Hepatitis B and C – Maternal and Neonatal Care

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1. Overview and Scope

Background

An estimated 5.7% of the NZ population are **Hepatitis B** positive. Hepatitis B causes inflammation of the liver; it can lead to cirrhosis, liver failure and liver cancer later in life.

The main cause of transmission is vertical transmission during birth. This can be prevented by Hepatitis B Immunoglobulin and early immunisation of the newborn, and in some cases treatment of the mother in the 3rd trimester with Tenofovir.

It is estimated around 1% of women of childbearing age are affected by **Hepatitis C** but only half are diagnosed. Hepatitis C is a blood-borne virus which leads to inflammation of the liver, possibly liver failure and liver cancer later in life.

Hepatitis C is much less infectious than Hepatitis B and requires blood to blood contact (usually via needles) to be transmitted. Vertical transmission of Hepatitis C is rare (4 – 5%). Hepatitis C is now easily curable, so identification of infected women and appropriate treatment once no longer breastfeeding is the goal.

Scope

Maternity access holders, maternity staff and neonatal clinical staff

2. Antenatal screening

2.1 Hepatitis B

Hepatitis B screening for HBsAg is recommended for every woman as a part of routine antenatal blood tests in order to identify women with chronic hepatitis B infection (CHB).

If a woman has an HBsAg positive result – request the following:

- Hepatitis B e antigen (HBeAg)
- Anti-HBe (antibody to HBeAg)

- HBV DNA level (viral load) to identify women who would benefit from antiviral therapy
- LFTs

This should be done ***prior to any invasive antenatal procedures*** such as amniocentesis or CVS testing.

- If the viral load is >200 000 IU/mL (>6 log copies per mL) **and** the woman is Hep B e antigen positive refer to an obstetric physician.
- Advise HBsAg positive women that their children, partner, and household contacts should also be screened by their GP as soon as possible.
- Notify the GP
- Refer to The Hepatitis Foundation of New Zealand for on-going follow up.
  Contact details Email: hepteam@hfnz.nz
  Freephone: 0800 33 20 10

2.2 Hepatitis C

Routine testing of mothers without risk factors is not currently recommended, however Hepatitis C screening (HCV antibody test) should be offered to all women who have increased risk or have symptoms of Hepatitis C:

- History of injectable drug use
- Blood transfusion or organ transplant prior to July 1992
- Tattoo or piercing using unsterile equipment
- Lived (or received medical or dental treatment) in a country/region with high HCV prevalence. These are: **European, Eastern Mediterranean, Western Pacific, South-East Asian and African regions.**
- Been in prison
- Born to a mother with HCV (or who had a history of drug addiction)
- Unexplained elevation of LFT's

Symptoms include:

- Chronic Fatigue
- Pruritus in pregnancy

If a woman has an HCV antibody positive result – further investigations are required:
HCV RNA testing should be requested to determine if they actually have Hepatitis C.

This test should be done ***prior to invasive procedures*** such as amniocentesis or CVS.

3. Antenatal treatment

3.1 Hepatitis B

Pregnant women with a high viral load (>200,000 IU/mL) should be offered treatment with antiviral therapy (Tenofovir) during the third trimester to reduce the risk of mother-to-child transmission during birth.

Refer to a specialist physician clinic for a treatment plan. The clinic letter should automatically be sent to the GP which will include postnatal follow-up.

Tenofovir should be commenced at 28 weeks gestation and continue for 8 weeks postpartum. Tenofovir is funded and should be prescribed as **Tenofovir Disoproxil (Teva) 245mg once daily.** It is fully funded - a Pharmac Special Authority number to prescribe Tenofovir is no longer required.

Tenofovir is a category B medication; however it has a long safety record in pregnancy, although data sheets advise against breastfeeding Tenofovir cannot be readily absorbed in the GI tract so the amount

absorbed from breastmilk is thought to be negligible. It is therefore recommended that treatment can continue while breastfeeding.

3.2 Hepatitis C

Hepatitis C cannot be treated with antiviral therapy during pregnancy. Pregnant women identified with chronic Hepatitis C should be counseled on the risks of transmission to the baby and on measures to reduce this. They should be referred to their GP to discuss treatment options postnatally and for follow up of the baby.

4. Reducing perinatal transmission during birth

4.1 Hepatitis B

An infant of a HBsAg positive mother with a high viral load (>200 000 IU/mL, or if HbeAg positive) has a 70-90% risk of transmitting HBV during birth and an infant of a HBsAg positive mother with a low viral load (carrier mother) has a 5-20% risk of transmission. Hepatitis B vaccine and hepatitis B immunoglobulin reduces the relative risk of neonatal HBV transmission by more than 95%.

Avoid the use of fetal scalp electrodes, fetal blood sampling and instrumental birth where possible. Caesarean section is not recommended as a means of reducing perinatal HBV transmission.

