Infants Born to Mothers who are Hepatitis C Seropositive - Full Clinical Neonatal Guideline – Joint Derby and Burton

Reference no.: NIC IN 07/July 22/v004

1. Introduction

To ensure a standardised approach to the management of babies born to mothers who are seropositive to Hepatitis C.

2. Aim and Purpose

For medical staff to ensure that babies of seropositive mothers are seen appropriately at the appropriate time.

3. Definitions

What is Hepatitis C?

Hepatitis C virus (HCV) affects the liver with 60% of infected children goes on to develop chronic liver disease with a risk of progression to cirrhosis and hepatocellular Carcinoma.

HCV is classified into six major genetic types (genotypes 1–6) with some genotypes also having subtypes A and B. In England and Wales, the most prevalent genotypes are 1a and 1b (47%) and 3a (37%).

The prevalence of chronic HCV infection in the UK is estimated at 0.4%, most infected individuals are unaware of their HCV status. The prevalence in children is not known. Maternal intravenous drug use (IVDU) is a major risk factor for HCV infection.

Risk of Transmission

Vertical transmission is almost always confined to women who have detectable HCV RNA with the risk of transmission increased by higher level of maternal HCV viraemia and maternal HIV co- infection. Estimates of the perinatal transmission frequency vary but range from 0- 8% in different studies.

Both intrauterine and perinatal transmissions are important routes of vertical infection. The mode of delivery does not affect risk of transmission unless the mother is co- infected with HIV and this is when delivery by caesarean section may have a protective effect to the baby.

4. Management Recommendations

Screening of pregnant women

All women considered to be at high risk for contracting hepatitis should be screened ante-natally, these include:

- Those who received a blood transfusion prior to 1990
- Intravenous drug users

- Sexual partner of a known case of HCV

The initial screening test is for HCV antibody. This is done locally with a turnaround time of approximately one week. Patients who are positive for HCV antibody will then need a HCV PCR test to assess the level of viraemia. This test is not processed locally and has a longer turnaround time.

Women who are HCV antibody positive but HCV PCR negative do not pose a transmission risk.

Management of at- risk neonate

At- risk neonates should be identified by a wide range of professionals including midwives, obstetricians and paediatricians and should be offered below:

Screening

Maternal HCV antibodies are transferred to the baby across the placenta and remain detectable for up to 18 months of age. For the above reason, testing for HCV PCR should **not** be performed at birth and should be delayed from 8 weeks of age onwards. Cord blood should never be used for testing as there is a risk of contamination by maternal blood.

Please inform parents and make a referral for outpatient HCV RNA to be performed in **8-12 weeks'** time and to book an outpatient appointment with Dr Balasubramaniam (Derby babies) or Dr Ahmed (Burton babies) prior to discharge.

Recommended testing and follow up of at- risk neonates is set out in the algorithm listed in Appendix 1.

Infants are only considered infected with Hepatitis C if HCV RNA is positive on two or more occasions and when they are above the age of 18 months.

Vaccination and Immunoglobulin

There is no licensed vaccine against Hepatitis C. Post exposure treatment with immunoglobulin is of no benefit in preventing HCV infection.

Neonates should receive routine Hepatitis B vaccine as per the universal vaccination programme at 8 weeks, 12 weeks and 16 weeks especially if they are born to HCV positive parents contracted from high risk behaviour (e.g. other than a contaminated blood transfusion).

Breast feeding

Although HCV RNA may be detected in colostrum and breast milk, breast feeding has not been shown to affect the transmission of Hepatitis C. Current recommendations are that women with HCV without HIV co- infection can be advised to breast feed as long as there are no obvious cracked/ bleeding from nipples.

Further information to be offered to parents

Families should be informed that HCV is spread through blood- to- blood contact. Although intra-familial transfer has not been demonstrated, household family members should not

share toothbrushes, razors etc. Families should also be reassured that HCV is not spread by casual contact such as hugging, sharing of food and drinks, eating utensils or sneezing/ coughing.

