

One more step to bid Good Bye to Polio – Switch from t-OPV (trivalent- Oral Polio Vaccine) to b-OPV(bivalent – Oral Polio Vaccine)

Kedar Mehta¹, Paragkumar Chavda¹

¹Assistant Professor, Community Medicine Department, GMERS Medical College, Gotri, Vadodara, Gujarat.

Correspondence : Dr. Kedar Mehta, E mail: kedar_mehta20@yahoo.co.in

Poliomyelitis, a crippling infectious disease caused by any one of the three polioviruses – poliovirus type 1, type 2 or type 3. Vaccination of child against polio is the most effective and important preventive measure to fight against the occurrence of this disease. The battle against this disease is on and we are almost on the verge of eradication of this disease globally. So, meticulous and detailed planning is required at this juncture. Hence, Polio Eradication and Endgame Strategic Plan 2013-2018 has begun globally to break the chain of all poliovirus transmission and robust system for the lifesaving polio vaccine.^[1]

The vaccine t-OPV contains three poliovirus serotypes (type 1, 2 and 3) and this vaccine was used in almost 145 countries in routine immunization programs. It has helped in the eradication of wild poliovirus type 2 and the last case was seen in 1999. But, the type 2 component of t-OPV has not only lead to a rise in 90% of cVDPV(circulating Vaccine Derived Polio Virus) cases and nearly 40% of VAPP (Vaccine Associated Paralytic Poliomyelitis) cases globally but also interferes with the immune response to poliovirus types 1 and 3. Due to the risk of VDPV and VAPP, the goal is to stop the use of oral polio vaccines by 2020.^[2] However, the herd immunity is one of the important factors favoring OPV so the immediate shifting from OPV to IPV (Inactivated/Injectable Polio Vaccine) is not a safe strategy from the viewpoint of epidemiologists. Hence, the shift from OPV to IPV is to be done in phased manner.

The current focus is replacement of t-OPV with b-OPV in all countries using OPV. The vaccine b-OPV contains two polio serotypes; type 1 and type 3. Such replacement of t-OPV with b-OPV has to be done in routine immunization activities and also in SIAs

(Supplementary Immunization Activities) in all the countries simultaneously to ensure that no country is put at risk of importing cVDPV2 from another country that continues to use t-OPV. This action is already taken in April 2016 globally over a period of two week time as per the recommendations by WHO (World Health Organization).^[3]

Any risk with b-OPV? If so, what NEXT?

Such switch from t-OPV to b-OPV may impose risk of cVDPV type 2 leading to cVDPV type 2 outbreaks since the number of children susceptible to poliovirus type 2 will increase. This risk was already anticipated and as a part of risk mitigation strategy, it was already recommended by WHO to introduce at least one dose of IPV (inactivated polio vaccine) containing all 3 polioviruses (types 1,2 and 3) in all countries by end of 2015.^[3]

IPV introduction will help to reduce this risk of cVDPV 2 associated with the switch from t-OPV to b-OPV and also boost immunity to all three polioviruses types 1, 2 and 3. b-OPV will further continue to protect against transmission of Wild Polio Virus 1 and 3. At one stage, when all wild polio viruses will be fully eradicated, all Oral Polio Vaccines will be withdrawn.^[2]

Based on this rationale and these recommendations by Global Alliance for Vaccines and Immunization (GAVI) and WHO; Ministry of Health and Family Welfare, Government of India (GoI) has already carried out this action on 25th April 2016 National Switch Date and we have switched from t-OPV to b-OPV in the entire nation.^[4] After the switch date, only b-OPV is used both in routine immunization programs and SIAs including polio campaigns.

Take Home Messages

- For polio eradication end game strategy, all doses of OPV needs to be stopped.
- Immediate replacement of OPV by IPV is not wise decision, hence it has to be done in phased manner.
- Switch from t-OPV to b-OPV as type 2 is already eradicated.
- Simultaneous introduction of atleast one dose of IPV to mitigate the risk associated with switch from t-OPV to b-OPV.
- By 2020, goodbye to all OPVs and use of only IPV for protection against polio among children.

Polio eradication is difficult to achieve by the actions of Government alone. It is essential for various stakeholders to join hands for this mission. In my view point, private pediatricians and practitioners are also important key personnel to support this mission of polio eradication. Awareness

regarding such national initiative among them is very important which can be achieved by close liaison with associations like Indian Academy of Pediatrics (IAP) and Indian Medical Association (IMA). Together we can achieve this goal and will be able to witness the historical eradication of this disease Poliomyelitis in the coming years!

References:

1. Global Polio Eradication Initiative. FACT FILE: Polio Eradication and Endgame Strategic Plan 2013–2018. Available from: www.polioeradication.org/Home.aspx [2 Jan 2017]
2. World Health Organization. Preparing for the withdrawal of all oral polio vaccines (OPVs): Replacing trivalent OPV with bivalent OPV Frequently Asked Questions February 2015 Available from: http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/oral_polio_vaccine/OPVswitch-overview-FAQs-Feb2015.pdf [2 Jan 2017]
3. World Health Organization. Poliomyelitis. Available from: <http://www.who.int/immunization/diseases/poliomyelitis/en/> [2 Jan 2017]
4. World Health Organization Regional Office for South-East Asia. EPI Fact Sheet India 2016. Available from: <http://www.searo.who.int/entity/immunization/data/india.pdf> [2 Jan 2017]