Hepatitis B and Pregnancy

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• Gilead, Abbvie, Bausch-Advisory role
• Gilead – Research Support
The word women may be used throughout the presentation to align with the language of the studies represented in this talk; however, we acknowledge that not all pregnant people identify as cis women and understand the importance of using gender-inclusive language in order to support all of our patients.
Learning Objectives

By the end of this presentation, participants will be able to understand:

• Diagnosis and epidemiology of hepatitis B virus (HBV)
• Effect of pregnancy on HBV and HBV on pregnancy outcomes
• Gestational parent-to-child transmission
• Screening recommendations during pregnancy
• Role of antiviral therapy in pregnancy
• Prevention of gestational parent-to-child transmission
What is Hepatitis B Virus (HBV)?

- Double stranded DNA virus
- Infects the liver, circulates in the blood, in other body fluids
- Parenteral and mucosal transmission
- Risk factors:
  - birth to an infected mother
  - sexual contact
  - injection drug use
- Other risks: exposed household items, needle-sticks, sharps
- Not spread by food, water, sharing utensils, kissing, coughing, sneezing or breastfeeding
## HBV Test Interpretation

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Abbreviation</th>
<th>Marker for</th>
</tr>
</thead>
<tbody>
<tr>
<td>hepatitis B surface antigen</td>
<td>HBsAg</td>
<td>acute or chronic infection</td>
</tr>
<tr>
<td>hepatitis B surface antibody</td>
<td>Anti-HBs</td>
<td>immune response after infection or vaccination (&gt;=10 mIU/mL)</td>
</tr>
<tr>
<td>hepatitis B e antigen</td>
<td>HBeAg</td>
<td>presence of viral replication and infectivity</td>
</tr>
<tr>
<td>hepatitis B virus DNA</td>
<td>HBV DNA</td>
<td>viral load: presence and level of viral replication</td>
</tr>
<tr>
<td>hepatitis B core antibody</td>
<td>Total anti-HBc</td>
<td>past or current hepatitis B infection</td>
</tr>
</tbody>
</table>
Chronic HBV Infection

• Defined by HBsAg + > 6 months
• Infectious but often asymptomatic
• No cure is available:
  – HBV viral DNA integrates into host DNA for life
  – A functional cure is possible with proper treatment
  – HBsAg clearance is the goal
  – Reactivation is still possible
• Chronic active hepatitis develops in more than 25% of people living with infection and can result in cirrhosis
• Persons living with HBV have a 25% risk of premature death related to the complications of cirrhosis and liver cancer (hepatocellular carcinoma)
Epidemiology
• 30% of the world population with serologic evidence of HBV exposure
• 350 million people living with chronic HBV in the world
• 80% of the global population lives in an intermediate or high-prevalence area

Hepatitis B Prevalence
- High: ≥8%
- High moderate: 5-7%
- Low moderate: 2-4%
- Low: <2%
- No data

Image source: Schweitzer et al, 2015
HBV in the United States

- NHANES data
  - 850,000 Americans are living with chronic HBV infection
  - Survey data may undersample/underestimate immigrant populations
  - True number closer to 2.2 million
  - Up to 95% immigrant patient population

Incidence of Chronic HBV, U.S.-Acquired vs. Estimated Imported, United States, 1980-2008

Data sources: CDC, WHO, DHS

New HBV vaccine recommendations!

November 03, 2021

ACIP recommends universal hepatitis B vaccination for adults aged 19 to 59 years

The CDC’s Advisory Committee on Immunization Practices voted unanimously, 15-0, on Wednesday to recommend hepatitis B vaccination for all adults aged 19 to 59 years.

The recommendation says adults in this age group — plus adults aged 60 years or older with risk factors — “should” be vaccinated against HBV. It says adults aged 60 years or older who do not have known risk factors for HBV infection “may” receive an HBV vaccine.
Recent Acute HBV on the Rise in the US?

