Question: Is PPV23 efficacious against invasive pneumococcal disease in populations ≥ 65 years of age?

Settings: Global

Conclusion: Moderate quality evidence to support effectiveness of PPV23 against IPD in elderly populations.

<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>
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</thead>
<tbody>
<tr>
<td>Invasive pneumococcal disease</td>
<td>randomized trial</td>
<td>serious</td>
<td>no serious inconsistency$^2$</td>
<td>no serious indirectness$^3$</td>
<td>no serious imprecision$^3$</td>
<td>none</td>
<td>⊕⊕⊕Ο</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

1 Six RCTs (Simberkoff 1986, Örtqvist 1998; Honkanen 1999; Alfageme 2005; Gaillat 1985, and Kaufman 1947) and 4 observational studies (Dominguez 2005; Jackson 2003; Shapiro 1984 and Vila-Corcoles 2006). Trials looked at different vaccine valencies. Only studies mentioned and retained by at least one of two recent meta-analyses (i.e. Moberley et al. or Scott et al.) are included.

2 Some problems with blinding and concealment of allocation. Major quality problem with the largest study (Kaufman et al. 1947) in terms of randomization and blinding.

3 No major inconsistency, but variable levels of protection found, possibly explained in part by different methodological quality of the studies. Observational studies are consistent with RCTs.

4 Studies assessed 2, 3, 14 and 23 valent vaccines. Key studies assessed 2 and 3 valent vaccines with double the concentration of polysaccharide. Valency may affect efficacy due to possible interference. Varying definitions of the term “elderly,” and some studies included younger populations.

5 Only 54 events (12 after excluding the study by Kaufman et al). Total of 22,449 vaccinees (16,699 without Kaufman et al ) and 20,647 unvaccinated (15,494 without Kaufman). The large study by Kaufman drives the confidence limits. If this study is removed, as suggested by Scott et al., the OR would be .33 (95% CI .11-.96).

Bibliography:


Kaufman, P., Studies on old age pneumonia. II. Prophylactic effect of pneumococcus polysaccharide against pneumonia. Archives of Internal Medicine, 1941. 61: p. 304-319.


