

P157

P157 -Hepatitis B vaccination as a cause of misdiagnosis of hepatitis B infection in haemodialysis patients: recommendations for avoiding diagnostic confusion.

Dr April Wilson¹, Dr Jake Moss¹, Dr Robert Jackson¹, Dr Jim Moriarty¹
¹Gloucestershire Hospitals NHS Foundation Trust, Gloucester, United Kingdom

Background: Renal dialysis patients are a group vulnerable to blood borne viruses and thus the National Institute for Clinical Excellence (NICE) and the Renal Association suggest that patients who are likely to require renal replacement therapy should be identified early in the course of their disease to receive immunisation.

This case report details two patients with dialysis-dependant end stage renal failure who tested positive for hepatitis B surface antigen (HBsAg). This occurred when both were inpatients on the same haemodialysis unit and machine. The patients had recently been screened for blood borne viruses as part of Renal Association recommendations. However, both had also received the HBsAg vaccines in the preceding 10 days prior to testing positive on this routine surveillance.

Methods: Collection of historical patient data enabled the construction of a timeline of events from when each patient had been vaccinated, the washout period prior to re-testing and the several rounds of laboratory results reported. Furthermore, several discussions between multi-disciplinary teams managing a potential HBV outbreak were included to demonstrate the impact of such positive results.

Results: Patient 1 was known to have had HBV in the past but prior screening showed no active disease (Anti-HB core positive and HbsAg negative). However, on this occasion this patients bloods demonstrated HBsAg positive on routine screening, with a recent immunisation 4 days prior to testing. Patient 2 had waning hepatitis B immunity following previous vaccination and was not known to have had previous HBV. Yet, this patient was found to be HBsAg positive on a routine 3 monthly check in a non-immune patient, having been vaccinated with a booster dose 10 days previous to the sample being taken.

Analysis: Due to the washout period between vaccination and testing we were unable to confidently differentiate between a re-activation of HBV/new infection and a false positive result. The consequences of these positive results lead to the isolation of patients involved, multi-professional input, expensive re-testing on multiple assays, involvement of the local Health Protection Team and unnecessary patient distress.

Recommendations: Current Renal Association guidance recommends that patients on regular haemodialysis, who have responded to hepatitis B immunisation, are to be screened once a year for hepatitis B infection and non-responders tested every 3 months for evidence of hepatitis b infection (HBsAg). However, this guidance does not specify a recommended washout period following vaccination. The existing evidence base has found that transient HBsAg positivity can occur in patients following HBV vaccination. Yet, this positivity is unlikely to persist beyond 14 days post-vaccination.

Nevertheless, given the higher dose vaccines in renal patients and the cases noted above this report recommends that a longer washout period should be considered to avoid potential false positive results. This finding is in agreement with the 2012 Advisory Committee on Immunisation Practices (ACIP) guidance

suggesting that testing should be performed 1-2 months after administration of the last dose of the vaccine. This case report thus calls for an update to the current Renal Association guidance with an intention to standardise practice.