GUIDELINE

Hepatitis B Virus (HBV): Care of the infant born to a HBV positive woman

Scope (Staff):	Midwifery, Nursing and Medical Staff
Scope (Area):	Neonatology and Postnatal Wards

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This guideline should be used in conjunction with its respective WNHS Obstetrics & Gynaecology guideline – Sexually Transmitted Infections: Hepatitis B in Pregnancy which provides additional information about hepatitis B infection in pregnancy.

Aim

- To ensure the optimal management of infants born to mothers with chronic hepatitis B infection to prevent perinatal acquisition of infection.
- To ensure the appropriate follow-up of infants born to mothers with hepatitis B infection is arranged in the newborn period.

Risk

Delay in treatment and management can increase the risk of perinatal transmission of hepatitis B virus. Appropriate referrals and follow up processes are required to minimise the risk of transmission.

Background

Approximately 0.9% of the Australian population are living with chronic hepatitis B infection, with immigrants from high prevalence regions and Aboriginal and Torres Strait Islander people accounting for the majority of those affected. Mortality due to chronic hepatitis B infection is seen in up to 25% and is due to associated cirrhosis, hepatic failure or hepatocellular carcinoma[2].

More than 90% of infants that acquire HBV infection perinatally develop chronic infection, as opposed to the vast majority of adolescents and adults that clear HBV soon after infection.

The cornerstone of prevention of mother-to-child transmission (MTCT) of HBV is the administration of HBIG and the first dose of vaccine at the time of birth, followed by

completion of the scheduled primary hepatitis B vaccination course. The overall efficacy of this strategy is reported to be greater than 95%[3]. Failure of immunoprophylaxis is related to maternal hepatitis B e-antigen (HBeAg) positivity and higher maternal HBV viral loads. This has led to the increased use of maternal antiviral therapy from 28-32 weeks gestation as an additional strategy to prevent MTCT in those women with high HBV viral loads[4, 5].

Key points

- The combination of hepatitis B vaccine and hepatitis B immunoglobulin (HBIG) is superior in reducing risk for perinatal transmission of the hepatitis B virus (HBV) than either alone.[1]
- At KEMH it is recommended that neonates born to mothers who are hepatitis B surface antigen (HBsAg) positive receive their first dose of hepatitis B vaccine AND HBIG **as soon as possible after birth** (preferably within 12 hours). Immunoglobulin and the first dose of vaccine can be given at the same time at different sites.
- Women who are high risk for contracting blood-borne viruses, and/or who have given birth without screening for HBV are recommended to have urgent testing to confirm their status. Refer to the WNHS Antenatal care: Late presentation (intrapartum or third trimester) with no or minimal antenatal care for further guidance on maternal care. For neonatal care, refer to Newborn Care of the Infant Born to a Mother receiving Minimal or No Antenatal Care
- Breastfeeding is not contraindicated for neonates born to mothers who are HBsAg positive.
- It is strongly recommended that perinatally exposed infants complete their scheduled 4-dose hepatitis B primary vaccine course (0, 2, 4 and 6 months) as per the National Immunisation Program.
- It is recommended that follow-up serology is performed for the infant, preferably at 9-12 months of age (at least 3 months after completion of their primary HBV vaccination course). This can be performed through the family GP or through referral to the Infectious Diseases outpatient service at Perth Children's Hospital (PCH).
    - If hepatitis B surface antibodies (HBsAb) levels are adequate (> 10 mIU/mL) **and** HBsAg is negative in the infant, the child is considered immune through natural clearance or vaccination.

Management

Postnatal Care of the Neonate at Risk for Perinatal HBV Transmission

At Delivery:

- Standard precautions should be utilised as for all neonates.

- The baby should be wiped down after birth and all excess maternal blood removed. The baby can have skin-to-skin contact with the mother.
- The baby should be bathed as soon as is practical and within 2 hours of birth.
- No intramuscular injections should be administered until the baby has been bathed.
- For an unwell baby who cannot be bathed, the skin should be cleaned with an alcohol swab *prior* to any invasive procedures.

Breast Feeding:

- Breastfeeding should be encouraged and is not contraindicated if a mother is HBsAg positive.[7]
- Women who have chronic hepatitis B infection should be advised not to donate breast-milk.

Immunoprophylaxis

Maternal HBV Status	Neonatal Management	Additional Information
HBsAg positive +/- HBeAg positive	Recommend administration of the first dose of hepatitis B vaccine (monovalent) **plus** HBIG **as soon as possible after birth** (preferably within 12 hours) Follow-up with scheduled HBV-containing vaccines at: • 2 months • 4 months • 6 months[6]	Efficacy of HBIG deteriorates markedly if administration is delayed beyond 48 hours of birth. The hepatitis B vaccine is recommended to be administered at the same time as HBIG but in the opposite anterolateral thigh. If concurrent vaccination is not possible then vaccination should not be delayed beyond 7 days. Preterm (< 32/40) or low birthweight (< 2kg) infants may require a booster HBV-containing vaccine at 12 months of age due to poorer responses to primary vaccination. [6]
Unknown status	Routine HBV vaccination should be recommended as soon as possible after birth (preferably within 24 hours)[6] If the mother is found to be HBsAg positive then HBIG is recommended immediately.	**Urgent** maternal testing is recommended to establish current hepatitis B status (+/- HIV, hepatitis C and syphilis as required).

