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Letters to the Editor

Concerns on the mother-to-child transmission of hepatitis B virus reported in Ethiopia

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Abstract

Introduction: Taye and colleagues reported that the rate of mother-to-child transmission (MTCT) of hepatitis B virus (HBV) was as high as 20.7% in Ethiopia based on their meta-analysis of three studies [1]. However, numerous studies demonstrate that the overall rate of MTCT is below 5% after timely neonatal administration of hepatitis B immunoglobulin (HBIG) and hepatitis B vaccine after birth.

Concerns: The reports on which the meta-analysis was conducted appear to be problematic. The infants of HBV-infected mothers were not vaccinated against HBV at all, in one report. In another report, MTCT was defined based on positive hepatitis B surface antigen (HBsAg) in the umbilical cord blood, which is not correct because vast majority (> 95%) of positive HBsAg in umbilical cord blood is not infected with, but exposed to, HBV. Thus, MTCT of HBV calculated to be as high as 20.7% in this meta-analysis was overestimated, and much higher than the reported rate of 1–3% immunoprophylaxis failure in other parts of the world, including in Africa.

Conclusions: The rate of MTCT of HBV in Ethiopia in this meta-analysis was overestimated. High-quality investigations are required to understand the real picture of immunoprophylaxis against MTCT of HBV in Ethiopia.

Key words: hepatitis B virus; mother-to-child transmission; neonatal immunoprophylaxis; hepatitis B immunoglobulin; hepatitis B vaccine.

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Dear Editor,

The article "The risk of mother-to-child transmission of hepatitis B virus infection in Ethiopia: a systematic review and meta-analysis" recently published in J Infect Dev Ctries reported interesting results [1]. In their article, Taye and colleagues summarized the results of three studies (references 18, 20, and 21 of the article [1]) and found that that mother-to-child transmission (MTCT) of hepatitis B virus (HBV) in women without human immunodeficiency virus (HIV) infection was as high as 20.7% [1]. We are concerned about the heterogeneity of these three studies.

Concerns

One study (reference 21 of the article [1]) published in 1988 reported MTCT of HBV in infants who were not vaccinated against HBV at all. Out of 25 infants born to HBV infected mothers, just three (12%) were infected with HBV.

Another study (reference 20 of the article [1]) defined HBV infection based on the positive hepatitis B surface antigen (HBsAg) in umbilical cord blood, leading to vertical transmission rate as high as 75% (6/8). However, positive HBsAg in umbilical cord blood cannot serve as a marker to define vertical transmission, because vast majority (> 95%) of positive HBsAg in umbilical cord blood is not infected with HBV [2,3], and the presence of HBsAg in umbilical cord blood just indicates exposure to, but not infection with HBV [3]. Thus, MTCT of HBV as high as 20.7% in the article is overestimated, much higher than the reported rate of 1–3% immunoprophylaxis failure in other parts of the world, including in Africa [2–6].

Concurrent use of hepatitis B immunoglobulin (HBIG) and hepatitis B vaccine in infants born to HBsAg-positive mothers is the recommended protocol to prevent MTCT of HBV [7,8]. With this protocol, the overall MTCT of HBV is just around 1–3% [2–6]. In fact, without HBIG, timely birth dose of hepatitis B vaccine and additional two vaccine doses at one and six months age respectively, can also almost completely block MTCT of HBV in infants born to HBsAg positive mothers with negative hepatitis B e antigen (HBeAg) in

Asia [9–12] and in Tunisia [13]. The main reason is attributed to the low viremia of HBeAg negative carrier mothers [11,12]. However, a negative HBeAg does not indicate low viremia in some regions of Africa [14].

Conclusions

The findings observed in Asia may not be directly extended to Africa. Nevertheless, immunoprophylaxis against MTCT of HBV by hepatitis B vaccination, together with HBIG if possible, has also been demonstrated to be successful in Africa [15]. Therefore, it requires high-quality investigations to understand the real picture of immunoprophylaxis against MTCT of HBV in Ethiopia.

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