Decision making - Hepatitis C in Children

Testing

HCV

All children born to mothers with HCV (perinatal transmission risk of HCV ~5%)

HCV RNA test at or after 8 weeks of age[1]

HCV Ab test at 12–18 months is an alternative to HCV RNA test if infant follow up likely

HCV RNA test negative

HCV RNA test positive[3]

HCV Ab negative[2]

HCV Ab positive[3]

HCV antibody at or after 18 months to confirm not infected.

Refer for ongoing management to paediatric gastroenterologist or paediatric infectious diseases physician

Not infected

- Order HCV RNA and LFTs
- If abnormal LFTs or HCV RNA positive, refer to a paediatric gastroenterologist or paediatric infectious diseases physician.

Legend
Ab: Antibody
HCV: Hepatitis C virus
RNA: Ribonucleic acid (PCR test)
LFT: Liver Function Test

All children born to HCV-infected women should be tested for HCV infection. The siblings of children with vertically-acquired chronic HCV should be tested for HCV infection, if born from the same mother.

[1] Early testing with HCV RNA PCR from 2 months of age is recommended to enable identification and engagement with a paediatric hepatology or infectious disease service, particularly where there is a risk of loss to follow up before 18 months of age.

[2] Most uninfected infants are antibody negative by 12-18 months. If positive HCV antibody at 12-18 months perform a HCV RNA before considering them infected. Request reflexive testing wherever possible to minimise occasions of venepuncture. Where feasible, utilise less-invasive testing such as point-of-care finger-stick sampling of blood.

[3] Annual HCV PCR testing is recommended for HCV infected children, especially in the first 5 years of life given the reported rates of spontaneous viral clearance in these children.

ashm hepatitis australia GESA Gastroenterological Society of Australia ASID Australasian Society for Infectious Diseases AUSTRALASIAN HEPATOLOGY ASSOCIATION

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Decision making - Hepatitis C in Children

Prevention, monitoring, treatment

HCV

Natural History

- Perinatal transmission is the most common mode of HCV transmission for children. Risk of perinatal transmission in HIV-negative pregnant women is 5.8% and in HCV/HIV co-infected pregnant women 10.8%.
- 25% to 50% of infected infants spontaneously resolve HCV infection (loss of previously detectable HCV RNA) by 4 years of age.
- Slow rate of fibrosis progression among children, few established factors for disease progression.
- Development of advanced liver disease in children is infrequent until more than 30 years of infection.
- Children with comorbid disease—such as metabolic syndrome and other chronic diseases affecting the liver, obesity with nonalcoholic fatty liver disease and congenital heart disease with elevated right heart pressures—and those receiving hepatotoxic drugs should be monitored carefully for disease progression.

Transmission and Prevention

- The risk of perinatal transmission is not affected by mode of delivery, but increases with premature rupture of membranes and invasive fetal monitoring (see The Royal Australian and New Zealand College of Obstetricians and Gynaecologists - https://ranzcog.edu.au/).
- Breastmilk feeding has not been shown to increase the risk of HCV transmission, though avoidance of breastmilk feeding should be considered if the mother has cracked and bleeding nipples.
- The risk of sexual transmission of hepatitis C is considered very low except among HIV-infected men who have unprotected sex with men. Adolescents with HCV infection should be counseled that the risk of sexual transmission is low but barrier precautions are recommended for other reasons.

HCV Treatment

- Children and adolescents with chronic hepatitis C should be managed by a paediatric gastroenterologist or paediatric infectious diseases specialist with experience in this condition.
- Direct-acting antiviral (DAA) treatment with an approved regimen is recommended for all children and adolescents with HCV infection as they will benefit from antiviral therapy, regardless of disease severity.
- Treatment regimens are age and weight-based.
- Educate parents and/or children about medication adherence.

