

Mepolizumab almost halves exacerbations in patients with severe asthma

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The largest study of patients with severe asthma to date, published in the *Lancet* special issue on respiratory medicine, shows that those treated with the monoclonal antibody mepolizumab experienced an almost 50 percent reduction in severe exacerbations, emergency room visits, and hospitalizations compared with patients given placebo.

"Mepolizumab is potentially an important advance because it seems to be a safe and effective treatment option for patients with eosinophilic asthma that is associated with frequent flare-ups, and may reduce the need for conventional treatment with oral corticosteroids that can have serious side effects including osteoporosis, [high blood pressure](#), and impaired growth in children", explains Ian Pavord from University Hospitals of Leicester NHS in the UK who led the research.

About a third of individuals with severe asthma have eosinophilic asthma in which [inflammatory cells](#) called eosinophils cause inflammation of lung airways. Mepolizumab works by blocking the production of eosinophils and has been shown to reduce the frequency of [asthma exacerbations](#) and the need for steroids in two small proof-of-concept studies.

In this study, 621 severe [asthmatics](#) with signs of eosinophilic inflammation from 81 centres in 13 countries were randomly assigned to either one of three doses of intravenous mepolizumab (75 mg, 250mg, or 750mg) or placebo on a monthly basis for 12 months.

After a year of treatment, the rate of clinically significant exacerbations—defined as episodes requiring oral corticosteroids, admission or visit to emergency department—in the mepolizumab groups was around half that of the placebo group (1.24, 1.46, and 1.15 vs 2.40 per patient per year).

Interestingly, the authors point out that although mepolizumab was effective in reducing exacerbations it failed to produce consistent improvements in symptoms or lung function, adding that, "a dissociation between symptoms and risk of exacerbations probably exists in patients with severe asthma and suggests that they represent separate aspects of the disorder that require different management strategies."

Overall, the frequency of serious adverse events was similar across the treatment groups, the most common being headache and nasopharyngitis (inflammation of the nasal passages). Three patients died during the study, but none of the deaths were related to treatment.

In a linked Comment, Simone Hashimoto and Elisabeth Bel from the University of Amsterdam in The Netherlands say, "These effects are very promising, and raise hope for many patients for whom no effective drugs without significant adverse effects are available today."

They add, "The next step will be to assess the steroid-sparing effects of mepolizumab in a large population of patients who are oral corticosteroid-dependent.... It would be ideal if anti-IL-5 treatment not only reduced the number of exacerbations, but also facilitated the tapering of [oral corticosteroids](#), thereby preventing serious steroid-induced side effects."

More information: [www.thelancet.com/journals/lan.../s0140-6736\(12\)60988-X/abstract](http://www.thelancet.com/journals/lan.../s0140-6736(12)60988-X/abstract)

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