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Controlling the Burden of Liver Disease through Integrating Hepatitis A and B Vaccination into the National Immunization Programs of the EAC Partner States

EXECUTIVE SUMMARY

Liver cancer is a leading cause of deaths in the world. Chronic hepatitis B infection causes 80 percent of liver cancer cases in the EAC region. The combination of aflatoxin exposure with hepatitis infection especially among people, who are malnourished or living with HIV results in a double-disease burden that increases disease severity, reduces survivability and heightens liver cancer prevalence. The economic losses to residents of all EAC partner states associated with morbidity and mortality from aflatoxin-attributable liver cancer is of a high magnitude.

There is an urgent need to prioritize the prevention of Hepatitis A and B infections by administration of immunizations for all age group in the EAC Partner States.

THE PROBLEM

Viral Hepatitis is a group of infectious disease affecting hundreds of millions of people worldwide, causing serious illness from liver infections. Hepatitis infections can be acute which is associated with high mortality among adults or it can be chronic causing liver cancer.

Aflatoxin is a harmful agent released by fungi that contaminates food and dairy products. Dietary exposure to aflatoxin together with hepatitis B Virus infection places people at a higher risk of developing chronic liver diseases.

Individuals infected with HIV or hepatitis and those with compromised immune systems are more vulnerable to the effects of aflatoxin exposure. It may accelerate disease progression and heighten the risk of liver cancer.

SIZE OF THE PROBLEM

Liver cancer is the third leading cause of cancer causing 600,000 deaths globally¹. Over 90% of these liver cancer cases occur in the developing countries. Chronic hepatitis B infection is the most common cause of liver cancer, accounting for 23 percent of cases worldwide and up to 80 percent of cases are in developing regions where hepatitis B is endemic, as seen in the EAC. Hepatitis B Virus is widespread across the EAC and



A child getting vaccinated (IITA Photo)

the burden is as follows: 10 % in Uganda, 11–15% in Kenya and 3.6 % in Rwanda.

Globally, there are an estimated 1.4 million cases of Hepatitis A Virus (HAV) every year². Hepatitis A is prevalent among children in developing countries where poor sanitation and unhygienic practices prevail. HAV is found in 90% of children below the age of 10 years.

The economic losses that the residents of all EAC countries are paying from morbidity and mortality from HAV, HBV and liver cancer can be attributed to aflatoxin and is a measurable share of their countries' respective GDPs. The economic cost for each Partner States ranges as follows: (VSL-Value per statistical life) Burundi = \$18,000–\$72,000 VSL; Kenya = \$49,000–\$207,000 VSL; Rwanda = \$33,000–\$134,000 VSL; Tanzania = \$37,000–\$161,000 VSL; and Uganda = \$31,000–\$128,000 VSL³.

References:

1. Liu, Y., Chang, H-C., Marsh, G.H., Wu, F. 2012. Population attributable risk of aflatoxin related liver cancer: Systematic review and meta-analysis. *European Journal of Cancer* 48(14):2125–2136.
2. World Health Organization Factsheets July 2014 accessed at: <https://www.who.int/medicentre/factsheet>.
3. IITA. 2015. Aflatoxin standards for food: Knowledge platform 2014. TBS Standards Catalogue 2014 and EAC Secretariat Standards Office (reported in IITA, Aflatoxin Standards for Food – Knowledge Platform 2014). Situational Analysis East Africa Region.

CAUSE OF THE PROBLEM

The EAC community faces high rates of hepatitis B as well as hepatitis A. The combination with aflatoxin exposure results in a double-disease burden that increases disease severity, reduces survivability, and heightens liver cancer prevalence.

There is a large adult population of carriers with hepatitis B and hepatitis A antigen who can easily transmit the virus to others in various ways e.g. Mother to child transmission, unprotected sexual practices, unsterile use of contaminated needles, injection drug use especially among injecting drug users, traditional male circumcision practices, female genital cutting (FGC), scarifications which involve piercing of the skin and tattooing.

The problem is exacerbated by low awareness due to limited social marketing on hepatitis infections.

The immunization programs in Partner states for hepatitis B mostly focus on children age 0-12 years. Adults are less likely to be immunized for hepatitis B, and vaccination for hepatitis A is not included in immunization programs.

National immunization programs in the Partner States often faces human resource constraints, weak governance at all levels, limited availability of skilled health care at vaccine delivery points and inadequate funds.

POLICY OPTIONS

Policy Option 1: Partner States should expand vaccination programmes against Hepatitis B vaccines to introduce the birth dose and follow current protocols and ultimately reach further populations (e.g. youths over age 16, adults).

Vaccinating populations with Hepatitis B vaccines especially adolescents and adults and other people not previously vaccinated will over time lessen the number of people who are likely to get cancer of the liver as a result of aflatoxin

infections. Currently children above 6 weeks are being vaccinated therefore introduction of a “birth dose” should be introduced as recommended by the World Health Organization .

Policy Option 2: Partner States should introduce Hepatitis A vaccine that is currently not widely available or used.

Currently there is no effective treatment for Hepatitis A infection therefore vaccination against Hepatitis A is the most viable option for combating the disease.

Policy Option 3: Partner States should improve access to clean water and sanitation to communities.

The primary mode of transmission of Hepatitis A Virus is ingestion of contaminated food and water therefore the most effective ways to combat this disease is to improve sanitation.

IMPLEMENTATION STRATEGIES

1. Partner states should commence adult immunization catch up program against Hepatitis B virus in the age group of 16 years and above
2. Partner States should promote acceptable practices such as use of protection during sexual contact and safe male circumcision
3. Partner States should undertake social mobilization campaigns against drug and alcohol abuse

Hepatitis A and B infections are a major public health challenge within each of the Partner States of the EAC that needs to be urgently addressed. Public funding should be invested to address this problem by integrating Hepatitis A&B vaccination into the current national immunization programs.

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