

AMERICAN ACADEMY OF PEDIATRICS

Committee on Infectious Diseases

Poliomyelitis Prevention: Revised Recommendations for Use of Inactivated and Live Oral Poliovirus Vaccines

ABSTRACT. Since 1997 when the American Academy of Pediatrics (AAP) issued revised guidelines for the prevention of poliomyelitis, substantial progress in global eradication of poliomyelitis has occurred and the use of inactivated poliovirus vaccine (IPV) has increased considerably in the United States with a corresponding decrease in the use of oral poliovirus vaccine (OPV). Surveys indicate that the majority of physicians now routinely immunize children with the sequential IPV-OPV or IPV-only regimens. Nevertheless, vaccine-associated paralytic poliomyelitis (VAPP) continues to occur, albeit infrequently, in children who have received the OPV-only regimen and their contacts. To reduce further the risk of VAPP, the AAP now recommends that children in the United States receive IPV for the first 2 doses of the polio vaccine series in most circumstances. Exceptions include a parent's refusal to permit the number of injections necessary to administer the other routinely recommended vaccines at the 2- and 4-month visits. Either IPV or OPV can be administered for the third and fourth doses. Assuming continuing progress toward global eradication, a recommendation of IPV-only immunization for children in the United States is anticipated by 2001.

ABBREVIATIONS. AAP, American Academy of Pediatrics; IPV, inactivated poliovirus vaccine; WHO, World Health Organization; OPV, oral poliovirus vaccine; CDC, Centers for Disease Control and Prevention; VAPP, vaccine-associated paralytic poliomyelitis.

BACKGROUND

In 1997, the American Academy of Pediatrics (AAP) issued guidelines for the expanded use of inactivated poliovirus vaccine (IPV) for the prevention of poliomyelitis.¹ Since then, progress in the World Health Organization (WHO)-sponsored program to eradicate poliomyelitis in the world has continued. In 1997, only 5160 cases were reported to WHO and the number of countries where wild-type poliovirus has been isolated has continued to decrease. In 1998, all countries with endemic poliomyelitis are conducting National Immunization Day campaigns to provide supplemental doses of oral poliovirus vaccine (OPV) to children from birth to 4 years of age. These campaigns have been highly successful in eliminating poliomyelitis in many countries. The WHO has established the target of the end of the year 2000 for global eradication. Public health experts are optimistic that this goal will be reached on schedule, although uncertainty remains,

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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especially in countries with political and economic instability.

New recommendations for polio immunization in the United States in 1997^{1,2} have resulted in increased use of IPV. According to biologics surveillance by the Centers for Disease Control and Prevention (CDC), IPV accounted for 29% of all poliovirus vaccine doses distributed in 1997 in contrast to 6% in the previous year. Distribution of OPV has correspondingly decreased. Recent surveys in Georgia and Wisconsin indicate that approximately two-thirds of physicians routinely are immunizing children with the sequential IPV-OPV regimen and that 10% to 15% of children are receiving only IPV (T. Saari, written communication, June 1998; J. Livengood, oral communication, October 1998). Implementing either the sequential or IPV-only schedule can require the administration of as many as 4 injections at both the 2- and 4-month well-child visits, but parents are accepting this increase in the number of injections and no increased risk of adverse events has been observed.³ In addition, childhood immunization rates in this country have not decreased during this time of additional injections.⁴

As of October 1998, 4 persons with vaccine-associated paralytic poliomyelitis (VAPP) have been reported in 1997–1998 in the United States. All 4 cases occurred in children or contacts of children who were immunized with only OPV. No cases of VAPP in children who have received the sequential IPV-OPV regimen or in their contacts have been identified.

CONCLUSION

As a result of substantial progress in global eradication of poliomyelitis, acceptance of IPV by physicians and parents despite additional injections, and the need to reduce further the risk of VAPP, the AAP now recommends that the first 2 doses of polio vaccine for routine immunization should be IPV in most circumstances (see "Recommendations" section). An IPV-only schedule for all doses also is acceptable and is the only means to eliminate the risk of VAPP in the community.

As previously noted in the 1997 AAP policy statement,¹ the IPV-only regimen likely will be recommended for all children in the near future, assuming continued progress toward global eradication of poliovirus infection. Vaccination will be continued thereafter for at least several years after the worldwide elimination of wild-type poliovirus has been confirmed.

RECOMMENDATIONS

1. IPV is routinely recommended in most circumstances for all children at 2 and 4 months of age

for the first 2 doses of the poliovirus vaccine schedule. Immunization with OPV is acceptable when parents refuse either IPV or the number of injections needed to administer the other recommended vaccines for infants.

2. In accordance with either the sequential or IPV-only regimen, OPV or IPV should be given at 6 to 18 months and 4 to 6 years of age for a total of 4 doses of polio vaccine administered before school entry. If OPV is to be given for the third and fourth doses, some experts recommend delaying the third dose until 12 months of age to minimize the chance of inadvertently administering OPV to a child with an underlying, unrecognized immunodeficiency.
3. Only IPV is recommended for the following: a) immunocompromised persons and their household contacts because OPV is contraindicated in these individuals; and b) infants and children in households with persons older than 17 years who are known to be inadequately vaccinated against poliomyelitis because of the increased risk of VAPP in susceptible adults.
4. For infants and children in whom the routine immunization schedule is not initiated until after 6 months of age and in whom an accelerated schedule is necessary to fulfill immunization recommendations, an OPV-only regimen is acceptable to minimize the number of injections at each visit.
5. For children who may be traveling to areas where wild-type poliovirus is still endemic, selection of IPV or OPV depends on the interval until departure and the number of doses of polio vaccine previously received. If a child who has not been previously immunized will be traveling in 2 months or more, 2 doses of IPV at a minimal interval of 1 month are recommended. OPV or IPV should be given subsequently to complete the schedule. If the child will be traveling in less than 2 months and has not received prior doses, a single dose of either OPV or IPV should be given and the immunization schedule should be continued after arrival in the foreign country. For children who already have received 2 doses of IPV, administration of 2 doses of OPV at an interval of at least 1 month will provide optimal intestinal immunity. In all cases, children who have not completed the immunization schedule by the time of departure should do so as soon as possible, including receiving vaccinations in a foreign country, if necessary.
6. If an outbreak of wild-type poliovirus infection occurs in the United States, OPV is the vaccine of choice to control most effectively the spread of infection. The AAP supports the need for sufficient federal resources to ensure an adequate supply of OPV for outbreak control in such a public health emergency.
7. As with administration of all vaccines, parents and other caregivers should be informed of the benefits and risks of the different poliovirus vaccines and regimens, including the risk of VAPP from OPV. The Vaccine Information Statement on polio vaccines should be provided as required by law.⁵ Current information statements can be obtained from

the AAP Division of Publications, state health department immunization program,⁴ or the CDC Web site (www.cdc.gov/nip/vistable.htm).

8. Precautions and contraindications in the administration of IPV and OPV remain unchanged from previous recommendations given in the current (1997) edition of the *Red Book: Report of the Committee on Infectious Diseases*.⁶
9. The AAP continues to support the WHO recommendation for the use of OPV to achieve global eradication of poliomyelitis, especially in countries with continued or recent circulation of wild-type poliovirus.

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