

Scientific Committee on Vaccine Preventable Diseases

Recommendations on updated childhood immunisation programme containing inactivated poliovirus and acellular pertussis vaccines

The Scientific Committee on Vaccine Preventable Diseases (2006) made the following recommendations concerning the replacement of oral poliovirus vaccine (OPV) and whole-cell pertussis (wP) vaccine by inactivated poliovirus vaccine (IPV) and acellular pertussis (aP) vaccine respectively in the childhood immunisation programme in Hong Kong.

Rationale

2. OPV is currently used in the local childhood immunisation programme. This vaccine has contributed to the successful eradication of poliomyelitis in Hong Kong. However, OPV has been known to be associated with a rare complication known as vaccine-associated paralytic poliomyelitis (VAPP), occurring in about one in 2.4 million OPV vaccine recipients. VAPP has not been associated with IPV. IPV has similar protective efficacy as OPV against poliomyelitis. Reactions with IPV are mild, usually comprising local reactions such as erythema (0.5–1%), induration (3–11%) and tenderness (14–29%). With poliomyelitis eradication achieved in the Western Pacific Region in 2000, as well as the gradual recession of the poliomyelitis outbreak in Indonesia towards the end of 2005, the Scientific Committee is of the view that the risk of VAPP now outweighs the risk of acquiring poliomyelitis due to wild poliovirus importation. Hence, the Scientific Committee recommends that OPV be replaced by IPV in the local



childhood immunisation programme, and that the birth dose of OPV-Type 1 be abolished in the current immunisation programme.

3. A whole-cell pertussis (wP) vaccine (in a combined preparation with diphtheria and tetanus vaccine called DTwP) is currently used in the local childhood immunisation programme. A primary series of three doses of DTwP vaccine plus one booster is 70%-90% effective in preventing serious pertussis disease. In recent years, an alternative acellular pertussis vaccine (in a combined preparation with diphtheria and tetanus vaccine called DTaP) has been developed and is widely used in many countries. DTaP vaccine has similar efficacy and duration of protection as DTwP vaccine. DTaP is reported as being associated with a lower incidence of vaccine reactions (e.g., local pain, redness and swelling) than DTwP. Furthermore, production of DTwP has decreased in recent years and supplies have become unstable. In view of the above, the Scientific Committee recommends that DTwP vaccine be replaced by DTaP vaccine in the local immunisation programme. Additional acellular pertussis vaccine will be given to both Primary One and Six students for extra protection.

4. The Scientific Committee recommends combined diphtheria, tetanus, pertussis and inactivated poliovirus vaccines be used in the updated childhood immunisation programme, so that children are vaccinated only once during an immunisation visit. The vaccination schedule is 2 months, 4 months, 6 months, 18 months, Primary 1 and Primary 6. Type I OPV at birth will cease.

5. Whenever possible, the same DTaP product should be used for all doses in the primary series. If the same product is not available, DTaP vaccines can be used interchangeably. For children who have started the vaccination series with one, two, three or four doses of DTwP, combined vaccines with acellular pertussis component are recommended for all remaining doses in the schedule. IPV can be given following any doses of OPV.

Recommended Vaccine Composition and Use

The following table summarized the original and the updated childhood immunisation schedule recommended:

Original Immunisation Recommended		Updated Immunisation Recommended	
Age	Immunisation	Age	Immunisation
Newborn	B.C.G. Vaccine Hepatitis B Vaccine - First Dose Polio Type I Vaccine	Newborn	B.C.G. Vaccine Hepatitis B Vaccine - First Dose
1 month	Hepatitis B Vaccine – Second Dose	1 month	Hepatitis B Vaccine - Second Dose
2-4 months	DTwP Vaccine - First Dose Polio Trivalent Vaccine - First Dose	2 months	DTaP-IPV Vaccine – First Dose
3-5 months	DTwP Vaccine - Second Dose	4 months	DTaP-IPV Vaccine – Second Dose
4-6 months	DTwP Vaccine - Third Dose Polio Trivalent Vaccine – Second Dose	6 months	DTaP-IPV Vaccine – Third Dose Hepatitis B Vaccine - Third Dose
6 months	Hepatitis B Vaccine - Third Dose		
1 year	MMR Vaccine - First Dose	1 year	MMR Vaccine - First Dose
1½ years	DTwP Vaccine - Booster Dose Polio Trivalent Vaccine - Booster Dose	1½ years	DTaP-IPV Vaccine – Booster Dose
Primary 1	MMR Vaccine - Second Dose DT Vaccine - Booster Dose Polio Trivalent Vaccine - Booster Dose	Primary 1	MMR Vaccine - Second Dose DTaP-IPV Vaccine – Booster Dose
Primary 6	dT Vaccine - Booster Dose Polio Trivalent Vaccine - Booster Dose	Primary 6	dTap-IPV Vaccine – Booster Dose

Remarks:

DTwP Vaccine: Diphtheria, Tetanus & whole cell Pertussis Vaccine

DTaP-IPV Vaccine: Diphtheria, Tetanus, acellular Pertussis & Inactivated Poliovirus Vaccine

dTap-IPV Vaccine: Diphtheria, Tetanus, acellular Pertussis (reduced dose) & Inactivated Poliovirus Vaccine

DT Vaccine: Diphtheria & Tetanus Vaccine

dT Vaccine: Diphtheria & Tetanus Vaccine (reduced dose)

MMR Vaccine: Measles, Mumps & Rubella Vaccine

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