

PNEUMOCOCCAL VACCINES

Use

Two vaccines are now available offering protection from some, but not all, forms of pneumococcal meningitis, septicaemia, pneumonia and otitis media. Universal availability might prevent 400,000 deaths a year.

Pneumococcal infection

A range of serious bacterial infections are caused by the encapsulated Gram positive coccus *Streptococcus pneumoniae*; 84 capsular forms have been identified, but 8–10 of these are responsible for 85% of the cases currently seen in the UK. It often causes community acquired pneumonia, and is now the commonest cause of lethal or disabling bacterial meningitis. Patients with impaired immunity are at particular risk. Penicillin remains the drug of choice except in areas where the minimum inhibitory concentration for penicillin is now > 2 µg/ml.

Infants at **high risk** include those with homozygous sickle cell disease, with no spleen (or a poorly functioning spleen), or with congenital or acquired immunodeficiency (including HIV infection). Such patients should be offered prophylactic antibiotics (see the monograph on immunisation), because the current vaccines only offer protection from *some* of the capsular types of pneumococcal infection. They may also benefit from being given the multi-valent plain polysaccharide vaccine when two years old, and such immunisation should also be offered to patients two weeks ahead of any planned splenectomy or chemotherapy.

Products

Plain polysaccharide vaccine: An unconjugated vaccine, active against 23 of the more commonly encountered capsular types of pneumococcal infection, has been available for some years. Because this vaccine offers relatively little protection when given to children under two years old, it has generally only been offered to adults, and to older children considered to be at particularly high risk of infection.

New conjugate vaccine: A new 7-valent protein-polyaccharide vaccine (active against the 4, 6A, 6B, 9V, 14, 18C, 19F and 23F strains) was first licensed for use in young children in 2000. Its use caused a 70% decrease in invasive pneumococcal disease in young in three years. Cases due to vaccine-related serotypes fell by almost 80%, but serotypes not covered by the vaccine are now becoming commoner.

Contra-indications

Avoid immunisation during an acute infection, and while pregnant. Patients already immunised with the plain 23-valent vaccine (or the earlier 12- or 14-valent vaccines) do not need to be re-immunised with the present 23-valent vaccine for 3–5 years.

Interactions

The conjugate vaccine can be given (into a different limb) at the same time as any other childhood vaccine, but parents who seem unhappy at the thought of their child facing more than one 'needle' at a single clinic visit can, if necessary, be offered a different, staged, plan. The plain vaccine should not be given until at least 8 weeks after the new conjugate vaccine has been given. Anaphylaxis is extremely unlikely – its management is discussed in the monograph on immunisation.

Administration

Conjugate vaccine: Young children who have not yet started their primary course of immunisation should be offered three 0.5 ml doses of the new conjugate 7-valent vaccine. Children in the UK are offered this when 2, 4 and 13 months old, and the WHO has now made use a priority in all countries where mortality is high.

Plain vaccine: High risk children (see above) who are 2 or more years old should still be offered a single 0.5 ml deep intramuscular injection of the plain 23-valent vaccine, because it provides broader protection from pneumococcal infection.

Documentation

Record what has been given in the child's own personal child health record (red book), and keep the community child health department informed of all immunisation procedures.

Supply

0.5 ml vials of the plain polysaccharide vaccine (Pneumovax[®] or Pnu-Imune[®]) cost £10. 0.5 ml vials of the conjugate vaccine (Prevenar[®]) cost £39 (but are available cheaper on the NHS). Always store at 4°C.

References

See also the relevant Cochrane reviews and UK guidelines © ⊗

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