A revised method for estimating hepatitis B virus transfusion residual risk based on antibody to hepatitis B core antigen incident cases

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Résumé en anglais	BACKGROUND: To take into account the transient nature of hepatitis B virus (HBV) antigenemia, the calculation of HBV residual risk (RR), based on the incidence/window period model, is adjusted by a correction factor that adds uncertainty to the RR estimates. STUDY DESIGN AND METHODS: This new method to estimate the RR for HBV is a weighted sum of the RR derived from hepatitis B surface antigen (HBsAg) incident cases and the one derived from antibody hepatitis B core antigen (HBc) incident cases. An anti-HBc incident case was defined as a donation from a blood donor who had made at least one anti-HBc–negative donation followed by a donation that was found positive with two different assays within a 3-year period and positive for at least one of the following markers: 1) antibody to hepatitis B e antigen or hepatitis B e antigen, 2) anti-HBc immunoglobulin M, 3) HBV DNA, 4) hepatitis B surface antibody without HBV vaccination history, or 5) HBV DNA retrospectively found in the previous donation. Five overlapping 3-year study periods between 2000 and 2006 were analyzed. RESULTS: The HBV RR estimated with the classical method ranged from 1.51 (2000-2002) to 0.69 per million donations in 2004 through 2006 with a decrease in 2002 through 2004 due to only two HBsAg incident cases reported in this period. By applying the revised model, the HBV RR ranged from 1.06 (2000-2002) to 0.49 per million donations (2004-2006), with a regular decrease. CONCLUSION: The new presented model provides HBV RR estimates that do not statistically differ from those obtained with the classical model; however, it provides more accurate data, especially in low endemic areas where the HBsAg incidence is low.

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