus typically of palms and soles with raised serum bile acid level. The symptom and biochemical abnormalities resolve rapidly after delivery but may recur in subsequent pregnancies and with the use of hormonal contraception. It has been consistently associated with higher incidence of adverse pregnancy outcomes including spontaneous and iatrogenic preterm delivery, non-reassuring fetal heart rate, meconium stain in amniotic fluid and still birth (Williamson & Geenes, 2014). A study results from a large Swedish cohort showed that pregnancies in which the maternal serum bile acid concentration was of 40 μmol/L or more were more likely to be complicated.

INCIDENCE AND ETILOGY

It varies in different countries and is very low in Europe (0.1 to 1.5%) and Scandinavian countries, whereas in Chile and china are high (14%)). It is 1.2-1.5% in India and Pakistan (Pokhrel, Ghimire, Jha, Chhetri & Kumar, 2016). Usually 1 pregnancy in 1,000 are affected by cholestasis during pregnancy (American Pregnancy Association, 2017).

The review of several study findings found that the exact etiology is unknown and other factors associated with the genetic positive family history in 33-50% of patients with an autosomal dominant inheritance pattern and reproductive hormones of an estrogen. The levels of estrogen are highest in the third trimester and this is the most common time of presentation. The other studies also revealed that several environmental factors such as winter months and deficiency of dietary selenium levels, which acts as a cofactor of several enzymes in the oxidative metabolism in the liver are responsible (Rigby & Ramus, 2018).

Fetal effect

The increased levels of maternal serum bile acids intoxicate the intra-uterine fetal environment. Of amniotic fluid, umbilical cord and meconium resulting fetal arrhythmia due to reduced execratory function of bile salts from placenta which ultimately leads to fetal distress, premature labor and still birth. (Pradhan, & Shao, 2013).

DIAGNOSIS AND MANAGEMENT

Review from different sources revealed that the classic symptom includes severe pruritus develops on the soles of the feet and palms of the hands and spreads to the trunk and limbs. It may be so intense that lead to insomnia and excoriations may progressively worsen up until birth. Others signs has been mentioned as dark urine, pale stools. Anorexia, steatorrhoea and, rarely jaundice (South Australian Practice guidelines, 2016).

Diagnosis of cholestasis in pregnancy is confirmed by clinical features and serum level of bile acids greater than 10µmol/L (Glantz, Reilly, & Benthin, 2008). The Liver Function Tests (LFT), Amino transferase (ALT, AST) (Joshi, James, Qugalia, Westbrook, & Heneghan, 2010).

The management are focused on diagnosis, fetal surveillance, drug therapy and delivery planning (Pokhrel et al 2016).

Antenatal Management

Frequency of fetal surveillance with ultrasound and CTG monitoring are the decision of the obstetric team.

Maternal pruritus is managed with use of topical emollients e.g. calamine lotion which provide temporary relief of itching. The woman should advice to wear cool loose cotton clothing keep skin moisturized, cool baths/showers for comfort. She should encourage for low fat diet, and increase water intake. Anti-histamines at night are beneficial for their sedative effect.

Vitamin K supplementation-Obstetric cholestasis can lead to a reduction of circulating enerohepatic bile acids causing reduced absorption of fat-soluble vitamins (RCOG, 2006).

Ursodeoxycholic acid (UDCA) - improves pruritus and liver function. (Serum bilirubin, Aminotransferase, TBA, and cholic acid). It activates transporter protein into the canalicular membrane and improves bile salt export from the liver. It restores impairment of maternal-placental bile acid transport across the placental trophoblasts (Pradhan & Shao, 2013).

Nutritional supplementation with multivitamin is advised for Steatorrhea and low fat diet for malabsorption.

Labor, birth and post natal management

Timing of birth is in between 37 - 38 weeks of gestation, or earlier if there is risk for maternal morbidity or fetal compromise detected on admission, arrange a blood group, full blood picture, LFTs and coagulation profile. Monitor the fetal heart rate continuously with a CTG and anticipate the risk of meconium liquor hence a pediatrician at delivery as necessary. Administration of corticosteroids if induction of labor is anticipated prior to 36+6 weeks gestation (Mays, 2010).There is chance of 1.5 fold increase in cesarean delivery and 8 fold increase in duration of hospital stay for more than 10 days, 3 fold increase in induction of labor (Turunen, Sumanen, Haukilahti, Kirkinen, Mattila, 2010).

Postnatal mother is counsel prior to discharge about risk of reoccurrence in a subsequent pregnancy (40-60%). Reassure that pruritus normally resolves within 48 hours of giving birth, however in some women it may last 4-8 weeks. The combined oral contraceptive pill in postpartum should be avoided (Barr, 2015).

CONCLUSION

Obstetric cholestasis seems fairly common among pregnant women. It was found to be responsible for a large number of perinatal and neonatal deaths especially after 36 weeks of gestation. Close fetal monitoring and timely intervention decreases perinatal mortality significantly.

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