Review: omalizumab reduces asthma exacerbations and daily steroid use


Clinical impact ratings GP/FP/Primary care ★★★★★★★ IM/Ambulatory care ★★★★★★★★

Respirology ★★★★★★★★★★★★

Q In patients with asthma, how effective is omalizumab, a recombinant humanised monoclonal antibody, in reducing asthma exacerbations and steroid use?

METHODS

Data sources: searching Cochrane Airways Group trials register, scanning the reference lists of relevant studies and review articles, reviewing abstracts presented at leading respiratory society meetings, contacting pharmaceutical companies manufacturing anti-immunoglobulin E (IgE) formulations, and contacting experts in the field.

Study selection and assessment: randomised controlled trials comparing anti-IgE at any dose or route with placebo or conventional treatments in children and adults with chronic asthma.

Outcomes: reduction or termination of steroid use and asthma exacerbations (hospital admissions, emergency department visits, days lost from work or school, unscheduled physician visits, and increase in medication).

MAIN RESULTS

8 blinded, placebo controlled trials of fair to high quality met the inclusion criteria (n = 2037). Omalizumab was administered by inhaler in 1 trial, intravenously in 3 trials, and subcutaneously in 4 trials. Results were reported for the stable steroid phase and the steroid reduction phase. During these phases, fewer patients who received omalizumab had ≥1 asthma exacerbation (table). During the steroid reduction phase, more patients who received omalizumab discontinued inhaled steroid use or had >50% reduction in use (table). In both phases, patients who received omalizumab required less rescue medication and had fewer asthma symptoms (p < 0.05).

The 1 trial of inhaled omalizumab showed no difference from placebo in the outcomes measured.

CONCLUSION

In patients with asthma, intravenous or subcutaneous omalizumab reduces exacerbations when used as adjunctive or steroid sparing therapy and reduces inhaled steroid use.

Abstract and commentary also appear in ACP Journal Club.

For correspondence: Dr S Walker, National Respiratory Training Centre, Warwick, UK. s.walker@nrtc.org.uk

Source of funding: Garfield Weston Foundation UK.

Omalizumab vs placebo for chronic asthma at up to 24 weeks*

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Number of trials</th>
<th>Steroid phase</th>
<th>Weighted event rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥1 exacerbation</td>
<td>3</td>
<td>Stable steroid</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steroid reduction</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Omalizumab</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Placebo</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RR (95% CI)</td>
<td>46% (33 to 57)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NNT (CI)</td>
<td>9 (7 to 13)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steroid withdrawal</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steroid reduction</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Omalizumab</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Placebo</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RR (95% CI)</td>
<td>85% (58 to 116)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NNT (CI)</td>
<td>35 (26 to 45)</td>
</tr>
<tr>
<td></td>
<td>Steroid reduction</td>
<td>76%</td>
<td>5 (5 to 7)</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary; RRR, RBI, NNT, and CI calculated from data in article using a fixed effects model.
Review: omalizumab reduces asthma exacerbations and daily steroid use

_Evid Based Med_ 2004 9: 17
doi: 10.1136/ebm.9.1.17

Updated information and services can be found at:
[http://ebm.bmj.com/content/9/1/17](http://ebm.bmj.com/content/9/1/17)

These include:

**References**
This article cites 2 articles, 0 of which you can access for free at:
[http://ebm.bmj.com/content/9/1/17#BIBL](http://ebm.bmj.com/content/9/1/17#BIBL)

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections
- Asthma (154)
- Immunology (including allergy) (571)
- Clinical trials (epidemiology) (1594)

**Notes**

To request permissions go to:
[http://group.bmj.com/group/rights-licensing/permissions](http://group.bmj.com/group/rights-licensing/permissions)

To order reprints go to:
[http://journals.bmj.com/cgi/reprintform](http://journals.bmj.com/cgi/reprintform)

To subscribe to BMJ go to:
[http://group.bmj.com/subscribe/](http://group.bmj.com/subscribe/)