4.2 Hepatitis C

The risk of vertical transmission of Hepatitis C is low (less than 5%). However the risk is increased with a high viral load, prolonged rupture of membranes and invasive procedures.

Avoid the use of fetal scalp electrodes, fetal blood sampling and instrumental birth where possible. Caesarean section is not recommended as a means of reducing perinatal hepatitis C transmission.

5. Care of the baby at birth

Follow these steps if the mother is Hepatitis B antigen positive (HBsAg) or Hepatitis B status is unknown, or Hepatitis C RNA positive, or if either Hepatitis C RNA positive or HCV RNA is unknown:

1. Wear personal protective equipment (as part of standard precautions) especially when there is a risk of body fluid splash (e.g. gown, gloves, protective eye wear)
2. Perform hand hygiene before and after any mother or baby contact
3. Wear gloves when handling the baby until washed and dried
4. If >32 weeks gestation, bath the baby as soon as possible (and prior to vitamin K administration) using baby wash/soap.
5. Encourage and support baby to breastfeed

There is no evidence that breastfeeding increases the risk of Hepatitis B or Hepatitis C transmission. If the mother is Hepatitis C positive and her nipples are cracked and/or bleeding. Encourage the mother to discontinue breastfeeding but support lactation until the nipples are healed.
Tongue tie release (frenotomy) is not recommended until 24 hours following hepatitis B prophylaxis.

6. Neonatal Hepatitis B prophylaxis after birth

6.1 Infants born to hepatitis B antigen positive mothers

- Order Hepatitis B Immunoglobulin from Blood Bank (NZ blood form), tick ‘other’ and document Hepatitis B Immunoglobulin 110 IU.

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- Hepatitis B vaccine is kept in the fridge in the birthing areas. Store products at 2-8 degrees Celsius
- Fully complete **'Consent for Hepatitis B Vaccination and Hepatitis B Immunoglobulin'** consent form and follow instructions regarding distributing copies.

- As soon as possible after birth (and within 12 hours) administer the **Immunoglobulin and vaccine**. If delay longer than 7 days inform a paediatrician. *Refer administration section 6.3*
- Vitamin K can be given in either leg but at a different site.
- Observe closely for 20 minutes after administration
- Record medication administration in the clinical records and in the well child book

6.2 Infants born to mothers where Hepatitis B status is unknown

- As soon as possible after birth (and within 12 hours) administer the **vaccine**. *Refer administration section 6.3*
- Obtain a blood sample from the mother to check her hepatitis B serology
- If the mother is found to be HBsAg positive, administer the **immunoglobulin** (within 48 hours)
- If delay longer than 7 days inform a paediatrician.

6.3 Administration of immunoglobulin and vaccine

HBIG neonatal 110 IU:
Allow the preparation to reach room temperature before administering
Administer slowly by the IM route into the outer aspect of the right thigh. Do not give IV

Hepatitis B immunoglobulin 110 IU intramuscularly 0.5mL (HBIG neonatal) in outer aspect of right thigh

HBvaxPRO 5mcg:
Shake vial well before drawing up vaccine. Thorough agitation at the time of administration is necessary to maintain suspension of the vaccine.
Administer slowly by the IM route into the outer aspect of the thigh. Do not give IV

HBvaxPRO 5mcg intramuscularly in outer aspect of left thigh

Contraindications and adverse reactions

Severe thrombocytopenia or coagulation disorder that would contraindicate IM injection

Adverse reactions

Local tenderness at injection site
Rarely fever, vomiting, pyrexia, tachycardia and anaphylaxis

6.4 Follow up treatment

Further hepatitis B vaccines are required for infants at 6 weeks, 3 months, 5 months (plus serology testing) and 9 months. Make sure the woman, LMC and GP are aware.

The woman should continue to take Tenofovir for 6 weeks post partum.

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7. Infants born to Hepatitis C RNA positive mothers

There is currently no treatment available for neonates born to HCV RNA positive mothers so no immediate action is required. The risk of vertical transmission to babies is low (<5%) and Hepatitis C is much less infective than Hepatitis B (it requires blood to blood transmission). You should not consider these babies as potentially at risk of infecting others. Babies should not be tested for Hepatitis C before 18 months of age.

8. Reference Table

1	Immunisation Handbook 2017 (2nd edition, March 2018)
2	Auckland Regional Public Health Service Hepatitis B (2016)
3	The Hepatitis Foundation of New Zealand
4	Management of Hepatitis C in Pregnancy (RANZCOG 2016)
5	Global Hepatitis Report 2017 (World Health Organization)
6	Management of Hepatitis B in Pregnancy (RANZCOG 2016)
7	Medsafe and NZBS product datasheets
8	American Association for the Study of Liver Diseases. Hepatitis B Practice Guidance 2018