Selective or universal hepatitis B birth dose in sub-Saharan Africa?

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Afifa Ansar and colleagues[1] in *The Lancet Global Health* suggest targeting the hepatitis B birth dose (HepB-BD) in sub-Saharan Africa to only infants born to hepatitis B surface antigen (HBsAg)-positive mothers or those whose mothers were not tested for hepatitis B virus (HBV) infection. This suggestion is based on a systematic review and meta-analysis by the authors in which they did not find a statistical difference for the risk of infant HBV infection when mothers were HBV negative, whether infants received a birth dose (HepB-BD) or a first dose of hepatitis B vaccine only at age 6 weeks. We would like to suggest that these results are not sufficient to revise the current WHO universal Hep-BD vaccine recommendation.

WHO recommends universal HepB-BD followed by an additional two or three doses (combined vaccine with doses at 6, 10, and 14 weeks or 8, 12, and 16 weeks).[1,2] A targeted strategy limited to HBsAg-positive mothers or those whose mothers were not tested for HBV infection would complicate guidelines and require substantial efforts for selecting infants at risk, which might lead to lower immunisation coverage in at risk populations. This effect was observed in Greenland, where a targeted hepatitis B vaccination approach was less effective compared with vaccination rates within universal childhood vaccination programmes.[3] Our own experience in Brazil and in Angola studying hepatitis-B infected pregnant mothers revealed widespread deficiencies in knowledge about HBV infection among health-care workers (HCW), which makes the reliable identification of infants at risk questionable. This deficiency is further compounded by high turnover among HCW, limiting the effect of educational efforts.

Additionally, results for HBV screening in mothers are often not readily available at time of delivery. Despite the gradual increase of HBV screening during prenatal care in sub-Saharan Africa, the information might not reach the HCW at time of delivery. In Brazil and Angola, HBV test results are registered in mothers' prenatal care cards and should be presented at health facility at time of delivery. However, in practice, these cards are often not presented, and as long as electronic patient records are not widely established, a selective HepB-BD strategy based on the mother´s HBV status before delivery might be not very effective while adding additional duties for already overwhelmed HCW.

Another issue is that pregnant mothers in most countries in sub-Saharan Africa report a low rate (<50%) of participation in four or more prenatal visits.[4] Therefore, an HBV negative test might not necessarily reflect the true status at the time of delivery, especially in countries where polygamy is a common practice together with high prevalence of chronic HBV infection. In Angola, we detected anti-hepatitis B core antibody IgM in nine (13%) of 70 HBV-positive pregnant women, suggesting recent acute infection,[5] of which eight (89%) were in the second or third trimester. Had these women been tested during their first pregnancy trimester they might have been considered HBV-negative. Furthermore, 67% had a viral load of more than $7\log_{10}$ IU/mL or were hepatitis B e antigen (seromarker for high viremia) positive, posing increased risk for perinatal transmission. In Brazil, our Viral Hepatitis Ambulatory at the Fundação Oswaldo Cruz, Rio de Janeiro, registers occasional cases of acute HBV infection among the referred pregnant women, some of which arrive in their late third trimester. Fortunately, both Angola and Brazil currently follow universal HepB-BD vaccine recommendations, thus covering infants at risk born to mothers with undetectable HBsAg seroconversion during pregnancy.

Edna Moturi and colleagues[6] highlight another important aspect related to targeted HepB-BD immunisation, which is the stigmatisation of HBV-infected women. This stigmatisation is especially probable in smaller communities, and we have observed this first hand in a small county in Angola, where we found that infected women often avoided perinatal care and delivery at health facilities in subsequent pregnancies. Consequently, their infants who are at risk lose the opportunity to receive timely HepB-BD vaccination.

Overall, we strongly believe that, while targeted HBV vaccination strategies might be theoretically effective, they are currently not truly feasible due to the challenges outlined here. We are aware that implementing the current Hep-BD vaccination recommendations in sub-Saharan Africa countries has also major hurdles to

overcome, but specific strategies to improve vaccine supply, vaccine storage temperatures (for home deliveries), coverage monitoring, and local guidelines and policies have been proposed.[6,7] Many countries with previously high HBV prevalence in southeast Asia and in the western Pacific have already demonstrated the feasibility of these approaches. We are convinced that sub-Saharan Africa can and should follow these examples and focus efforts and political commitment on universal HepB-BD vaccination, which remains the gold standard for protection from HBV infection.[8–10] Although we acknowledge the authors´ findings we differ in conclusion based on our practical experience.

We declare no competing interests.

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