

Alarm of Circulating Wild Poliovirus and Of Vaccine-Derived Poliovirus in Middle East Countries as a Potential Risk for Re-Emerging of Polio in Iran

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Dear Editor-in-Chief,

Poliomyelitis is a highly infectious viral disease which is mainly transmitted via contaminated food and drinking water by human feces, especially in situations of poor hygiene and sanitation (1). This disease is caused by 3 types of wild poliovirus (WPV) (types 1, 2 and 3), and immunity against one type does not create immunity against other types. In our country according National Immunization Program (2), inoculation 6 doses of oral polio vaccine (OPV) induce immunity for long time against poliomyelitis. The polio eradication was a largest public health innovation is organized by the World Health Organization (WHO), and enhanced routine immunization, adequate response to outbreaks and effective surveillance are the main strategies to reach this goal (3). The last laboratory-confirmed wild polio case in Iran was reported in 1997. From 1998 to 2000, cases were imported from Pakistan/Afghanistan of wild virus circulation. The last case was an imported case from Afghanistan in December 2000 and the circulation of wild poliovirus was stopped in December 2000 and Iran is known as a polio free country from 2001 (4). According WHO report up to 2017, WPV transmission was disrupted in all countries except Afghanistan, Pakistan and Nigeria (5). Although the AFP surveillance in Iran reached to high level and gained the polio-free certification through active surveillance (6), but the role of neighboring countries which can interrupted our achievement should not be ignored. In the following we discuss a bout situation of wild WPV transmission in our neighboring countries.

Key Words: Eradication, Iran, Polio, Re-emergence, Surveillance.

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As shown in **Figure.1**, all of 22 cases of WPV were belongs to Afghanistan and Pakistan, and 96 cases of Circulating Vaccine Derived Polio Virus (cVDPV) (VDPV isolates for which there is evidence of person-to-person transmission

in the community) were occurred in Syria and Central African countries. **Table.1** show from the beginning of 2018 to now (9 October), 15 and 4 cases of WPV were reported from Afghanistan and Pakistan, respectively.



Fig.1: Wild poliovirus type 1 and circulating vaccine-derived poliovirus cases worldwide (7).

Table-1: Countries with cases of wild poliovirus type 1 and circulating vaccine-derived poliovirus in Eastern Mediterranean region (7).

Country	Year to- date 2018		Total in 2017	
	WPV	cVDPV	WPV	cVDPV
Afghanistan	15	0	14	0
Pakistan	4	0	8	0
Syrian Arab republic	0	0	0	74

WPV: Wild Poliovirus; cVDPV: Circulating Vaccine Derived Polio Virus.

Civil war in Afghanistan, Iraq and Syria had a devastating impact on these countries, thousands of people have been killed and severely shaken the economy and the welfare of society. There are a huge yet unknown number of immigrants and illegal refugees living in suburbs of large cities in Iran, where low participation of families in vaccination services might be a challenge. However, since the disease is active in the two neighboring countries Afghanistan and Pakistan, the risk of re-emergence of wild polio virus due to importation is high. Unfortunately, polio 3 immunization coverage in these countries is insufficient and despite the polio 3 vaccine coverage of 99% in Iran in 2017, this coverage for Pakistan, Afghanistan and Syrian was 75%, 60% and 53%, respectively (8, 9).

CONCLUSION

As we know the last reported case of poliomyelitis in Iran was an imported case from Afghanistan and the circulation of WPV was stopped afterward in the country. Therefore, in order to continue polio eliminating in the country in the coming years it is important to pay special attention to neighboring countries. In this regard monitor the health of the border rivers with Afghanistan and Pakistan, monitoring vaccination of immigrants as well as underserved and hard-to-reach populations, strengthens AFP surveillance, and training on environmental sanitation and drinking healthy water is recommended.

CONTRIBUTION OF AUTHORS

All of authors Contributed equally to the conception, design of the work; and interpretation of data and Final approval of the article.

CONFLICT OF INTEREST

The author claimed no conflict of interest.

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