Hepatitis B: The Overlooked Problem

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Hepatitis B

- Hepatic viral disease caused Hepadnaviridae family.
- Transmitted via contact with bodily fluids (blood, semen/vaginal).
- Worldwide healthcare problem especially in developing countries, with 2 billion infected with HBV and >350 million with chronic infections.
- HBV is the #1 worldwide cause of chronic hepatitis, cirrhosis and hepatocellular cancer.
- In USA, between 1.25 million and 2 million individuals with chronic HBV.
- As of 2014, MDH reports 22,967 people living in MN with chronic HBV with 84% in the twin cities metro.
Prevalence

MAP 3-4. PREVALENCE OF CHRONIC HEPATITIS B VIRUS INFECTION AMONG ADULTS

Groups at risk

- Persons with multiple sex partners or STI
- Men who have sex with men
- IV drug users
- Infants born to HBV infected mothers
- Immigrants from HBV endemic countries (>2% prevalence)
- Health care workers and public safety workers
Screening Guidelines

- CDC guidelines:
  - All persons born in geographic region with an HBV prevalence >2%
  - All US born person who were unvaccinated as infants and with parents from high HBV endemic regions (>8%)
  - Individuals with parenteral risk factors
- Screening tools:
  - HBsAg, total anti-HBc and anti-HBs
  - If an at risk patient is screened and is susceptible then patient should receive the 3 dose HBV vaccination.
Acute vs Chronic Infection

- Acute Infection has 3 outcomes:
  - Patient clears infection and achieves lifelong immunity (~60%).
  - Patient progresses to chronic infection (~10%).
  - Patient develops End Stage Liver Disease (cirrhosis, liver failure or hepatocellular carcinoma ~15% of chronically infected).
- The younger the age of infection (<5 years of age), the greater the risk of chronicity.

<table>
<thead>
<tr>
<th>Tests</th>
<th>Interpretation</th>
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<tbody>
<tr>
<td>HBsAg (-) Total anti-HBc (-) anti-HBs (-)</td>
<td>Susceptible</td>
</tr>
<tr>
<td>HBsAg (-) Total anti-HBc (+) anti-HBs (+)</td>
<td>Immune due to natural infection</td>
</tr>
<tr>
<td>HBsAg (-) Total anti-HBc (-) anti-HBs (+)</td>
<td>Immune due to Hepatitis B vaccination</td>
</tr>
<tr>
<td>HBsAg (+) Total anti-HBc (+) IgM anti-HBc (+) anti-HB (-)</td>
<td>Acutely infected</td>
</tr>
<tr>
<td>HBsAg (+) Total anti-HBc (+) IgM anti-HBc (-) anti-HBs (+)</td>
<td>Chronically infected</td>
</tr>
</tbody>
</table>
| HBsAg (-) Total anti-HBc (+) anti-HBs (-) | Interpretation unclear; four possibilities:
  1. Resolved infection (most common)
  2. False-positive anti-HBc, thus susceptible
  3. "Low level" chronic infection
  4. Resolving acute infection |
Chronic Management

• Chronic phase management is to prevent cirrhosis, liver failure and cancer by reducing HBV viral load and the loss of HBe Ag while improving liver enzyme levels.
  
  • Every 6-12 months provider to get liver function test ALT, tumor marker alpha-fetoprotein (AFP) and liver ultrasound or other imaging.

  • Treatment depends on amount of inflammation/scarring (HBe Ag status, HBV viral load, ALT levels and liver biopsy)

  • Treatment regime include INF-a and antivirals (Lamivudine, Telbivudine, Adefovir, Entecavir and Tenofovir).

  • Refer patients with chronic HBV, co-infected with HCV/HIV and patients with abnormal ALT/AFP/liver ultrasound to gastroenterologist/hepatologist.

  • Counsel on importance of avoiding alcohol, getting family members screened for HBV and preventing the spread of HBV.
Practical Difficulties in the HBV affected population

- At community/patient level:
  - Stigma and fear attached to HBV infection
  - Lack of awareness of HBV infection and complications.

- At provider level:
  - Lack of awareness of screening guidelines in high risk population.
  - Different providers (NP, PA, MD) with different knowledge base.

- At system level:
  - Disjointed points of healthcare access for patients.
  - Inconsistent public health surveillance systems among jurisdictions.
Solutions

- **Patient** education on HBV screening, complication, prevention and surveillance.

- **Provider** education on HBV screening in high risk populations (Asian and African) and importance of follow up/surveillance/counseling.

- **System** support to identify at risk foreign born from endemic areas (Health Partners/Patricia Walker MD - Global Wizard).

- Intersystem exchange of Hep B status of patients via EMR.

  - **Reduce** repeat testing, provide accurate tallies of chronic vs acute infections and enable surveillance between jurisdictions.

  - Surveillance system linking HBV patients to comprehensive viral-hepatitis programs (case management).


Questions??

Grazie