

Human Papilloma Virus

HPV is the most common viral infection of the reproductive tract. Most sexually active women and men become infected with HPV at some point of their lives. Cervical cancer is by far the most common HPV-related cancer. Even though most HPV infections are clear on their own, there is a risk that HPV infection becomes persistent in some women and may lead to invasive cervical cancer. It takes approximately 15 to 20 years for a woman with persistent infection to develop cervical cancer.

Out of HPV genotypes, low-risk (non-oncogenic) genotypes 6 and 11 mainly cause genital warts (90%) and recurrent respiratory papillomatosis. High-risk (oncogenic) genotypes 16 and 18 are the main viruses responsible for most of the cervical precancerous lesions and cervical cancers. These genotypes also cause anal, oropharyngeal, vulval, vaginal, and penile cancers. It has been observed that nearly all cervical cancers are due to Human Papilloma Virus (HPV).

According to a prevalence study carried out by the Epidemiology unit, in Sri Lanka, the prevalence of HPV infection among married, asymptomatic women (aged 20-59 years) was identified as 3.3% and genotype 16 and 18 prevalence was found to be 1.2% in 2009. In Sri Lanka, the most prevalent genotypes in cervical cancers were 16 and 18, accounting for 69% of risk attribution in development of cervical cancer in which the global figure was 70%.

The Global strategy towards eliminating cervical cancer as a public health burden, adopted by the World Health Assembly in 2020, recommends a comprehensive approach to cervical cancer prevention and control. In order to eliminate cervical cancer all countries should reach and maintain an incidence rate below 4 per 100,000 women. Achieving the elimination target will rest on three key pillars as identified by the WHO.

1. Vaccination: 90% of girls get fully vaccinated by HPV by the age of 15
2. Screening: 70% of women screened using a high-performance test by the age of 35, and again by the age of 45
3. Treatment: 90% of women with pre-cancer, treated and 90% with invasive cancer managed

HPV vaccination

The Ministry of Health of Sri Lanka implemented HPV vaccination through National Immunization Program in the year 2017 with the aim of preventing and controlling cervical cancer incidence among women in Sri Lanka. Currently, two doses of recombinant quadrivalent HPV vaccine (effective against HPV types 6, 11, 16 and 18) is given to all grade 6 female students on completion of 10 years of age through school vaccination program. HPV vaccine is proven to be a safe and effective vaccine. It is recommended only for prophylactic use, thus effective if used in naive females.



Japanese Encephalitis

Japanese encephalitis (JE) is an infection of the central nervous system caused by a virus transmitted to man through mosquitoes. Less than 1% of human JE infections are manifested as encephalitis. JE is a major debilitating communicable disease among children age less than ten years, and consequences of contracting the disease are drastic. The case fatality rate is between 5-30%.. Nearly a half of the survivors of the disease suffer long term neuropsychiatric sequelae. Therefore, there is an enormous impact of the disease on the intellectual and productive capacity and the economy of a nation.

Japanese Encephalitis (JE) infection is one of the leading causes of viral encephalitis in Asia. The virus circulates in zoonotic cycles involving mosquitoes and several vertebrate species. Mosquito species namely *Culex tri-taeniorhyncus*, *Culex gelidus* are the principal vectors of Japanese encephalitis. Species of vector mosquitoes breed in rice fields, irrigation canals and water pools. In an urban setting, the vector can breed in contaminated water such as standing puddles, open sewers, fish ponds etc. In areas considered to be endemic for JE, up to 3% of the vector mosquitoes are infected with JEV. Pigs and shorebirds or waders serve as reservoirs and amplifying hosts. They are usually unaffected by the infection. Man is an incidental host of the JEV.

Immunity to JEV from previous vaccination or naturally acquired immunity reduces the risk of illness. Although most adults living in endemic areas have acquired natural immunity, adult visitors from non endemic to endemic areas are at risk of infection. Outdoor occupation and recreational exposure are also risk factors for infection.

Situation in Sri Lanka

The JE virus was first isolated in 1968 in Sri Lanka at the Medical Research Institute. The first major outbreak was experienced in 1984 (November) - 1985 (February) in the North Central Province (NCP) in Anuradhapura district. In this outbreak, a total number of 385 individuals were reported to have contracted JE and 64 of them died with a case fatality rate (CFR) of 17%. Outbreaks of JE were consistent with the rainy season in particular with the North-East monsoonal rains (November to February).

Prevention and Control

The strategy for prevention and control of JE includes major components such as awareness among general public on the prevention and control of the disease, vector control and immunization.

Based on empirical evidence, the Epidemiology Unit of the Ministry of Health, Sri Lanka initiated an immunization programme against JE on phase basis in 1988. Children in the age group of 1- 10 years living in high risk areas were the initial targets for immunization against JE. They were vaccinated with four doses of the inactivated JE vaccine during the inter-epidemic period. The results of the immunization campaign were far reaching.



The success of the immunization against JE in Sri Lanka is reflected in the fact that since 1988, incidence of JE has decreased drastically with the increased coverage of immunization. Since 2003, only sporadic JE cases have been reported from different parts of the country.

At present under the National Immunization Program in Sri Lanka, all children receive the live attenuated JE Vaccine (LJEV), at the completion of their first birthday (one year).