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Prevalence and clinical outcome of the pregnant women suffering from jaundice

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Abstract
This study was conducted to study the epidemiology, magnitude and causes of jaundice in pregnancy and to assess the maternal and fetal outcome in pregnancies complicated by jaundice.
30 pregnant females diagnosed with Jaundice in the Department of Obstetrics& Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, were enrolled in the present study. All the patients were studied by clinical examination as well as diagnostic tests. The diagnostic tests included the Blood Tests such as Liver function test, Kidney function test, Coagulation Profile, Obstetrics Ultrasonography and Abdominal Sonography. Serological monitoring for the virus identifications were also done.
By the present study we concluded that pregnancy complicated with jaundice had very poor maternal as well as foetal outcome. In this study most common predominant cause was pre-eclampsia, HELLP syndrome followed by viral hepatitis. Hence it is important that early diagnosis and management is necessary to overcome burden of disease and to reduce high maternal and maternal mortality in jaundiced pregnant women.

Keywords: jaundice, pregnancy, females, fetus

Introduction
Intrahepatic cholestasis of pregnancy (ICP), also known as obstetric cholestasis, cholestasis of pregnancy, jaundice of pregnancy, and prurigo gravidarum, is a medical condition in which cholestasis occurs during pregnancy. It typically presents with troublesome itching and can lead to complications for both mother and foetus. Pruritus (itching) has long been considered to be a common symptom of pregnancy. The vast majority of times, itching is a minor annoyance caused by changes to the skin, especially that of the abdomen. However, there are instances when itching is a symptom of ICP. This is usually most intense on the palms of the hands, and the soles of the feet, but can be widespread. ICP occurs most commonly in the third trimester, but can begin at any time during the pregnancy [1].
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. The causes of intrahepatic cholestasis of pregnancy are still not fully understood. Hormones and genetic factors are likely to be important in the pathogenesis of the disease. A number of features of the disease suggest a link to hormones.
Estrogens, and particularly glucuronides such as estradiol-17β-D-glucuronide, have been shown to cause cholestasis in animal studies, by reducing bile acid uptake by hepatocytes. Treatment with progesterone in the third trimester of pregnancy has been shown to be associated with the development of ICP, and levels of metabolites of progesterone, particularly sulfated progesterone, are higher in patients with ICP than unaffected women, suggesting that progesterone also has a role in ICP [2].
Abnormal liver function tests occur in 3%-5% of pregnancies. Pregnancy encompasses a wide variety of physiological changes with increased, decreased or unchanged parameters. Liver function abnormality can represent a physiological change, but elevations of transaminase, bilirubin, and prothrombin time almost always indicate a pathologic state.. Histology of the liver remains essentially normal during pregnancy. Lack of understanding of these changes can be misinterpreted as pathologic and can alter the criteria for diagnosis and therapy. The presenting clinical features of liver disease in pregnancy are often nonspecific and consist of jaundice, nausea, vomiting and abdominal pain. All liver diseases occurring during pregnancy can lead to increased maternal and foetal morbidity and mortality.
The prevalence of chronic hepatitis B and C is quite high in India. Usual presentation is elevation of liver transaminases and bilirubin levels and diagnosis is similar to a non-pregnant woman. Mothers who are hepatitis B e antigen (HBeAg) positive have higher rates of perinatal transmission than do mothers with negative HBeAg. Without treatment 90% of infants born to HBeAg positive mothers and 10% of infant born to HBeAg negative mothers develop hepatitis B virus infection. The infants should receive hepatits B immunoglobulin at birth and also hepatitis B vaccine during the first day of life and at ages 1 and 6 months. Women with chronic hepatitis B are not treated with interferon during

pregnancy however therapy with the nucleoside analogue, lamivudine is probably safe and has been reported to reduce the incidence of neonatal vaccination failure.

