VACCINE-ASSOCIATED PARALYTIC POLIOMYELITIS AND OTHER DISEASES WITH ACUTE FLACCID PARALYSIS SYNDROME IN BELARUS

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SUMMARY

According to the WHO global polio eradication initiative acute flaccid paralysis (AFP) surveillance has been conducted in Belarus since 1996. For the period 1996-2002, 295 AFP cases were reported. The main indices of AFP surveillance in Belarus met the WHO criteria. All AFP cases, with the exception of one, were virologically examined. Polioviruses (PV) were isolated from 28 (9.5%) of them. Results of intratypic differentiation (a neutralization test with type-specific monoclonal antibodies and a restriction fragment length polymorphism assay) proved vaccine origin of all isolated PV. According to the final classification, 11 AFP cases were classified as vaccine-associated paralytic poliomyelitis (VAPP). Nine VAPP cases were recipient [six of them developed after the first, two - after the third and one - after the fourth oral poliovirus vaccine (OPV) dose] and two cases in non-vaccinated children were classified as contact VAPP cases. PV of all three serotypes were isolated with an equal frequency from the recipient cases and only PV2 - from contact ones. Immunological investigations of children with VAPP showed that the majority of them had disorders in B-cell immunity. A risk of one VAPP case per 96,000 first OPV doses and per 745,000 distributed ones was estimated. The other 284 AFP cases were classified as AFP of non-polio etiology (non-polio AFP). Among them Guillain-Barré syndrome (118 cases, 41.5% of all non-polio AFP cases), traumatic neuritis (63 cases, 22.2%), transient monoparesis of limb (35 cases, 12.3%), myelitis (26 cases, 9.2%) were registered most frequently. Vaccine PV were isolated from 19 (6.7%) children with non-polio AFP, 28 (9.9%) children excreted non-polio enteric viruses. In contrast to VAPP, other AFP with PV isolation had no clinical picture typical of poliomyelitis, and had no any residual paralysis 60 days after the onset of paralysis. PV isolation from them seemed to be not related to the etiology of the disease, but was a mere coincidence of paralysis with the recent vaccination. Results of AFP surveillance supported the previous data on the absence of classical poliomyelitis cases caused by wild PV in Belarus for more than 35 years.

Key words: oral poliovirus vaccine, vaccine-associated paralytic poliomyelitis, acute flaccid paralysis

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