

Prophylactic antibiotic therapy effective for chronic obstructive pulmonary disease

Clinical Question	How effective are prophylactic antibiotics given continuously (every day), intermittently (three times per week) or pulsed (e.g. for five days every eight weeks) in reducing the frequency of exacerbations and improving quality of life in chronic obstructive pulmonary disease (COPD)?
Bottom Line	Use of prophylactic macrolide antibiotics for a period of up to 12 months reduced the number of patients with one or more exacerbations (NNTB=8), exacerbation frequency, increased the median time to first exacerbation and improved health-related quality of life. Benefits appeared to be driven by continuous and intermittent macrolide regimens, with pulsed regimens being less effective. Use of antibiotics did not significantly affect the number of deaths due to any cause, the frequency of hospitalisation, or the loss of lung function during the study period. The antibiotics investigated were azithromycin, erythromycin, clarithromycin, roxithromycin, doxycycline and moxifloxacin. On average, the people involved in the studies were 65 to 72 years old and had moderate or severe COPD.
Caveat	The benefits need to be balanced against the risk of harm, notably antibiotic resistance, and the cost and adherence implications for the patient and the health care system, as well as potential costs of monitoring for adverse effects.
Context	COPD could become the third leading cause of death worldwide by 2020. Exacerbations, usually associated with infection, may lead to further irreversible loss of lung function, as well as days off work, hospital admission, reduction in quality of life, or even death.
Cochrane Systematic Review	Herath SC et al. Prophylactic antibiotic therapy for chronic obstructive pulmonary disease. Cochrane Reviews, 2019, Issue 10. Art. No.: CD009764.DOI: 10.1002/14651858.CD009764.pub3. This review contains 14 studies involving 3,932 participants.

Pearls No. 634, June 2019, written by Brian R McAvoy. C2

Systematic review link:

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009764.pub3/full>