

HBV JEOPARDY QUESTIONS

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Answer in italics.

STATISTICS

| <u>Amount</u> | <u>Question</u> |
|---------------|---|
| 100 | How many people are living with chronic HBV worldwide? <i>350-400 million</i> How many people are living with HIV worldwide? <i>40 million</i> |
| 200 | Without monitoring or treatment, what percent of people will die from complications caused by chronic HBV infection? <i>25% (1 in 4)</i> |
| 300 | What percent of liver cancer worldwide is caused by HBV? <i>80%</i> How many people die worldwide every year from liver cancer? <i>600,000</i> |
| 400 | China carries the biggest burden of HBV in the world. How many people in China are living with chronic HBV? <i>130 million</i> China accounts for what percent of liver cancer deaths in the world? <i>52-54%</i> |
| 500 | How many people in the U.S. are estimated to be living with chronic HBV? <i>1.4 million</i> How many people in the U.S. are living with HIV? <i>1 million</i> If you are white or Hispanic, what are your chances of being infected with HBV? <i>1/1000</i> If you are a foreign born Asian in the U.S., what are your chances of being infected with HBV? <i>9-10%</i> If you are a U.S. born Asian, what are your chances of being infected with HBV? <i>1.4%</i> |

TRANSMISSION

| <u>Amount</u> | <u>Question</u> |
|---------------|---|
| 100 | What is the most common misconception about HBV transmission? <i>It can be transmitted through food and water – confused with hep A.</i> |
| 200 | How long can the HBV virus live outside the body? <i>1 week</i> |
| 300 | How is HBV transmitted? List the 3 major categories and give an example of each. <i>1. Birth – from infected mother to child during childbirth</i> <i>2. Blood – reusing contaminated medical devices, IV drug use, sharing razors or toothbrushes, open wound contact</i> <i>3. Sex – unprotected sex with infected person, ex. MSM</i> |
| 400 | Is there potential for HBV transmission through saliva? <i>No – HBV is present in very minute concentrations, but not enough for infection.</i> |
| 500 | Can HBV be transmitted from person to person by mosquitoes? <i>There are no documented cases of this – different strains of mosquitoes can carry different viral strains but this has not been well-studied for HBV.</i> |

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PREVENTION

| <u>Amount</u> | <u>Question</u> |
|---------------|---|
| 100 | <p>Why does the WHO call the hepatitis B vaccine the first “anti-cancer” vaccine? <i>HBV causes 80% of cases of liver cancer – so preventing HBV can effectively eliminate 80% of all liver cancers.</i></p> |
| 200 | <p>T/F: Current CDC guidelines recommend getting your blood tested ten years after being vaccinated, and then getting a booster shot if necessary. <i>False – there are no current CDC recommendations for HBV booster shots.</i></p> |
| 300 | <p>What is the best way to prevent transmission from infected mother to child? <i>The infant should receive the birth dose of the HBV vaccine and the hepatitis B immunoglobulin (HBIG) immediately at birth. The child should finish his HBV vaccine series as usual, with the second dose at 1-2 months and the third dose at 6 months. This cuts mother-to-child transmission rates down to 3%!</i></p> |
| 400 | <p>If I want to protect myself from both hepatitis A and B, what can I do? <i>You should be vaccinated for hepatitis A and B. The hepatitis A vaccine is a 2-shot series, with the second dose taken 6 months after the first shot. The hepatitis B vaccine is a 3-shot series, with the second dose taken 1-2 months after the first shot, and the third shot taken 5 months after the second shot. There is also a combination A+B vaccine on the market called Twinrix; the shot schedule for Twinrix is the same as that for the HBV vaccine.</i></p> |
| 500 | <p>I received my first hepatitis B shot a year ago and never completed the series. What should I do now, and why? <i>You should complete the second and third shots; you do not need to repeat the first dose. The recommended schedule for the HBV vaccine is only a series of MINIMUM requirements between each shot. In other words, you must not get the second and third doses before the recommended time period, but any time afterwards is fine. The 3rd dose is essentially like a booster shot; after the first 2 doses, 80% of people have already developed immunity to HBV.</i></p> |

DIAGNOSIS

| <u>Amount</u> | <u>Question</u> |
|---------------|---|
| 100 | <p>What should I do to find out if I have HBV? <i>Ask your physician for the hepatitis B surface antigen (HBsAg) blood test. This is the only blood test that can positively identify whether or not you are a carrier.</i></p> |
| 200 | <p>At a recent physical my doctor said that my liver function blood tests are normal, and I feel completely healthy. Does this mean I am HBV-free? Why or why not? <i>Not necessarily. The HBsAg test is the only blood test that can definitively determine whether or not you are a HBV carrier. Also, not all HBV carriers show abnormal liver enzyme levels; in many carriers these levels stay normal until they reach the end stages of liver damage or liver cancer.</i></p> |

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- 300 [Daily Double] Before the HBV-DNA blood test was available, what blood test was done to determine how much HBV virus is in the body?
The HBeAg test – a positive result is a good indicator of high viral load. Although it is not a direct measure of viral load like the more costly HBV DNA test, HBeAg is a much cheaper test and is still a widely used marker to monitor the response to treatment.
- 400 Please explain these test results:
1) HBsAg- / anti-HBs+ / HBcAb+
The core antibody test is positive, indicating that immunity was developed during a prior infection, when the body was able to fight off the virus. The surface antibody test is also positive, so the person is protected from chronic HBV infection.

