VACCINE-DERIVED POLIOVIRUSES IN UKRAINE

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According to The World Health Organization (WHO), since the withdrawal of type 2 oral poliovirus vaccine (OPV2) from routine immunization in 2016, there has been an increase in vaccine-derived poliovirus type 2 (VDPV2), related to a fall in population intestinal mucosal immunity to type 2 polioviruses in children born after April 2016 globally. This pronounced the polio Public Health Emergency to the International Concerns.

The risks of vaccine-derived polioviruses (VDPV) spreading in Ukraine has been the central aim of the study.

An analysis of the incidence of poliomyelitis in Ukraine and the level of vaccination of children over the past 10 years was carried out according to the data of the Public Health Center of Ukraine.

In October 2013, the WHO Independent Monitoring Board and the Global Polio Eradication Initiative included Ukraine in the "red" list of countries with the highest risk of poliomyelitis outbreaks.

In 2015, two cases of VDPV were confirmed in the regional reference laboratory of WHO, where feces of two children from the Zakarpattia region of Ukraine were analyzed. The children (aged 4 years and 10 months) were not vaccinated against polio and got infected by a paralytic form of poliomyelitis.

In 2021, a 17-months-old toddler was detected with acute paralysis caused by VDPV2 in the Rivne region along with 18 people who were in contact. All the positive isolates were similar to isolates circulating during the 2020-2021 cVDPV outbreak in Tajikistan.

In December 2021, the last case of paralysis caused by VDPV2 appeared, represented by a 2-years-old unvaccinated child from the Zakarpattia region.

An outbreak of polio in any country can only be prevented if at least 95 % of children are vaccinated. In Ukraine, the current level of vaccination is the lowest among the last 20 years. As a reference, in 2021 the vaccination against polio for children aged less than 1 years was only 80.1 % (68.5 % in the Zakarpattia region). Hence, the minimum requirements for prevention of polio are not achieved.

VDPV circulating occurs when scheduled or additional immunizations are not performed competently, rendering the population vulnerable to infection by both VDPV and wild strains. Consequently, the problem is not in the vaccine itself but in the inadequate vaccination. Thus, a comprehensively vaccinated population is protected against both the wild virus and VDPV.