



衛生防護中心
Centre for Health Protection

Scientific Committee on Vaccine Preventable Diseases

Recommendations on the use of 15-valent Pneumococcal Conjugate Vaccine (PCV15) and 20-valent Pneumococcal Conjugate Vaccine (PCV20) in Hong Kong (As of 27 September 2023)

Background

Recap of recommendations on pneumococcal vaccination as of September 2023

The Scientific Committee on Vaccine Preventable Diseases (SCVPD) recommended children to receive 13-valent pneumococcal conjugate vaccine (PCV13), with 2 primary doses given at 2 and 4 months followed by a booster dose at 12 months (2p+1 schedule), under the Hong Kong Childhood Immunisation Programme (HKCIP).

2. For elders 65 years of age and older, the SCVPD recommended either a single dose of PCV13 or a single dose of 23-valent pneumococcal polysaccharide vaccine (23vPPV). For high-risk individuals aged 2 years or above, SCVPD recommended a single dose of PCV13, followed by a single dose of 23vPPV 1 year later.



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15-valent pneumococcal conjugate vaccine (PCV15) and 20-valent pneumococcal conjugate vaccine (PCV20)

3. A 15-valent pneumococcal conjugate vaccine (PCV15) and a 20-valent pneumococcal conjugate vaccine (PCV20) were registered in Hong Kong in September 2022 and April 2023 respectively for prevention of invasive pneumococcal disease (IPD). PCV15 has been approved for use in individuals aged 6 weeks and above while PCV20 has been approved for use in individuals 18 years of age and older.

4. PCV15 contains capsular antigens of 15 serotypes of *Streptococcus pneumoniae* (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F). PCV20 contains capsular antigens of 20 serotypes of *Streptococcus pneumoniae* including 15 serotypes in common with PCV15 and 5 additional serotypes (8, 10A, 11A, 12F and 15B). Both PCV15 and PCV20 have all the 13 capsular antigens contained in PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F).

5. Available immunogenicity data from overseas clinical trials in children and adults showed that PCV15 generally met the non-inferior criteria compared to PCV13, with consistently higher immunogenicity against serotype 3. PCV20, when compared with PCV13 in adults and children, has generally lower immunogenicity, including those against serotype 3. There is no vaccine efficacy or real world vaccine effectiveness data available for both PCV15 and PCV20.

6. The safety and reactogenicity profile of PCV15 and PCV20 is generally comparable to PCV13, when given alone or in series with 23vPPV (for PCV13/15), according to available clinical trials. The most common adverse reactions of PCV15 observed in children less than 2 years old are fever, irritability, somnolence and injection-site pain while injection-site pain, fatigue, myalgia and headache are the commonest in adults. For PCV20, irritability, drowsiness, injection-site reactions, decreased appetite and fever are the most frequently observed adverse reactions in children less than 2 years old while those observed in adults are injection-site pain, muscle pain, fatigue and headache.

Local epidemiology of invasive pneumococcal disease

7. In Hong Kong, the number of IPD cases dropped significantly during COVID-19 pandemic in 2020 to 2022, but increased in 2023 at a level lower than pre-COVID era. The annual incidence of IPD ranged from 2.22 to 2.58 per 100,000 from 2015 to 2019, and dropped to 0.34-0.63 per 100,000 in 2020 to 2022 and increased to 1.25 per 100,000 person-year in 2023 (as of June annualized incidence). The incidence remained higher among children aged 2 to 4 years (0.68-15.93 per 100,000) and adults 65 years of age and older (0.92-6.83 per 100,000) during 2015 to 2022. As of June 2023, the annualized incidence in children aged 2 to 4 years is 4.52 per 100,000 person-year while that in adults 65 years of age and older is 2.20 per 100,000 person-year.

8. Among IPD cases of all ages reported from 2015 to June 2023, majority of cases were serotype 3 (46%) followed by serotype 19A (7%) and serotype 14 (6%). Serotype 3 accounted for a higher proportion among paediatric IPD cases (about 65%). Non-PCV13 (i.e. PCV15/PCV20/23vPPV additional to PCV13) serotypes and non-vaccine serotypes constitute about 10% and 17% respectively of all IPD cases during 2015 to June 2023.

Recommendations

9. Having reviewed the scientific data of PCV15 and PCV20, it is considered that the safety profiles of the three PCVs (PCV13, PCV15 and PCV20) are comparable, and both PCV15 and PCV20 should confer an overall non-inferior protection against IPD serotypes covered by PCV13.

10. Compared to PCV13/PCV20, PCV15 induced higher immunogenicity against serotype 3 which may potentially be more effective in preventing IPD caused by serotype 3, although further evidence on clinical effectiveness and impact is still pending.

11. Taking into consideration of available scientific evidence and local situation, PCV15 is recommended to replace PCV13 for use in the Childhood Immunisation Programme of Hong Kong and the Government pneumococcal vaccination programme. Related immunisation schedules in children and high-

risk individuals would remain unchanged. PCV15 can be used as a direct replacement for PCV13 at any point during the course of immunisation.

12. As for PCV20, individuals may choose to receive the vaccine to protect themselves against IPD following manufacturer's recommendation and upon discussion with healthcare professionals.

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