Pregnancy promotes lithogenesis due to biliary cholesterol saturation and inhibition of the hepatic synthesis of chenodeoxycholic acid. In addition, prepregnancy obesity, low activity level, low serum leptin levels, and a history of gallbladder disease are risk factors for gallbladder disease. Approximately 10% of pregnant women may have gallstones by the third trimester, compared with 5% at the beginning. Gallstones regress in the postpartum period. Laparoscopic cholecystectomy for symptomatic cholelithiasis is particularly safe when performed during the second trimester [3].

While most pregnant women experience some itch from time to time, itching on the palms and soles without a visible rash, or persisting severe or extensive itch symptoms should be reported to the obstetrician.

To obtain a diagnosis of ICP, there are two diagnostic tests- LFT (liver function tests) and Serum bile acid test. 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 levels (however LFTs are not always elevated in ICP patients). 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 should be considered by the treating clinician. These include 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.

Upon diagnosis, many providers will prescribe Ursodeoxycholic Acid. While there is no cure for ICP, and no way to guarantee a successful outcome, studies have shown a slightly better fetal and maternal outcome from administration of Ursodeoxycholic Acid, whereas Cholestyramine appears to only relieve itching [4]. If additional blood tests to check clotting function identify a problem, giving Vitamin K may help avoid the risk of hemorrhage at delivery.

Delivery by 35–37 completed weeks may be important to fetal outcome as a recent study demonstrated that in severe ICP (defined as bile acids greater than 40 umol/L) the risk of stillbirth was 1.5% compared to 0.5% of uncomplicated pregnancies. This risk rose further if bile acids doubled [5].

This study was conducted to study the epidemiology, magnitude and causes of jaundice in pregnancy and to assess the maternal and fetal outcome in pregnancies complicated by jaundice.

Materials & Methodology

30 pregnant females diagnosed with Jaundice in the Department of Obstetrics & Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, were enrolled in the present study. All the patients were studied by clinical examination as well as diagnostic tests. The diagnostic tests included the Blood Tests such as- Liver function test, Kidney function test, Coagulation Profile, Obstetrics Ultrasonography and Abdominal Sonography. Serological monitoring for the virus identifications were also done.

Some patients were kept in ICU with monitoring of the Haemodynamic profile, coagulation profile and renal function. Broad spectrum antibiotics like cephalosporin which are non-hepatotoxic are recommended along with antimicrobials. Foetal monitoring was also done by biophysical method.

Following was the inclusion criteria and exclusion criteria of the present study.

- **Inclusion criteria:** All pregnant women with singleton pregnancies with spontaneous conception having recent onset of jaundice who got admitted during the aforesaid period.
- **Exclusion criteria:** Patients with • Multiple pregnancy Pregnancies following Artificial Reproductive Techniques • Alcoholism • Chronic liver diseases.

Results & Discussion

The data from the 30 pregnant females suffering from jaundice were collected and presented as below. The age group of the selected cases are ranging from 20-35 years. The common symptoms are nausea, vomiting, yellow colored urination.

