CLINICAL PRACTICE GUIDELINE

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Hepatitis B and Pregnancy

This Clinical Practice Guideline has been prepared by the Infectious Diseases committee, reviewed by the Family Physician Advisory, Clinical Practice – Obstetrics and Guideline Management and Oversight Committees and approved by the Board of the Society of Obstetricians and Gynaecologists of Canada.

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Abstract

Objective: To review the epidemiology, natural history, evaluation, and treatment of hepatitis B virus (HBV) infection during pregnancy. This will aid obstetric care providers in counseling their patients regarding perinatal risks and management options available to pregnant women with hepatitis B.

Outcomes: Outcomes evaluated include thresholds for HBV anti-viral treatment for prevention of perinatal transmission and for invasive procedures during pregnancy for women with hepatitis B infection.

Evidence: Medline, EMBASE, and CINAHL were searched for articles in English on subjects related to HBV infection, pregnancy, and perinatal transmission from 1966 to March 2016. Results were restricted to systematic reviews, randomized controlled trials/controlled clinical trials, and observational studies. Other (unpublished) literature was identified through searching the websites of health technology assessment and health technology assessment-related agencies, clinical practice guideline collections, clinical trial registries, and national and international medical speciality societies.

Validation methods: The quality of the evidence is rated using the criteria described in the Report of the Canadian Task Force on Preventive Health Care (Table 1). Recommendations for practice are ranked according to the method described in this Report.

Guideline update: The guideline will be reviewed 5 years after publication to decide if an update is required. However, if important new evidence is published prior to the 5-year cycle, the review process may be accelerated for a more rapid update of some recommendations.

Table 1. Key to evidence statements and grading of recommendations, using the ranking of the Canadian Task Force on Preventive Health Care

Quality of evidence assessment[a]	Classification of recommendations[b]
I: Evidence obtained from at least one properly randomized controlled trial	A. There is good evidence to recommend the clinical preventive action
II-1: Evidence from well-designed controlled trials without randomization	B. There is fair evidence to recommend the clinical preventive action
II-2: Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group	C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in the category	D. There is fair evidence to recommend against the clinical preventive action
III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees	E. There is good evidence to recommend against the clinical preventive action
	L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

[a]The quality of evidence reported in these guidelines has been adapted from The Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

[b]Recommendations included in these guidelines have been adapted from the classification of recommendations criteria described in The Canadian Task Force on Preventive Health Care.

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Recommendations

1. Pregnant women should be offered screening for hepatitis B virus infection in early pregnancy by determination of their hepatitis B surface antigen. (I-A)
2. If status of hepatitis B surface antigen is unknown at time of maternal admission to hospital, this should be done immediately to inform infant management.[1,2] (III-A)
3. Hepatitis B surface antigen-positive pregnant women require testing for hepatitis B envelope antigen, hepatitis B virus (HBV) DNA level, alanine aminotransferase (I-A) and ultrasound of the liver (III-B) during pregnancy for the purposes of maternal health and perinatal HBV transmission risk stratification. A specialist referral is recommended. (III-L)
4. Hepatitis B surface antigen-positive pregnant women should receive counseling on prevention of hepatitis B virus transmission to sexual partners and household contacts. (II-2A)
5. If hepatitis B surface antigen is negative but there is an ongoing risk of infection (e.g., born in country where hepatitis B virus is endemic, illicit drug use, multiple sexual partners, multiple transfusions, immunosuppression, hepatitis B positive partner, health care workers, incarceration, or abnormal alanine aminotransferase), screening should be repeated in late pregnancy.[3] (II-3A)
6. Women at high risk for acquiring hepatitis B infection who are hepatitis B surface antigen-negative and have not been vaccinated for hepatitis B must be counseled on risk factor modification and should be offered recombinant hepatitis B vaccine series: pregnancy is not a contraindication for immunization to hepatitis B virus. (II-2A)
7. Encourage non-invasive screening techniques for aneuploidy prior to invasive testing for women who are hepatitis B surface antigen-positive and counsel women that risk of transmission in utero increases if maternal hepatitis B virus DNA is $>$ 200 000 IU/mL ($> 10^6$ copies/mL) at the time of amniocentesis. (II-2B)
8. If possible, avoid intrapartum invasive procedures (e.g., fetal electrocardiogram, scalp lactate) that may increase the infant's risk of percutaneous hepatitis B virus exposure. (III-L)
9. Cesarean section is not recommended for the sole purpose of reducing the risk of perinatal transmission of hepatitis B virus. (II-2C)
10. Vaccinate the neonate for hepatitis B and give hepatitis B immunoglobulin within the first 12 hours of life to all neonates born to women who are hepatitis B surface antigen-positive. (I-A)
11. Breastfeeding does not pose an additional risk of hepatitis B virus infection, even without neonatal vaccination, hence mothers with chronic hepatitis B infection who wish to breastfeed should be encouraged to do so. (II-2A)
12. Encourage families to complete the infant immunization series for hepatitis B virus according to local infant vaccination schedule and obtain serological confirmation of protection after completion of hepatitis B vaccination series, no sooner than 9 to 12 months of age. (I-A)
13. In collaboration with an adult infectious diseases/gastroenterology or hepatology specialist, consider antiviral treatment for viral suppression for prevention of perinatal transmission in women with hepatitis B DNA viral loads level $>$ 200 000 IU/mL ($> 10^6$ copies/mL), starting at 28 to 32 weeks' GA and continuing until delivery. (II-B)

ABBREVIATIONS

ALT	alanine aminotransferase
anti-HBe	hepatitis B envelope antibody
anti-HBs	hepatitis B surface antibody
CHB	chronic hepatitis B
CI	confidence interval
DNA	deoxyribonucleic acid
FDA	Food and Drug Administration
GA	gestational age
HAV	hepatitis A virus
HBeAg	hepatitis B envelope antigen
HBIG	hepatitis B immunoglobulin
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HCC	hepatocellular carcinoma
HIV	human immunodeficiency virus
PEP	post-exposure prophylaxis