**Author(s):** SAGE working group on PPV23

**Date:** 2008-06-27

**Question:** Is PPV23 efficacious against invasive pneumococcal disease (IPD) in high risk groups (excluding HIV infected individuals)?

**Settings:** Global

**Conclusion:** Low quality evidence of a lack of effectiveness of PPV23 against IPD in high risk groups, acknowledging the variability both between the high risk groups and of the observed effectiveness in these groups.

<table>
<thead>
<tr>
<th>No of studies</th>
<th>Design</th>
<th>Limitations</th>
<th>Inconsistency</th>
<th>Indirectness</th>
<th>Imprecision</th>
<th>Other considerations</th>
<th>Quality</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPD</td>
<td>6 RCTs (Leech 1987, Simberkoff 1986; Klastersky 1986, John 1984, Davis 1987 and Alfageme 2005) and 3 observational studies (Benin 2003, Shapiro 1984 and Shapiro 1991). Only studies mentioned and retained by at least one of two recent meta-analysis (Moberley et al or Scott et al) are included. The study by John et al included 242 children aged 6 months to 3 years for whom this vaccine is not licensed. No events detected in Alfageme study.</td>
<td>randomised trial</td>
<td>serious¹</td>
<td>serious²</td>
<td>no serious indirectness³</td>
<td>no serious imprecision³</td>
<td>none</td>
<td>⊙⊙OO</td>
</tr>
</tbody>
</table>

¹ Most studies suffered problems of allocation concealment and in some the blinding process was unclear.

² The results of RCTs go in opposite directions; 2 showing a protective effect, and 3 a negative effect, all non significant. Summary OR in excess of 1 and non significant. Effectiveness in observational studies varied from 21% to 77%, with wide confidence limits. Serious quality deficiencies of the observational studies. Variety of immune deficits in the different studies. The highest risk groups, i.e. those most likely to suffer immune deficits, seem to respond less well to the vaccine.

³ RCTs used 14, 17, and 23 valent vaccines.

⁴ Each study with substantial imprecision. Only 8 events in total in vaccinated groups in RCTs and 5 in unvaccinated groups.

**Bibliography:**


