

Opinion

Volume 8 Issue 3 - February 2018
DOI: 10.19080/AIBM.2018.08.555737

Adv Biotech & Micro

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Polio Elimination in India-An Update



Anbalagan S and Sankareswaran M*

Department of microbiology, Muthayammal College of Arts & Science, India

Submission: February 23, 2018; **Published:** February 27, 2018

***Corresponding author:** Sankareswaran M, Department of microbiology, Muthayammal College of Arts & Science, Rasipuram-637408, Namakkal (DT), Tamilnadu, India, Email: sankarsankar87@gmail.com

Opinion

Poliomyelitis, often called polio or infantile paralysis is an acute infectious disease caused by polio virus, which was recorded in 1350 BC by Egyptians. Polio epidemic have crippled thousands of people, mostly young children's throughout their life. The disease has caused paralysis and death for much of human history. In 1840 Dr. Jacob Von Heine from Germany conduct the first systematic investigation of Poliomyelitis, may be contagious. In 1894 the first significant outbreak of infantile paralysis documented in United States. In 1916 polio epidemic outbreak out in New York 9000 cases and 2343 deaths. In 1948 Thomas Weller, John Enders and Frederick Robbins, grow the virus in live cells and received Nobel Prize in 1954, laid the foundation for vaccines against the polio. In 1955 Dr. Jonas Salk develops the first vaccine against an inactivated (killed) injectable polio vaccine (IPV Salk vaccine). In 1961 Dr. Albert Sabin develops the first Oral Polio Vaccine (OPV sabin vaccine) Live attenuated vaccine used in polio eradication.

Polio is caused by Polio Virus type 1,2,3. Single stranded RNA virus Natural or Wild Polio Virus (WPVS). The dreaded virus entered orally and reaches the intestines, it attacks the central nervous system through the blood stream and damage the cells and paralyse the victim (Young children).

Global eradication of an infectious disease illustrates the ultimate human mastery over a microbial pathogen. We have too successful precedents, small pox in humans and rinder pest in cattle, achieved through live vaccine. The next vaccine preventable human disease targeted as polio earlier known as infantile paralysis also recorded as bala-graha dosha in ancient Indian medical literature.

In 1988 the World Health Assembly resolved to eradicate polio globally by the year 2000 funded by WHO, Rotary International, and UNICEF. A Global Polio Laboratory Network (133 Laboratories). In 1988 India started Pulse Polio Immunization programme to eradicate polio.

For three decades the policy makers ignored Indian science on polio allowing over 3 million children paralyzed unnecessarily. These efforts have reduced the number of annual diagnosed

cases by 99% from an estimated 3, 50,000 cases in 1988 to a low of 1652 cases in 2007, in 2012 cases decreased to 223. A number of eradication milestones have already been reached and several regions of the world, have been certified Polio free. As of 2012 polio remains endemic in only three countries, Nigeria, Pakistan and Afghanistan. Since January 2011, there were no reported cases of the disease in India and hence in February 2012 the country was taken off the WHO list of polio endemic countries. It is reported that if there are no cases of polio in the country for two more years, it will be declared as a polio free country.

Two polio vaccines are used throughout the world to compact Poliomyelitis. The first was developed by Dr. Jonas Salk in 1955; it consists of an injected dose of inactivated (killed) polio virus. Injected Salk vaccine confers IgG mediated immunity in the blood stream, which prevents polio infection from progressing viremia and protects the motor neurons, then eliminating the risk of bulbar polio and post polio syndrome. The second type of vaccine Oral Polio Vaccine (OPV), developed by Dr. Albert Sabin Bruce in 1957 is a live attenuated vaccine, produced by the passage of the virus through non human cells at a sub physiological temperature, which produce spontaneous mutation in the viral genome. Although OPV considered being a superior agent employed in mass vaccination for effective prevention of polio, i.e. Pulse Polio Immunization programme. It has been noted as the last case in India was a ten months old baby in Beed District in Maharastra, India in July 2013 investigations attributed this to vaccine developed by Polio Virus type 2 (VDPV). This incident alarms the need for comprehensive and fool proof testing on the safety of oral vaccines and warrants a second thought if injectable vaccine is safer then oral vaccine.

In 26th March 2014, WHO declares India, is free from polio. The second viral disease eradicated from India next to Small Pox Virus, is success only by live vaccine (OPV). 24th October (every year) is declared as World Polio Day. Although polio was eradicated in India, the OPV was still included in immunization schedule to save the future generation of our Great Nation.

Let us pledge to safe guard the health of the children who are our future by standard procedures of WHO.



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DOI: [10.19080/AIBM.2018.08.555737](https://doi.org/10.19080/AIBM.2018.08.555737)

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