2) HBsAg- / anti-HBs+ / HBcAb-
The core antibody test is negative but the surface antibody test is positive, indicating that immunity was developed by getting the HBV vaccine.
- 500 I got my blood test for HBV and the results came back HBsAg+, anti-HBs+. Explain these results.
You do have the antibodies for HBV, but you are still a carrier. You should follow the same recommendations for HBV carriers (see Treatment, \$200 question).

TREATMENT

- | <u>Amount</u> | <u>Question</u> |
|---------------|---|
| 100 | T/F: Everyone with chronic HBV needs treatment. <i>False!</i> What are the 5 FDA-approved treatments for HBV? <i>3 oral antiviral medications: adefovir, entecavir, lamivudine</i> <i>2 infection treatments: alpha-interferon, pegylated interferon shots (these have a lot of side effects)</i> |
| 200 | What are your recommendations for monitoring of HBV carriers? Be specific! <i>First of all, don't panic. With appropriate monitoring, it is completely possible to lead a normal and healthy life. There are a few tests you should do regularly to screen your liver for early signs of damage or cancer.</i> <i>Every 6 months:</i> <i>- alanine transferase (ALT) test: screens for liver damage.</i> <i>- alpha-fetoprotein (AFP) test: screens for liver cancer</i> <i>Also, get an ultrasound of the liver once a year to scan for tumors. The combination of all 3 of these tests is essential, as either one by itself is not 100% effective in detecting liver damage or cancer.</i> Is there anything else you recommend these patients do? <i>We also recommend getting the hepatitis A vaccine to prevent any further damage to your liver. Also avoid drinking alcohol.</i> |

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- 300 I read in a newspaper that there is a new Chinese herbal medicine that can help get rid of the HBV virus. How do you respond?
There are currently only 5 FDA-approved medications for HBV (see Treatment \$100 question). None of these medications can completely eliminate the virus from your body, but they can help control the viral load. There have been no other proven treatments found to get rid of the virus. Consult your doctor before taking the medicine.
- 400 If a carrier is taking oral medications, how long does he/she need to stay on the treatment? *Long-term/for life.*
- 500 I have chronic hepatitis B. I also have cirrhosis, and my family has a history of liver cancer. What changes, if any, would you make to the normal recommendations for monitoring my disease?
Increase the frequency of AFP screening (for liver cancer) to once every 3-4 months, and increase the frequency of ultrasounds to once every 6 months.

GRAB BAG

- | <u>Amount</u> | <u>Question</u> |
|---------------|--|
| 100 | Why are HBV rates so much higher in Asians than in any other ethnic group? <i>HBV is endemic to Asia in the same way that HIV is endemic to Africa. The main mode of transmission for Asians is silent perinatal transmission, whereas for non-Asians HBV is transmitted mostly later in life (ex. IV drug use, unprotected sex, etc.). So for Asians, the virus is passed silently from generation to generation – thus making the need for education and awareness especially important.</i> |
| 200 | What are the differences between hepatitis A, B, and C? <i>Hepatitis A is a foodborne virus, hepatitis B and C are bloodborne. The main mode of transmission for hepatitis A is food and water, for hepatitis B is mother to child, and for hepatitis C is blood transfusion. Hepatitis A is usually cleared within a few months; hepatitis B and C are usually chronic infections. Hepatitis A and B have vaccines, hepatitis C does not.</i> |
| 300 | [Double Jeopardy] What does HIPAA stand for, and why is it important? <i>Health Insurance Portability and Accountability Act. As interns, you will be speaking with many people about their personal health concerns and will sometimes be handling lab results and medical histories through our screening programs. It is of the utmost importance to keep information in the strictest confidence and to conduct yourself with professionalism! Also, when you are dealing with someone's test results, you are NOT allowed to discuss their diagnosis with them unless they first approach you.</i> |

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400 I am a pregnant woman with chronic HBV. Can I prevent transmission to my baby by getting a C-section?

No, a C-section will not prevent transmission from mother to child. A C-section is also unnecessary as long as you make sure your child gets the birth dose of HBIG and first dose of the HBV vaccine immediately at birth, and finishes the rest of the HBV vaccination series at 2 and 6 months.

500 I completed all three shots of my HBV vaccine series, but I still do not have immunity. What are some possible reasons for this? What do you recommend that I do?

There are 3 possible reasons why the vaccine did not work:

- 1. The vaccine was not stored properly (an environment that is too hot or cold can render the vaccine ineffective)*
- 2. The vaccine was administered incorrectly (in fatty tissue or subcutaneously)*
- 3. You are immunologically nonresponsive to the vaccine – this is the case in about 5% of all people.*

You can try the vaccine series again, perhaps using a different brand of vaccine. Get the blood test afterwards to confirm whether or not the vaccine worked. If the vaccine doesn't work after multiple tries, you are likely in the 5% of those unresponsive to the vaccine. In this case, avoid engaging in high-risk activities like sharing needles, having multiple sexual partners, etc.

FINAL JEOPARDY

Is it true that the HBV vaccine is equally effective if administered in the arm or the butt? Explain.

No. The vaccine does not work in fat, so it must be given in muscular tissue such as the arm or thigh. It also does not work subcutaneously.