- NNDSS reported 114% increase in HBV in Kentucky, Tennessee, Virginia
- Predominantly among whites, who reported injection drug use, age 30-39
- Likely native-born adults who were not fully vaccinated during childhood

HBV Among Women of Childbearing Age in the United States

- Quest laboratory data, 2011-2017
  - >8 million women age 15-44 with HBV testing
  - Assessed for rates of chronic, acute, and exposure to HBV from 2011-2017

Case Study
Case Study

• 28 y/o pregnant person who presents for initial prenatal visit
  – Originally from Mali
  – Doing well other than some mild morning sickness
  – Found to be HBsAg positive in prenatal screen

• Question:
  – Who do we screen for HBV during pregnancy?

• Next Steps:
  – What other HBV-related tests would you order for her?
HBV Screening During Pregnancy
Screening for HBV during pregnancy

- **1984** – High risk screening recommended – Ineffective
- **1991** – Universal screening recommended
- **1994-2008** - National Perinatal HBV prevention program → From 19,000 to > 25,000 infants born to HBsAg + mothers
- **1998 – 2011** - Cross-sectional analysis of deliveries using Nationwide Inpatient Sample: HBV rate in pregnant women increased from 57.8 in 1998 to 105.0/ 100,000 deliveries in 2011 (annual increase of 5.5%)
HBV Screening During Pregnancy: Flowchart for Prenatal Providers

Test all patients in every pregnancy for HBsAg (in first trimester, if possible)

Maternal HBsAg results

• Provide HBsAg test results to hospital where delivery planned
• Attach alert to women’s medical record that newborn needs HBV vaccine and HBIG
• Educate patient on importance of infant and contact screening and vaccination
• Refer patient for HBV medical evaluation

HBV risk factors:
• ≥2 sex partners
• STD
• Injection drug use
• HBsAg+ partner
• Clinical hepatitis

Yes

• Start HBV vaccine series
• Retest for HBsAg prior to delivery

No

Maternal HBsAg results

• Provide HBsAg test report to hospital where delivery planned
• Educate pregnant women on birth dose

See full flow chart at https://www.cdc.gov/hepatitis/HBV/PDFs/PerinatalAlgorithm-Prenatal.pdf
28 y/o pregnant person with positive HbsAg
- You order the following additional labs:
  - HBV DNA 3000 IU/mL, ALT 14, HBeAg negative, HBeAb positive
  - Expresses concern about transmission of HBV to her baby

Key questions:
- What is the impact of HBV on pregnancy outcomes? Pregnancy on HBV?
- What is the risk of HBV gestational parent-to-child transmission?
- What measures will be taken to prevent transmission and how can you communicate this to her?
- Should she be started on antiviral therapy?
Impact of pregnancy on HBV outcomes
Effect of HBV on Pregnancy Outcomes

• Pre-term birth
  – aRR 1.26 (95% CI 1.18-1.34) compared to non-HBV women¹

• Gestational Diabetes
  – In women with positive HBeAg – RR 1.434 (95% CI 1.00-1.56)²

• Low birth weight
  – RR 1.258 (95% CI, 1.053-1.505)²

• Infant HIV infection in co-infected mothers³

Effect of Pregnancy on HBV: the Issue of HBV Flares

- Immunologic changes during pregnancy can predispose to HBV flares, especially in setting of antiviral therapy discontinuation.
Prevalence of HBV Flares in Pregnancy