Treatment programmes for Hepatitis C are being researched and there has been an encouraging response to Interferon treatment in some cases.

Management of infants with initial positive HCV RNA

Most children with HCV infection are asymptomatic with occasional reported minor abnormalities such as hepatomegaly or mild non- specific symptoms such as anorexia, malaise, fever, dark urine, abdominal pain and jaundice (rare in first year of life).

Most perinatally infected infants will have intermittent or persistent abnormal liver enzymes (AST/ ALT) particularly in the first two years of life. ALT elevation does not correlate well with histological severity.

Children with confirmed HCV infection should be referred to paediatric hepatologist at Birmingham Children's Hospital for further assessment, antiviral treatment and continuous monitoring for disease progression and potential complications. They should be reviewed on a 6 monthly basis with checking of liver function test and viral status. Annual ultrasound and alpha- fetoprotein is recommended to facilitate early diagnosis of progression of liver disease or emergence of hepatocellular carcinoma.

Children with confirmed HCV infection should also be immunised against hepatitis A and B.

Note: For older children with suspected Hepatitis C infection, see appendix 2 for further management.

5. Monitoring Compliance

At least three yearly audit should be undertaken to monitor the level of compliance with the above standards. The audit will be identified as part of the Department of Paediatric Annual Audit Forward Plan and registered in accordance with the Trust Clinical Audit Policy.

The audit criteria will include:

- Number of children seen with presumed/confirmed perinatal HCV infection
- Clinical course of infants/ children with HCV RNA +ve
- Hepatitis A and B vaccination
- Adherence to the protocol

6. References (including any links to NICE Guidance etc.)

1) Health Protection Agency (2011) Vertical HCV transmission
2) Red book, Report of the committee on infectious diseases 2012
3) NICE (2008) Antenatal care routine care for the healthy pregnant women CG62
4) DoH (2009) The primary prevention of Hepatitis C among injecting drug users.

5) Thomas SL et al. A review of hepatitis C virus vertical transmission: risks of transmission to infants born to mothers with and without HCV viraemia or HIV infection. International journal of epidemiology. 1998; 27(1):108-117.
6) Bhola K Mcguire et al. Does avoidance of breast feeding reduce mother-to-infant transmission of hepatitis C virus infection? Arch dis child 2007;92:4 365-366
7) Davison SM, Mieli-Vergani G, Sira J and Kelly DA. Perinatal hepatitis C virus infection: diagnosis and management. Archives of Disease in Childhood 2006;91:781-785
8) Kelly D and Skidmore S. Hepatitis C-Z: recent advances. Arch Dis Child 2002;86:339- 343
9) Gibb DM, Neave PE, Tookey PA et al. Active surveillance of hepatitis C infection in the UK and Ireland. Arch Dis Child 2000;82:286-291
10) Abdel-Hady M and Hasan S. Hepatitis C Infection. Pediatrics and Child Health 2015;25(10):474-8.

7. Documentation Controls (these go at the end of the document but before any appendices)

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Version / Amendment History	Version	Date	Author	Reason
	V004	July 22	Dr Bala Subramaniam	Joint guideline required
Intended Recipients: Midwives, Neonatal staffs, obstetric team				
Training and Dissemination: Make the trainees aware of the guideline at induction				
Development of Guideline: **Job Title:** Consultant Paediatrician				
Consultation with: Midwives and Neonatal consultants				
Linked Documents: State the name(s) of any other relevant documents				
Keywords: Hepatitis C virus (HCV), intravenous drug use (IVDU)				
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Date of Upload			August 2025	
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Contact for Review			Dr Bala Subramaniam	

