CORRESPONDENCE

Redefining an Optimal Donor Deferral Period following Hepatitis B Immunization

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Dear Editor,

Potential blood donors vaccinated recently for hepatitis B must be temporarily deferred [1, 2]. These recommendations are based on the observations that hepatitis B surface antigen [HBsAg] may be detected for a transient period of time after immunization ranging anywhere from 3 to 18 days [1–3]. We report herein the case of a 24 year old male voluntary blood donor who had received hepatitis B vaccine 14 days prior to donation in the month of March 2017. The National AIDS Control Organization [2007] and World Health Organization [2012] recommend that recently vaccinated blood donors should be accepted only after 7 and 14 days respectively [4, 5]. Thus, on having fulfilled the criteria laid for blood donation [in conformance to the recommendations] we accepted him. During transfusion transmissible infection testing, his sample was found to be HBsAg reactive [S/CO value = 3.835] using 3rd generation enzyme immune assay reagents [Biorad, Switzerland]. Additionally his sample was found to be reactive on rapid immunoassay platform [Virucheck, Orchid Biomedical Systems, Tulip Diagnostics, Goa]. The laboratory technician tagged the unit as HBsAg reactive in the blood bank software. Accordingly the blood unit was discarded and the donor was notified by means of a direct phone call as well as a postal letter. Almost 10 days later, the donor visited the

department for one-on-one counseling with the blood bank physician. During counseling, he revealed about having received a dose of recombinant hepatitis B vaccine, 1 mL intramuscular almost 2 weeks prior to donation. He never complained of either any history of unexplained jaundice and or signs of clinical hepatitis at that time. Seeing his sero-reactivity status the blood bank physician directed the donor to meet the gastroenterologist for further confirmation. On follow up, his fresh blood sample was drawn and tested using chemiluminescence assay. This time his test results were non-reactive for HBsAg. Furthermore his Anti-HBs titers were in the protective range [73 mIU/mL]. On performing the quantitative polymerase chain reaction using COBAS TaqMan [ROCHE Molecular Systems, Inc] no viral DNA was detected. His liver enzymes were well within the normal physiological limits. The previous sero-reactivity to HBsAg therefore, was attributed to vaccine associated antigenemia which had led to a biological false reactive [BFR] result leading to both donor anxiety as well as loss of the donated unit. Literature reports variable amount of time periods for which donors can test positive following immunization. Kloster and Dow et al. [2, 3] showed that hepatitis B antigen took almost 3 and 5 days to disappear completely among the blood donors respectively. Lunn et al. reported that a 17 year old blood donor was permanently deferred due to positive HBsAg almost 18 days after receiving recombinant hepatitis B vaccine. They further proposed that blood establishments should defer the recently vaccinated donors up to 21 days to avoid BFR results [6]. Likewise our findings suggest that 3 weeks might be optimal instead of the existing 2 weeks deferral period following immunization. Hepatitis B surface antigenemia following vaccination should therefore, be interpreted with caution. Presently donor has been re-entered into the donor pool. Re-entry of falsely sero-reactive donors would help us alleviate the perpetual challenge of the shrinking donor population.

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Compliance with Ethical Standards

Conflict of interest Authors declare no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional ethics committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent As per the department protocol informed consent [regarding disclosure of sero-reactivity] is obtained from all the donors prior to donation itself.

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