**TABLE 1. STUDIES EVALUATING PREGNANCY-ASSOCIATED HEPATITIS B FLARES**

<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Pregnancies (n)</th>
<th>ALT Flare Definition¹</th>
<th>Prevalence of Flare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ter Borg et al.²¹ (Journal of Viral Hepatitis, 2008)</td>
<td>Netherlands</td>
<td>38</td>
<td>3x baseline</td>
<td>45% postpartum</td>
</tr>
</tbody>
</table>
| Nguyen et al.¹⁷ (Alimentary Pharmacology & Therapeutics, 2014) | Australia     | 101 pregnancies:  
44 early AVT cessation  
43 late AVT cessation  
14 untreated women | 5x ULN | Postpartum flares:  
Early AVT cessation: 50%  
Late AVT cessation: 40%  
Untreated women: 29% |
| Giles et al.²² (Gut, 2015)                 | Australia     | 126             | 2x ULN                | 25% postpartum                          |
| Chang et al.²³ (American Journal of Gastroenterology, 2016) | United States | 113             | 5x ULN or 3x baseline | 6% during pregnancy; 10% postpartum     |
| Kushner et al.⁴ (Liver International, 2017) | United States | 310             | 2x ULN                | 14% during pregnancy; 16% postpartum    |
| Liu et al.²⁴ (Clinical Gastroenterology & Hepatology, 2017) | China         | 1097            | 2x ULN                | First trimester: 11.9%  
At delivery: 2.1%  
1 month postpartum: 9.8% |

- Flares mostly subclinical; few cases with hepatic decompensation

Gestational Parent-to-Child Transmission of HBV
HBV-infected gestational parents can transmit HBV to their infants
- Acute HBV in 3rd trimester - 50%
- Chronic HBV
  - Mother HBeAg positive – 90%
  - Mother HbeAg negative – 5-15%

Timing of transmission
- Transplacental – infrequent
- Mostly at or around the time of birth: during labor through contact with blood, vaginal secretions.
Gestational Parent-to-Child Transmission of HBV

- Perinatal transmission accounts for 50% of global burden of chronic HBV
- 90% of infants with mother-to-child transmission (MTCT) develop chronic HBV
  - 15-25% infants have premature death from liver failure or HCC
- Administration of HBV vaccine and HBV immune globulin (HBIG) to infant is 85-95% effective in preventing MTCT

Zou et al. J Viral Hep 2012.
Chronic infection occurs among:

- **80%–90%** of persons infected during infancy
- **30%** of persons infected before age 6 years
- **<1%–12%** of persons infected as an older child or adult

Prevention of Gestational Parent-to-Child Transmission of HBV
Perinatal HBV Prevention: Maternal and Infant Pathways

**Maternal Pathway**
- Prenatal Hepatitis B Screening
- Health Information Transfer to Birthing Facility
- Referral to Perinatal Hepatitis B Prevention Program
- Hepatitis B Evaluation & Possible Treatment (lifelong)

**Infant Pathway**
- Post Exposure Prophylaxis
- Health Information Transfer to Pediatrician
- Vaccination Completion
- Post-Vaccination Serologic Testing

**Prenatal Period**
- 1 month
- 6 months
- 8 months

**Perinatal Period**
- Within 12 hours of birth

**Postnatal Period**
- 1 month
- 6 months
- 9 months
- 12 months
Hep B Post-Exposure Prophylaxis (PEP) for High Risk Infants*

- HepB 1\textsuperscript{st} dose and HBIG (within 12 hours of birth)
  - Administered at different injection sites (e.g., separate limbs)
- HepB 2\textsuperscript{nd} dose vaccine at 1-2 months
  - Combination vaccine can be given at $\geq 6$ wks of age
  - (Pediarix – 2, 4, 6)
    - $> 3$ doses of Hep B containing vaccine is permissible
- HepB 3\textsuperscript{rd} dose at 24 wks at 6 months (168 days) – not earlier
- If birthweight $< 2000$ grams, do not count HepB 1\textsuperscript{st} dose as part of series
  - Give 3 additional doses with single-antigen vaccine at 1, 2-3, and 6 months or combination vaccine at 2, 4, and 6 months

*Infants born to Hep B+ mothers
Preventing Perinatal HBV Transmission at Delivery: Patient HBsAg Test Results Unavailable

Maternal HBsAg status unknown at infant’s birth

Yes
Administer first dose of HBV vaccine and HBIG within 12 hours of birth or asap

No
Administer first dose of HBV vaccine within 12 hours of birth or asap

Baby weighs < 2000g

Yes
Administer another HBV vaccine one month after birth

No
Follow recommended HBV vaccination schedule

Maternal HBsAg results

Positive

Follow recommended HBV vaccination schedule

Negative

Administer HBIG as soon as possible (no later than 7 days)

Once results available

Maternal HBsAg results

Positive

Follow recommended HBV vaccination schedule

Negative

Administer another HBV vaccine one month after birth

Maternal HBV Antiviral Therapy During Pregnancy
Why Use Antiviral Therapy During Pregnancy?