8. Appendices

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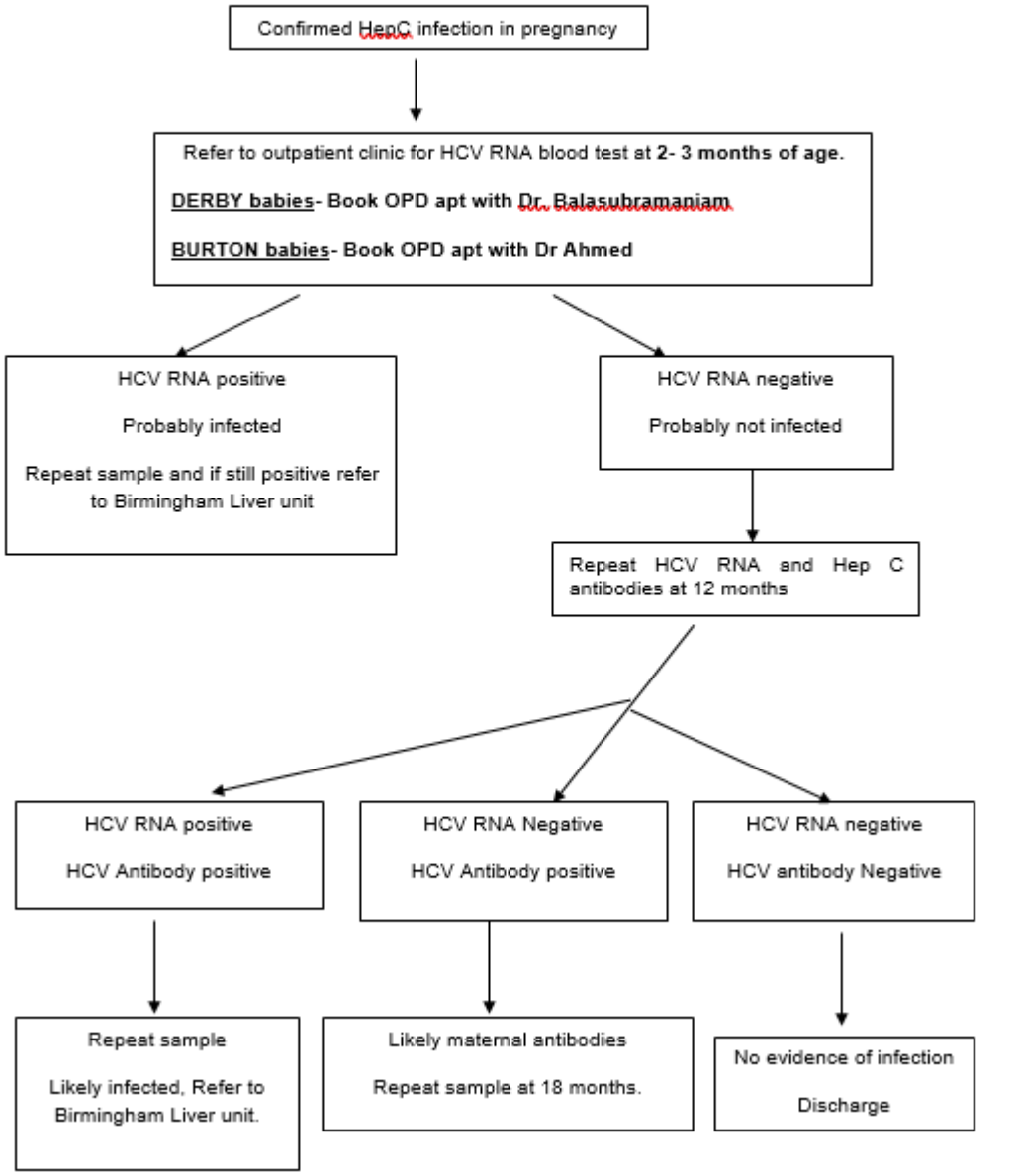
APPENDIX 1

Infants born to Mothers who are Hepatitis C Seropositive- Summary Clinical Neonatal Guideline



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Interpretation of hepatitis C virus (HCV) test results

Anti- HCV	HCV RNA	Interpretation
Negative	Negative	No infection
Positive	Positive	Acute or chronic infection
Negative	Positive	Early infection or chronic infection in an immunosuppressed host
Positive	Negative	Resolved infection or maternally transmitted antibodies or false positive antibody tests

2. Child referred for diagnosis at age 12 months or older