

Long-term antibiotic use for some with COPD

May 24 2016, by From Mayo Clinic News Network, Mayo Clinic News Network

Dear Mayo Clinic: I have chronic obstructive pulmonary disease (COPD), and my doctor is recommending an antibiotic drug long term. Why is this needed?

A: For certain people with COPD, long-term use of an [antibiotic drug](#) - specifically [azithromycin](#) (Zithromax) - is a fairly new option to reduce exacerbations. Exacerbations are episodes when symptoms of COPD become worse than their usual day-to-day variation. Some exacerbations may be caused by a viral or bacterial infection. An exacerbation, if severe, can lead to hospitalization and even respiratory failure and death.

For people with COPD, short-term use of antimicrobials - antibiotics and antiviral agents - can help fight respiratory infections, such as acute bronchitis, pneumonia and influenza, and be used as part of the treatment of an exacerbation. A 2011 study indicated that long-term, continued use of azithromycin helps prevent COPD exacerbations - even for those who don't have an active respiratory infection. In addition to its antibacterial effects, azithromycin has anti-inflammatory and immune-modulating effects that likely contribute to its ability to improve COPD management.

The study included people who had COPD with an increased risk of exacerbations, most of whom already were taking other medications to prevent exacerbations. Among those who took azithromycin daily for a year, the risk of having an exacerbation declined by about 27 percent,

compared to those who took an inactive substance (placebo).

There are five classes of medications that may be used to help prevent COPD exacerbations. The classes include the antibiotic azithromycin. The other classes are inhaled corticosteroids, long-acting beta agonists, long-acting muscarinic antagonists, and phosphodiesterase-4 inhibitors. It's common for more than one of these to be used at the same time, and there are multiple inhalers that combine two of these agents.

Azithromycin isn't often the first drug prescribed for [exacerbation](#) prevention, but it may have an important role for some people with COPD.

One potential side effect of long-term azithromycin is hearing loss. In addition, people with a certain electrocardiogram abnormality - a prolonged QT interval - shouldn't take azithromycin. Also, there appears to be a slightly increased risk of death due to heart rhythm problems associated with use of azithromycin. There also is controversy regarding the risk of antibiotic-resistant bacteria with long-term use of azithromycin.

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Citation: Long-term antibiotic use for some with COPD (2016, May 24) retrieved 25 April 2024 from <https://medicalxpress.com/news/2016-05-long-term-antibiotic-copd.html>

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