Maternal HBV Status	Neonatal Management	Additional Information
	Follow-up with scheduled HBV-containing vaccines at: • 2 months • 4 months • 6 months[6]	
HBsAg negative	Routine HBV vaccination should be recommended as soon as possible after birth (preferably within 24 hours).6 Follow-up with scheduled HBV-containing vaccines at: • 2 months • 4 months • 6 months[6]	The vaccine has not been shown to interfere with breastfeeding, and is not associated with risk of fever or medical investigation for sepsis. A catch up schedule is not required if the birth dose is not received.6

Hepatitis B Immunoglobulin (HBIG)

- The dose of HBIG for newborns is 100IU given by intramuscular injection.
- HBIG should be administered as soon as possible after birth and preferably within 12 hours.
- The efficacy of HBIG in preventing perinatal HBV transmission decreases markedly if given more than 48 hours after birth.
- Transfusion Medicine Hepatitis B Immunoglobulin VF (for intramuscular use)

Premature and/or low birth weight infants

Preterm and low-birthweight infants do not respond as well to HBV vaccination as full-term infants.

It is recommended that infants born at less than 32 weeks gestation and/or with a birthweight of < 2kg receive the standard 4-dose primary HBV vaccine schedule at 0, 2, 4 and 6 months followed by either:

a. Measurement of HBsAb titre one month after completion of the primary vaccination course. If HBsAb titre is < 10 mIU/mL, a booster HBV-containing vaccine is recommended at 12 months of age.

b. Administration of a booster HBV-containing vaccine at 12 months of age without measurement of HBsAb titre.

Referral to the PCH Infectious Diseases service is recommended for these infants given the more complex nature of their follow-up.

Follow Up

- Ensure the mother / caregiver is aware of the importance of completing the baby's primary vaccination course and is aware of the schedule for follow-up vaccines (2, 4 and 6 months). Scheduled immunisations as per the National Immunisation Program can be obtained through:
    - Central Immunisation Clinic – 16 Rheola Street, West Perth
        - Phone: (08) 9321 1312 to make an appointment
    - Selected metropolitan community health centres
        - See the HealthyWA website for further information on immunisation clinic schedules
    - Stan Perron Immunisation Centre, Clinic D, Perth Children's Hospital
        - Drop-in centre, no appointment necessary
    - The patient's GP
- Complete a discharge GP letter for neonates born to known HBsAg positive mothers that outlines management to date and required follow-up.
- If preferable for the family, review and follow-up testing can be arranged through the Infectious Diseases outpatient service at Perth Children's Hospital.
    - Send an e-referral including the following details:
        - Maternal HBV viral load during pregnancy (if known)
        - Maternal antiviral therapy during pregnancy (if required)
        - Immunoprophylaxis provided to the baby following delivery
        - The first appointment will be scheduled for when baby is between 9-12 months of age.
- The recommended testing for the baby is as follows:
    - Hepatitis B serology (hepatitis B surface antigen and antibodies; HBsAg and HBsAb) at 9-12 months of age (at least 3 months after completion of the primary vaccination course).
    - If HBsAb levels are adequate (≥10 mIU/mL) and the HBsAg is negative, the child is considered immune through natural clearance or vaccination.
    - The PCH Infectious Diseases Team can be contacted directly to provide advice, including to assist with interpretation of serology results.
- For women with newly identified HBV infection, the HBV immunity status of all other household members should be established with vaccination offered to those who are non-immune.

Related CAHS internal policies, procedures and guidelines

Newborn Care of the Infant Born to a Mother receiving Minimal or No Antenatal Care

References and related external legislation, policies, and guidelines

Transfusion Medicine

Hepatitis B Immunoglobulin VF (for intramuscular use)

WNHS

Antenatal care: Late presentation (intrapartum or third trimester) with no or minimal antenatal care

Sexually Transmitted Infections: Hepatitis B in Pregnancy

WNHS Medication Monograph

Hepatitis B Vaccine

1. Lee C, Gong Y, Brok J, et al. Hepatitis B immunisation for newborn infants of hepatitis B surface antigen-positive mothers. **The Cochrane Database of Systematic reviews**. 2006(2).
2. World Health Organisation. Global Hepattiis Report, 2017. Geneva: World Health Organisation, 2017.
3. Lok AS, McMahon BJ. Chronic hepatitis B: update 2009. **Hepatology** 2009; 50: 661-662.
4. European Association for the Study of the Liver. EASL 2017 Clinical Practice Guidelines on the management of hepatitis B virus infection. **Journal of Hepatology** 2017; 67: 370-398.
5. Terrault N, Bzowej N, Chang K, et al. American Association for the Study of Liver Diseases. AASLD guidelines for treatment of chronic hepatitis B. **Hepatology** 2016; 63: 261-283.
6. Australian Technical Advisory Group on Immunisation (ATAGI). Australian Immunisation Handbook, Australian Government Department of Health, Canberra, 2018, immunisationhandbook.health.gov.au.
7. Palasanthiran P. Starr M, Jones C, Giles M (Editors). Management of Perinatal Infections. Sydney: Australasian Society for Infectious Diseases , 2014.

Useful resources

HealthyWA website

GP Referral Letter

This document can be made available in alternative formats on request.

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Appendix 1: Quick Reference Guide