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Policy Brief: The Hepatitis B Vaccine Birth Dose Should Be Part of Uganda's Routine Immunization Schedule

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Executive summary

Hepatitis B remains a public health issue that has not been adequately addressed, despite being endemic in Uganda. Most of the burden of Hepatitis B Virus (HBV)-related disease results from infections acquired in infancy through perinatal or early childhood. The WHO recommends that all infants should receive their first dose of vaccine as soon as possible after birth, followed by 2 or 3 doses How- ever, according to Uganda's immunization policy, vaccination against Hepatitis B is given as part of the pentavalent vaccine, at 6, 10, and 14 weeks. The birth dose has not been included. In the absence of the universal HBV vaccine birth dose, the transmission of HBV infection from mother to child remains a major source of chronic liver disease when infected children become adults. Ministry of Health needs to intro- duce a birth dose for HBV vaccine to further reduce hepatitis B transmission in Uganda. This is as a cost-effective strategy to reduce maternal-to-child transmission (MTCT) of Hepatitis B.

Introduction

Hepatitis B virus (HBV) is a significant public health issue that has not been adequately addressed, especially in the high-prevalence regions of Africa (1). Uganda is endemic for hepatitis B with a prevalence of 4.3% among adults (15 to 64 years) and the prevalence varies across the country with the highest rates in Northern region with 4.6% in mid North, 4.4% in North East, and 3.8% in West Nile (2). HBV infection occurs mainly during infancy and early childhood, with MTCT accounting for approximately half of the transmission routes of chronic HBV infections (3).

Despite the incorporation of HBV vaccines into the Expanded Pro- gram on Immunization, children continue to be infected with HBV through maternal-to-child transmission (MTCT), a common route of acquisition of HBV(1). Unfortunately, up to 90% of infants infected via MTCT will go on to develop chronic infection by adult- hood (4). More so, HBV infection often times goes undetected in childhood, as those infected are typically asymptomatic until they present with liver complications later in life (5).

The HBV vaccine can provide >95% protection to the individual if appropriately given. In 1992, the World Health Organization (WHO) recommended universal HBV vaccination starting at 6 weeks. Upon adoption of this policy, many countries experienced drastic reductions in rates of chronic HBV infection. In 2005 the birth dose of HBV vaccine strategy was further introduced in some regions, with assistance from the WHO and the Global Alliance for Vaccines and Immunizations (GAVI), among others.

However, the birth-dose HBV vaccine policy has not been implemented in Uganda. With appropriate adoption of birth-dose vaccination policies and expansion of PMTCT programs, elimination of HBV MTCT can be achievable.

Context and Importance of the problem

Most of the burden of HBV-related disease results from infections acquired in infancy through perinatal or early childhood exposure to HBV because infection acquired at an early age is more likely to be- come chronic than infection acquired later in life. In May 2016, the Global Health Sector Strategy on Viral Hepatitis set targets for 2030: to achieve 0.1% prevalence of HBV infection in children aged 5 years by 2030. However, a substantial burden of chronic HBV infection persists because the global coverage with the birth dose is still low, estimated globally at 39% in 2015 (6).

The government of Uganda introduced Hepatitis B vaccination through pentavalent vaccine as part of the National Expanded pro- gram on immunization in 2002. The infant three dose

Hepatitis B vaccination coverage has been over 90% since 2013. However, the 3-dose series typically begins at 6 weeks of age and provides little protection against HBV MTCT.

Vaccination outside of the critical 24-hour period after birth may not protect exposed infants against infection (7).

Timely HBV birth dose vaccination is one of the key interventions identified by the WHO in its Global Health Sector Strategy on Viral Hepatitis, with the target coverage rate of 90% by 2030. The goal is to eliminate viral hepatitis by the year 2030. The WHO recommends that all infants should receive their first dose of vaccine as soon as possible after birth, preferably within 24 hours. The birth dose should be followed by 2 or 3 doses to complete the primary series (6). The execution of this plan mainly relies on political commitments of the individual countries to prioritize administration of the HBV birth dose.

Critique of policy options

Major progress in the global response to viral hepatitis has been achieved through the expansion of routine hepatitis B vaccination, which was facilitated by the introduction of the birth dose (8).

However, according to Uganda's immunization policy (2012), vaccination against Hepatitis B is given as part of the pentavalent vaccine, at 6, 10 and 14 weeks. The birth dose has not been included.

In the absence of the universal birth dose, the transmission of HBV infection from mother to child remains a major source of chronic liver disease when infected children become adults. The failure to administer HBV vaccine within 24 hours of life leaves exposed infants vulnerable to acquiring infection from their mothers. A recent systematic re- view suggests that 1% of newborns in sub-Saharan Africa are infected each year through MTCT of HBV (9).

Since immunization services in Uganda are mainly funded by the government with additional support from donors and health development partners, the introduction of HBV vaccine birth dose faces competing priorities. However, with continued advocacy and political will, HBV vaccine birth dose can be prioritized.

Recommendations

Ministry of Health needs to support activities that will further re- duce hepatitis B transmission in Uganda. Offering a birth dose of HBV vaccine through the routine immunisation is the best strategy to reduce MTCT of Hepatitis B.

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