• If women meet criteria for HBV treatment otherwise (to prevent advanced liver disease)
• But also to prevent MTCT; high viral load during pregnancy can increase MTCT despite HBIG and HBV vaccine at birth
• 256 mother-child pairs in China\(^1\)
  - High maternal HBV DNA – OR 2.44 (95% CI 1.13-5.29) for MTCT

Zou et al (2011): 869 mother-infant pairs\(^2\)

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\(^1\)Liu, et al. Internal Medicine 2015.
Tenofovir to Prevent HBV Transmission in Mothers with High Viral Load

Pan et al. prospective trial, 2016:

- 200 mothers HBeAg positive; HBV DNA > 200,000 IU/mL
- Randomly assigned to receive 300mg TDF form 30-32 weeks gestation until PP week 4

Guidelines for Antiviral Therapy During Pregnancy

“The AASLD suggests antiviral therapy to reduce the risk of perinatal transmission of hepatitis B in HBsAg-positive pregnant women with an HBV DNA level > 200,000 IU/mL.”

“In pregnant women with HBV infection and viral load > 6-8 log 10 copies/mL, HBV-targeted maternal antiviral therapy should be considered for the purpose of decreasing the risk of intrauterine fetal infection.”

Maternal antiviral therapy started at 28–32 weeks’ gestation, as an adjunct to HepB vaccine and HBIG administered to the infant shortly after delivery, has been associated with significantly reduced rates of perinatal HBV transmission.

# HBV Antiviral Therapy Options

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<th>Treatment</th>
<th>Preferred</th>
<th>Notes</th>
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<td>Tenofovir Disoproxil Fumarate</td>
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<td>PegIFN</td>
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<td>Less safe in pts with cirrhosis</td>
</tr>
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<td>No</td>
<td>Low genetic barrier to resistance</td>
</tr>
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* Unless previous history of Lamivudine resistance
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Tenofovir Alafenamide for Pregnant Chinese Women With Active Chronic Hepatitis B: A Multicenter Prospective Study

- 103 pregnant women on TAF; 104 on TDF; mean 2 years of treatment

Table 2. Characteristics of the Infants (Fetus) at Birth

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>TAF group (n = 103)</th>
<th>TDF group (n = 104)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>51 (50)</td>
<td>50 (48.1)</td>
<td>.783</td>
</tr>
<tr>
<td>TAF or TDF exposed duration before birth, wk</td>
<td>32.1 ± 9.4</td>
<td>33.8 ± 8.3</td>
<td>.250</td>
</tr>
<tr>
<td>Gestational age, wk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;37</td>
<td>3 (2.9)</td>
<td>4 (3.8)</td>
<td>1.000</td>
</tr>
<tr>
<td>≥41</td>
<td>8 (7.8)</td>
<td>8 (7.7)</td>
<td>.968</td>
</tr>
<tr>
<td>Delivery by cesarean section</td>
<td>35 (34.3)</td>
<td>39 (37.5)</td>
<td>.634</td>
</tr>
<tr>
<td>Weight, kg</td>
<td>3.4 ± 0.3</td>
<td>3.4 ± 0.3</td>
<td>.283</td>
</tr>
<tr>
<td>Height, cm</td>
<td>49.9 ± 1.4</td>
<td>49.7 ± 1.4</td>
<td>.409</td>
</tr>
<tr>
<td>Head circumference, cm</td>
<td>34.5 ± 1.0</td>
<td>34.5 ± 0.9</td>
<td>.700</td>
</tr>
<tr>
<td>Apgar score at 1 minute</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;8</td>
<td>9.7 ± 0.5</td>
<td>9.5 ± 0.5</td>
<td>.031</td>
</tr>
<tr>
<td>≥8</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>—</td>
</tr>
<tr>
<td>Congenital defects or malformations</td>
<td>1 (1.0)</td>
<td>0 (0)</td>
<td>.498</td>
</tr>
<tr>
<td>Immunophylaxis administration</td>
<td>102 (100)</td>
<td>104 (100)</td>
<td>—</td>
</tr>
<tr>
<td>Time from birth to administration of the first doses of immunophylaxis, hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤1</td>
<td>2.9 ± 2.7</td>
<td>3.0 ± 2.9</td>
<td>.957</td>
</tr>
<tr>
<td>1–6</td>
<td>22 (21.6)</td>
<td>23 (22.1)</td>
<td>.924</td>
</tr>
<tr>
<td>7–11</td>
<td>73 (71.6)</td>
<td>73 (70.2)</td>
<td>.828</td>
</tr>
<tr>
<td>13–16</td>
<td>5 (4.9)</td>
<td>4 (3.8)</td>
<td>.976</td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>71 (69.6)</td>
<td>74 (71.2)</td>
<td>.808</td>
</tr>
</tbody>
</table>

