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Liver abnormalities in pregnancy



Nwe Ni Than, MB BS, MRCP (UK), Specialist Registrar,
James Neuberger, DM, FRCP, Hon. Consultant Physician*

Liver Unit, Queen Elizabeth Hospital, Birmingham B15 2TH, UK

A B S T R A C T

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Abnormalities of liver function (notably rise in alkaline phosphatase and fall in serum albumin) are common in normal pregnancy, whereas rise in serum bilirubin and aminotransferase suggest either exacerbation of underlying pre-existing liver disease, liver disease related to pregnancy or liver disease unrelated to pregnancy. Pregnant women appear to have a worse outcome when infected with Hepatitis E virus. Liver diseases associated with pregnancy include abnormalities associated hyperemesis gravidarum, acute fatty liver disease, pre-eclampsia, cholestasis of pregnancy and HELLP syndrome. Prompt investigation and diagnosis is important in ensuring a successful maternal and foetal outcome. In general, prompt delivery is the treatment of choice for acute fatty liver, pre-eclampsia and HELLP syndrome and ursodeoxycholic acid is used for cholestasis of pregnancy although it is not licenced for this indication.

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Introduction

Although pregnancy is not a disease, it has been associated with liver disease which may be fatal in rare cases. Liver function test (LFT) abnormalities occur in 3% of pregnancies [1] and jaundice in 0.1% [3]. Liver diseases in pregnancies are divided into four categories:

- 1) Pregnancy occurring in chronic liver disease and portal hypertension,
- 2) Liver disease unique to pregnancy,
- 3) Liver disease unrelated to pregnancy and
- 4) Pregnancy occurring in a woman with pre-existing liver disease or after liver transplantation.

* Corresponding author. Tel.: +44 121 627 2414.

E-mail addresses: James.Neuberger@uhb.nhs.uk, James.Neuberger@nhsbt.nhs.uk (J. Neuberger).

This chapter will focus on those liver diseases that are unique to pregnancy because those are the most common causes of liver diseases in pregnancy [5]. However, it should be noted that the natural history of some liver diseases may be modified by the pregnancy so, for example, Hepatitis E infection or herpes hepatitis, appears to be more severe in the pregnant women. Pregnancy post liver transplantation will be discussed briefly at the end of this article.

The five common causes of liver abnormalities and disease that are associated with pregnancy are

- Hyperemesis gravidarum (HG),
- Pre-eclampsia/eclampsia,
- HELLP syndrome (Haemolysis, Elevated liver enzymes and Low platelets),
- Intrahepatic cholestasis of pregnancy (ICP)
- Acute fatty liver of pregnancy (AFLP)

Normal physiology in pregnancy

A woman experiences normal physiological changes with her body during pregnancy to support fetal growth and development. These changes are due to increase in hormones (oestrogen and progesterone) and haemodilution during pregnancy. There is a 20% increase in total body water during pregnancy, and cardiac output increases 30%–50% [2]. The increment in cardiac output represents shunting of blood to the fetal-placental unit [2].

Due to altered immunological status during pregnancy, there may be an opportunity to reduce the burden of immunosuppression in patient with known autoimmune liver disease and in those following liver transplantation; however, there is an increase risk of relapse and rejection post delivery.

See (Table 1).

Increased serum levels of bilirubin and transaminases, hepatomegaly, splenomegaly, liver tenderness, or bruits do not occur in normal pregnancy and the clinical findings of jaundice is always abnormal [3]. Elevated total bile acid concentration during pregnancy may be pathologic and should prompt further evaluation (Table 2).

Low serum albumin and high alkaline phosphatase (ALP) levels from placental production are normal variant of pregnancy. The prothrombin time and the partial prothromboplastin time remain unchanged during normal pregnancy although the serum fibrinogen increases in late pregnancy [1]. Serum cholesterol and triglyceride levels begin to rise in the fourth month of pregnancy and peak at term [2]. At term, pregnant women have a 25%–50% rise in serum cholesterol levels and a 150% increase in serum triglyceride levels [2].

Table 1

Other causes of liver disease in pregnancy.

Pregnancy unrelated liver diseases	
Pre-existing liver disease in the pregnant woman	• Cirrhosis and portal hypertension
<ul style="list-style-type: none"> • Viral Hepatitis B and C • Autoimmune liver diseases • Wilson's disease • Other pre-existing liver disease • Liver transplantation 	
De novo liver and biliary disease unrelated to pregnancy	• Viral hepatitis (A, B, C, E, other viruses)
<ul style="list-style-type: none"> • Drug induced liver injury • Biliary/gall bladder disease • Other 	
Diseases that may be exacerbated during pregnancy	• Budd–Chiari syndrome
<ul style="list-style-type: none"> • Liver adenoma • Polycystic disease 	

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