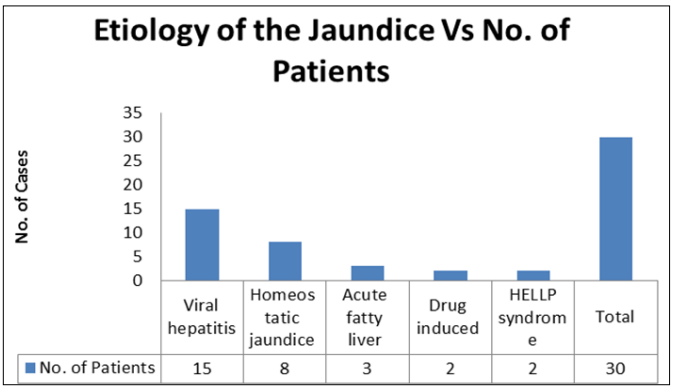

Fig 1: Etiology of the Jaundice Vs No. of Patients

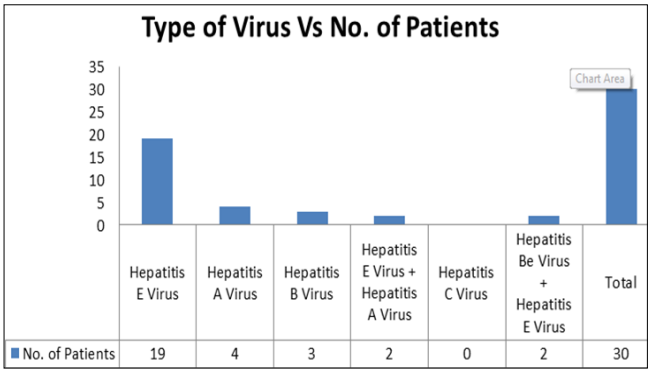

Fig 2: Type of Virus Vs No. of Patients

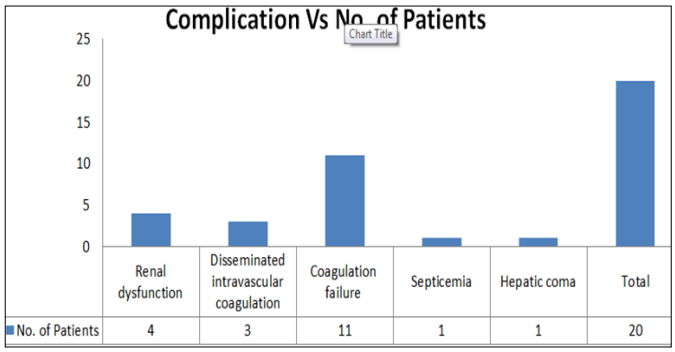

Fig 3: Complication Vs No. of Patients

The incidence of jaundice in India varies from 0.4 to 0.9/1000 deliveries. Jaundice in pregnancy is associated with high maternal and perinatal mortality rates.

The factors responsible for high maternal mortality in our country are poor nutrition, prevalence of anaemia, delay in seeking medical advice and delay in referral to the hospital. Many of the patients when brought to the hospital are already in moribund condition and often, do not respond to treatment. Jaundice and pregnancy is a deadly combination resulting in a very high perinatal as well as maternal morbidity and mortality and requires an early diagnosis and careful management [6].

Comparable results cited by Reddy MG *et al*, who noted haemolysis, elevated liver enzymes, low platelets (HELLP) syndrome, acute fatty liver of pregnancy, intrahepatic cholestasis of pregnancy, viral hepatitis, malaria and sickle cell anaemia were the causes of jaundice in their study [7].

HEV infection is the most prevalent and dangerous type of viral hepatitis in Asian and African continents. The incidence reported by a study done by ICMR is as high as 80-90% in cases of viral hepatitis in pregnancies. In present study Hep E virus found to be most common cause of viral hepatitis it accounts for 45.45% of cases of viral hepatitis. Other studies reported as Acharya N *et al*, Ambreen A *et al*, and Parveen T *et al*, noted HEV being the commonest with a high maternal and perinatal mortality [8 - 10]. Reyes H and Simms HF *et al*, studied the course of viral hepatitis in pregnancy and concluded that its course is unaltered in pregnancy, except in cases of HEV infected cases, in which cases hepatitis has more fulminant course [11-12].

Although liver dysfunction is infrequently seen in pregnancy, it can result in severe maternal and fetal compromise. Viral hepatitis is the most common cause of jaundice in pregnancy. Generating public awareness about the various routes of transmission of the different types of infective hepatitis, improving sanitary conditions and habits, imparting health education and knowledge of preventive measures, routine and regular antenatal check ups and viral markers as a part of routine antenatal screening can help in reducing the burden of jaundice in pregnancy. Jaundice in pregnancy should be managed as a team with collaboration of obstetrics, internal medicine, gastroenterology, anaesthesia and critical care so that early diagnosis and aggressive management can prevent and reduce feto maternal morbidity and mortality.

Conclusion

By the present study we concluded that pregnancy complicated with jaundice has very poor maternal as well as foetal outcome. In this study most common predominant cause was pre-eclampsia, HELLP syndrome followed by viral hepatitis. Hence it is important that early diagnosis and management is necessary to overcome burden of disease and to reduce high maternal and foetal mortality in jaundiced pregnant women.

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