“TAF administered throughout or beginning in early pregnancy is generally safe and effective for pregnant women with active CHB and their infants”

HBV Drugs in Development

Entry Inhibitors
• Myrcludex
• Ezetimibe
• Cyclosporine

Inhibit protein translation by siRNA
• Arbutus

cccDNA silencing
• CRISPR/Cas9
• HDAC inhibitors

HBsAG release inhibitor
• NAP

Polymerase inhibitors
• Nucelotide analogues
• Non-Nuc analogues
• RNAseH Inhibitors

Core protein allosteric modulators

Immunomodulators
• TLR 7 and 9 agonists
• RIG-1 agonists
• T-cell vaccines
• PD-1/PD-L1 blockade

Slide courtesy of Marc Ghany
1. Qualifies for HBV treatment prior to pregnancy?
2. HBV DNA > 200,000 IU/mL?
3. Monitor for HBV flare

CDC Strategy to eliminate HBV transmission in the United States

• Screening of all pregnant people for HBsAg

• HBV DNA testing for HBsAg-positive pregnant people, with suggestion of maternal antiviral therapy to reduce perinatal transmission when HBV DNA is >200,000 IU/mL

• Prophylaxis (HepB vaccine and HBIG) for infants born to HBsAg-positive† mothers

• Universal vaccination of all infants beginning at birth, as a safeguard for infants born to HBV-infected mothers not identified prenatally

• Routine vaccination of previously unvaccinated children aged <19 years

• Vaccination of adults at risk for HBV infection, including those requesting protection from HBV without acknowledgment of a specific risk factor
HBV Screening and Prevention Errors

- **Wrong tests ordered or interpreted**
  - Providers order either an HBsAg test or an anti-HBs test, but not both

- **Perinatal HBV prevention**
  - Mother is HBsAg negative and infant does not receive prophylaxis
    - Infant exposed to HBV infection postnatally from another caregiver
  - Mother’s HBsAg status is unknown
    - Test result received only after discharge
  - Pregnant person’s positive HBsAg test result is not reported to nursery
    - Nursery does not give HBIG protection at birth

Source: [New York State Department of Health, Immunization Action Coalition](http://www.immunize.org)
New York State Reporting Requirements

- New York State public health law requires universal reporting of the maternal HBsAg test results on the infant's Newborn Metabolic Screening requisition form:
  - Accurate and complete recording of the mother's status is critical for public health surveillance and case management. When reporting maternal HBsAg positive results directly to the health department, also report the infant's information: Time of birth, time of administration for HBIG and HepB-1, birth weight and gestational age
  - Reporting Methods: by electronic reporting (NYCMED) Reporting Central or fax the IMM5 form.
NYC Health Department
Perinatal HBV Prevention Program

- Utilize the NYC Health Department Perinatal HBV Prevention Program to support case management of contact screening and vaccination: 
  https://www1.nyc.gov/site/doh/providers/health-topics/hepatitis-b-and-pregnancy.page

- Report all positive HBsAg test results to DOHMH:
  - Reporting instructions: https://www1.nyc.gov/site/doh/providers/health-topics/hepatitis-b-and-pregnancy.page
Peripartum HBV Care
Gaps in Postpartum HBV Care

- Only 21% of mothers with a positive HBsAg test during pregnancy receive peripartum HBV specialist follow up.\(^1\)
  - Even with HBV specialist follow-up, only 70% had HBV DNA and ALT checked within 1 year postpartum.