Monitoring and Medical Management

- Initial assessment to detect other causes of liver disease, assessment of disease severity, and detection of extrahepatic manifestations of HCV infection.
- Testing for coinfection with HBV (HBsAg, anti-HBc, anti-HBs), HIV (anti-HIV), and immunity to HAV (anti-HAV IgG), vaccinate nonimmune children.
- Disease severity assessment via routine laboratory testing and physical examination, monitoring synthetic function, noninvasive testing and imaging 6-12 monthly.
- Liver ultrasound if advanced liver disease suspected.
- Alpha-fetoprotein in children with advanced liver disease or cirrhosis.
- Annual PCR testing will identify those children who have successfully resolved their HCV infection. They can then be discharged from follow up as they are cured of HCV infection.
- Hepatotoxic drugs should be used with caution.
- Abstinence from alcohol use advised.
- Support to maintain a healthy body weight.

FIRST-LINE DAA TREATMENT REGIMENS FOR CHILDREN/ADOLESCENTS AVAILABLE IN AUSTRALIA FROM 2023

Regimen (total dose)	Genotype	Dosing	Indication	Treatment duration[1]
TGA approved and PBS listed				
Glecaprevir 200 mg/ Pibrentasvir 80 mg	All	2 tablets once daily with food	≥6 years to <12 years and weight ≥20 kg to <30 kg[2,3]	8 weeks
Glecaprevir 300 mg/ Pibrentasvir 120 mg	All	3 tablets once daily with food	≥12 years and weight ≥45kg	8 weeks
Sofosbuvir 400 mg / Velpatasvir 100 mg	All	1 tablet daily with or without food	≥12 years and weight ≥30kg	12 weeks
TGA approved, not PBS listed – a compassionate access program is available				
Glecaprevir 150 mg/ Pibrentasvir 60 mg	All	3 sachets once daily with food	≥3 years and <12 years; and weight ≥12 to <20 kg	8 weeks
Glecaprevir 200 mg/ Pibrentasvir 80 mg	All	4 sachets once daily with food	≥3 years and <12 years; and weight ≥20 to <30 kg	8 weeks
Glecaprevir 250 mg/ Pibrentasvir 100 mg	All	5 sachets once daily with food	≥3 years and <12 years; and weight ≥ 30 to <45 kg	8 weeks

[1] Treatment naïve without cirrhosis or with compensated cirrhosis; for other specific indications including treatment experienced, medication administration, dosage, and side effects, see detailed guidelines *HCV in Children: Australian Commentary on AASLD-IDSA Guidance*.

[2] [Jonas, 2021]

[3] For children between 3 and 6 years who can swallow tablets or children ≥6 years to <12 years and weight ≥30 kg to <45 kg, seek advice from a paediatric gastroenterologist or paediatric infectious diseases physician.

See detailed guidelines *HCV in Children: Australian Commentary on AASLD-IDSA Guidance* regarding medication, dosage, side effects and specific indications.

Parental advice

Hepatitis C is not transmitted by casual contact and, as such, children with HCV infection do not pose a risk to other children and can participate in school, sports, and athletic activities, and engage in all other regular childhood activities without restrictions. Parents should be informed that universal infection control precautions should be followed at school and in the home of children with HCV infection. They should also be made aware of their rights and responsibilities regarding the limited situations in which disclosure of a person/child's HCV+ve status is required by law (www.hepatitisaustralia.com/who-do-you-have-to-tell). Educate families and children about the risk and routes of HCV transmission, and the techniques for avoiding blood exposure, such as avoiding the sharing of toothbrushes, razors, and nail clippers, and the use of gloves and dilute bleach to clean up blood.

Any child or adolescent with proven or suspected cirrhosis and hepatitis C should be referred to a paediatric gastroenterologist for ongoing management. Children with cirrhosis should undergo hepatocellular carcinoma (HCC) surveillance and endoscopic surveillance for varices per standard recommendations.

CONTACT

HepLink Australia offers hepatitis information, support and treatment for anyone, anywhere in Australia.

Phone 1800 437 222 or visit **www.heplink.au**