

Re: Weird hepatitis B test results

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 - *Date:* Sat, 18 Aug 2007 02:16:52 -0700
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On Aug 17, 11:42 pm, ri...@xxxxxxxxx (Rich Wales) wrote:

I posted this question in sci.med.diseases.hepatitis last week, but no one replied. I'm hoping maybe I'll have better luck here.

I'm interested in opinions on a set of strange test results related to hepatitis B.

After donating blood in 2001, I was informed by the blood bank that my blood had tested "reactive" to the hepatitis B core antibody. The blood bank test was part of the routine screening that gets done nowadays on all donated blood.

My doctor did another hepatitis B core antibody test on me in 2003, and I tested reactive on that test too. I had previously been told by the blood bank that if I were to test reactive to anti-HBc twice, I would be permanently barred from giving blood.

However, several other hepatitis B tests performed on me between 2001 and 2006 were negative. Specifically, the following were all negative:

HB surface antigen
HB surface antibody
HB core IgM
HB "e" antibody
HB viral DNA

I was vaccinated against hepatitis B last year (2006). After the third (last) dose, I was tested again for anti-HBs, and this time the test result was positive (whereas previously it had been negative). Possibly unfortunately, no anti-HBs tests were performed after the first or second dose of vaccine -- only after the last.

My set of assumptions at this point is that:

(1) since the anti-HBc results were not corroborated by any of the other tests, they were most likely false positives;

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(2) the other (negative) test results strongly suggest that I had never had hep-B, had never been exposed to hep-B, and had (up till that time) never been vaccinated against hep-B; and

(3) the changing of my anti-HBs test result from negative to positive after the vaccination series confirmed that the vaccination had worked and that I am now immune.

Are there any other plausible explanations for the above set of test results? Would any other tests be advisable at this point? Or can I be satisfied that I am safe from hepatitis B?

For better or for worse, the (repeatable) positive anti-HBc result means I am unable to donate blood any more, no matter what any other test results might say. Too bad, I guess — my blood type is AB+, which I'm sure blood banks would like to have if there weren't this concern over possible HBV. Is any promising work being done on improved hepatitis screening tests for use on donated blood, which might have fewer false positive results?

Rich Wales ri...@xxxxxxxx <http://www.richw.org>

*DISCLAIMER: I am not a doctor. My comments are for discussion purposes only and are not intended to be relied upon as medical advice.

That is a fairly common question asked concerning Hepatitis B serology. They asked me that one about a month ago at work. A good resource is the CDC website with a table of interpretations.

<http://www.cdc.gov/ncidod/diseases/hepatitis/b/Bserology.htm>

You will see four possibilities of having a positive total Core antibody with negatives in others.

1. Might be recovering from acute HBV infection.
2. Might be distantly immune and test not sensitive enough to detect very low level of anti-HBs in serum.
3. Might be susceptible with a false positive anti-HBc.
4. Might be undetectable level of HBsAg present in the serum and the person is actually chronically infected.

Since it was several years ago the first can be thrown out. The second possibility can be ruled out by a vaccine challenge and following the titer or strength of reaction after the first vaccine as mentioned. A rapid rise is indicative of an anamnestic response and thus a low level antibody titer was too low giving a negative HBsAB. A false positive would not yield a rapid or high titer after re challenge with vaccine and thus a true false positive. In practical terms the vaccine

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is given and once anti-HBs antibody is detected immunity is achieved. That's all one is looking for.

The last one is of more concern and the reason why BB do what they do. It is possible to not only have low levels of HBsAg in serum present but in having genetic variants of the B surface antigen that will give a negative serology test in use for detection of HBs antigen. The antigen varies that much from the standard viral antigens in the population. Luckily these are rare but again for safety reasons and in preventing transmission of infectious agents then they would rather error on the safe side. The NAT Nucleic acid testing, involving viral genome obviously helps in not detecting virus antigens or genetic material.

As to blood units of type AB, donors in emergency and in those with massive transfusion needs are given type A blood. It would not be unusual to stock 100 units of type A positive and only 2 units of type ABpos.

the only area donations would be wanted would be from males and not females who are Type AB for the plasma and those units are frozen for a year with a long half-life.

Hope it helps.