- Postpartum HBV care is essential for:\(^2\)
  - Maternal health – prevention of complications including cirrhosis and HCC
  - Prevention of HBV transmission to children and close contacts – through screening and immunization.

- Patient navigation programs may help\(^3\)
  - Hep B Moms Project at NYC DOHMH – Moms with patient navigation 1.66 (95% CI 1.39, 1.98) more likely to have appropriate HBV follow up 6 months post delivery

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 CDC Screening and Referral Algorithm for HBV Infection Among Pregnant People

1. Notify and educate HBsAg-positive people about their status

2. Order HBV DNA and refer to PCP with HBV management experience or specialist during pregnancy

3. Confirm that pregnant woman attended her appointment with the PCP/specialist

https://www.cdc.gov/hepatitis/hbv/pdfs/PrenatalHBsAgTesting.pdf
Breastfeeding is not contraindicated

Antivirals are minimally excreted in breast milk and are unlikely to cause significant toxicity

The unknown risk of low-level exposure to the infant should be discussed with mothers

There are insufficient long-term safety data in infants born to mothers who took antiviral drugs during pregnancy and breastfeeding
Monitoring of Patients Who Have Discontinued HBV Therapy

- ALT and HBV-DNA testing every 3-6 months
- Abdominal sonogram + AFP every 6 months
- Restart HBV therapy according to accepted treatment parameters

- No further monitoring if HBSAg seroconversion and no evidence of cirrhosis
### AASLD Guidelines: HCC Screening in Non-Cirrhotic HBV

- HBV carriers at high risk for HCC, include:
  - HBsAg positive patients with cirrhosis
  - Asian or Black men over 40 years and Asian women over 50 years of age
  - Family history of HCC- first degree
  - Africans over 20 years of age
  - HDV infection
  - Any carrier over 40 years with persistent or intermittent ALT elevation and/or high HBV DNA level >2,000 IU/mL

- Screening is with ultrasound examination every 6 months.

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HBV Supportive Services
Challenges Experienced by Patients with HBV Infection

- Many prenatal patients with HBV infection face barriers to accessing HBV care - low income, un/underinsured, low English proficiency, immigration issues, stigma
  - In NYC, very high poverty neighborhoods have close to three times the rate of newly reported chronic HBV infection than low poverty neighborhoods

- Immigration issues
  - People at different stages of immigration to the U.S. avoid using health care, health care insurance or other government services
  - Medical interpretation services often do not meet language needs → continued low health literacy and difficulty navigating health care system

- Patients may often need additional assistance
  - Appreciating the role of medications and routine monitoring for health maintenance and disease prevention
  - Understanding medication safety
  - Making appointments

Patient Counseling Messages to Promote Treatment Adherence

To promote HBV treatment adherence, educate patients on:

• Role of HBV treatment for prevention of mother-to-child transmission (PMTCT) of HBV
• Medication safety for patient and infant, including during pregnancy and breastfeeding
• Rationale for switching medications during/after pregnancy and potential side effects
• Timeline for treatment endpoint if treatment is prescribed only for PMTCT
HBV Treatment Access

- Uninsured or underinsured patients may not be able to afford costs of specialty care, including co-payment and co-insurance.
- Uninsured or underinsured patients may benefit from HBV patient assistance programs: [https://www.hepb.org/treatment-and-management/treatment/patient-assistance-programs-in-the-u-s/](https://www.hepb.org/treatment-and-management/treatment/patient-assistance-programs-in-the-u-s/)
- HBV patient navigators can help uninsured or underinsured patients access treatment.
Case Study

