

Acute hepatitis B in a vaccinated soldier

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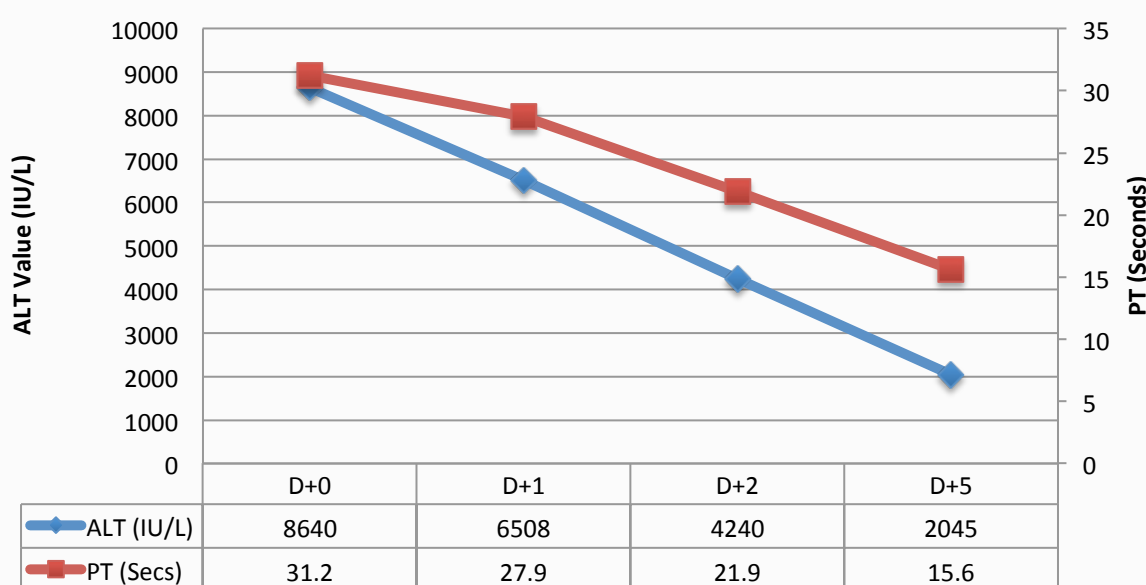
Case History

A 24 year old male infantry soldier presented with acute jaundice and fever, 6 weeks after returning from jungle warfare training in Thailand. He initially had central abdominal pain and diarrhoea for 7 days and underwent laparoscopic appendectomy. Histology showed severe acute diffuse suppurative appendicitis and peri-appendicitis with no perforation. He was discharged with an ALT 933 IU/L (normal < 35).

24 hours after discharge, he developed epigastric pain, nausea and fever and within a further 72 hours he was admitted to hospital with marked jaundice. He remained afebrile and had no focal symptoms. He denied any occupational or recreational risk factors for blood borne viruses. He had received a standard course of hepatitis B immunisations (last of 3 doses April 2017) and had been immunised against hepatitis A. His blood results are presented below.

Test	Result
HBsAg	+ve
HBc IgM	+ve
HCV antibody	-ve
HIV Ag/Ab	-ve

Alanine Aminotransferase and Prothrombin Results over 5 days of admission



Recommendations for the use of the vaccine:

Born on or after 1 August 2017

- ▶ Infants as part of the routine childhood immunisation programme (pre-exposure).
- ▶ Individuals at *high risk** of exposure to the virus or complications of the disease (pre-exposure).
- ▶ Individuals who have already been exposed to the virus including infants born to hepatitis B–infected mothers (post-exposure).

Born up to and including 31 July 2017

- ▶ Individuals at *high risk** of exposure to the virus or complications of the disease (pre-exposure).
- ▶ Individuals who have already exposed to the virus including infants born to hepatitis B–infected mothers (post-exposure).

*Those considered at high risk of exposure to the virus or complications of the disease:

- ▶ Persons who inject drugs.
- ▶ Individuals who changed sexual partners frequently.
- ▶ Close family contacts of a case or individual with chronic hepatitis B infection.
- ▶ Family adopting children from countries with a high or intermediate prevalence of hepatitis B virus.
- ▶ Foster carers.
- ▶ Individuals receiving regular blood or blood products and their carers.
- ▶ Patients with chronic renal failure.
- ▶ Patients with chronic liver disease.
- ▶ Inmates of custodial institutions.
- ▶ Individuals in residential accommodation for those with learning difficulties.
- ▶ People travelling to or going to reside in areas of high or intermediate prevalence.
- ▶ Individuals at occupational risk: *healthcare worker in UK and overseas, laboratory staff, staff of residential and other accommodation for those with learning difficulties, occupation risk, that is, prison staff, morticians, embalmers, emergency services.*

Take Home Messages

- 1) Acute HBV infection is an important differential even in vaccinated patients
- 2) HBV vaccine has an efficacy of 85-90% ¹
- 3) Important to assess for risk factors of being a vaccine non-responder ¹⁻³
- 4) Not all patients have HBs antibody titres performed ¹- should they?

References

1. Public Health England. Hepatitis B: The Green Book, Chapter 18. In: England PH, ed.: Public Health England, 2017.
2. Roome AJ, Walsh SJ, Cartter ML, et al. Hepatitis B vaccine responsiveness in Connecticut public safety personnel. *JAMA* 1993;270(24):2931-4.
3. Rosman AS, Basu P, Galvin K, et al. Efficacy of a high and accelerated dose of hepatitis B vaccine in alcoholic patients: a randomized clinical trial. *Am J Med* 1997;103(3): 217-222