• Review case study
  – 28 y/o pregnant person at 24 weeks gestation with HBV DNA 3000, ALT 14, HBeAg negative, HBeAb positive
  – Concerned about transmission of HBV to her baby

• Describe next steps for this patient
  – Monitor HBV DNA, hepatic function panel, HBeAg/HBeAb
  – Does NOT meet criteria for treatment at this time, but counsel her that this may change and she requires ongoing monitoring.
  – Monitor liver tests and HBV DNA during pregnancy and in the first 3-6 months postpartum to monitor for flare
  – If meets criteria for antiviral therapy, initiate antiviral therapy
  – Baby to receive HBIG and HBV vaccine series
Review of Key Concepts

• Although the US is considered a low prevalence HBV country, the majority of HBV is in immigrants, and also may be on the rise due to the opioid epidemic

• Pregnancy provides the opportunity to diagnose and initiate treatment

• MTCT is high without treatment; HBIG and HBV vaccine and antiviral therapy in high viral load individuals prevents infection

• Tenofovir Disoproxil Fumarate is the drug of choice for treatment of HBV in pregnancy – many new drugs in development

• Postpartum follow up and linkage to care is critical!
Additional Resources: Perinatal HBV Screening and Treatment

- HBV Screening and Referral Algorithm for Pregnant Women: https://www.cdc.gov/hepatitis/hbv/pdfs/PrenatalHBsAgTesting.pdf
- HBV Primary Care Workgroup recommendations for HBV management by primary care provider: https://www.hepatitisb.uw.edu/page/primary-care-workgroup/guidance
- Stanford University Asian Liver Center Hep B Moms: https://www.hepbmoms.org/
  Includes:
  - 2020 Physician’s Guide to Hepatitis B
  - Patient education content in English, Chinese, Korean, Spanish and Vietnamese
- Hepatitis B Online: https://www.hepatitisb.uw.edu/go/prevention-hbv/preventing-perinatal-transmission-hbv/core-concept/all#management-women-chronic-hbv-pregnancy
Additional Resources: Perinatal HBV Prevention


- CDC Perinatal HBV Prevention Resources: [https://www.cdc.gov/hepatitis/hbv/perinatalxmtn.htm](https://www.cdc.gov/hepatitis/hbv/perinatalxmtn.htm)
  Includes:
  - Interpretation of HBV serologic test results
  - Policies and procedures for prenatal care and delivery hospitals
  - Post-vaccination serologic testing panels
  - Patient education resources (in multiple languages)

- Stanford University Asian Liver Center Hep B Moms: [https://www.hepbmoms.org/](https://www.hepbmoms.org/)

- Hepatitis B Online: [https://www.hepatitisb.uw.edu/go/prevention-hbv/preventing-perinatal-transmission-hbv/core-concept/all](https://www.hepatitisb.uw.edu/go/prevention-hbv/preventing-perinatal-transmission-hbv/core-concept/all)

- Immunization Action Coalition: [https://www.immunize.org/protect-newborns](https://www.immunize.org/protect-newborns)
- **Check Hep B Patient Navigation Program**
  - Free or low cost Hep B patient navigation services at 8 organizations in NYC. Patient navigators assist patients with complete testing, linkage to care, support through a full medical evaluation and treatment if recommended: [https://hepfree.nyc/check-hep-b-patient-navigation-program/](https://hepfree.nyc/check-hep-b-patient-navigation-program/)

- **Linkage to Affordable Care Support**
  - Health Department HBV testing and care services listing: [www.nyc.gov/health/hepb](http://www.nyc.gov/health/hepb)
  - Health Care Access Specialist Hep@health.nyc.gov

- **Order HBV Patient Education Materials:** Hep@health.nyc.gov

- **NYC Hep B Coalition:** [www.HepFree.NYC](http://www.HepFree.NYC)

- **National Task Force on Hepatitis B** Focus on API Americans: [www.hepbtaskforce.org](http://www.hepbtaskforce.org)
Contact Us

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