

## April 2012 Pulmonary Journal Club

**Johnston SL, Blasi F, Black PN, Martin RJ, Farrell DJ, Nieman RB; TELICAST Investigators. The effect of telithromycin in acute exacerbations of asthma. *N Engl J Med* 2006;354:1589-1600.**

Acute asthma exacerbations are typically treated with inhaled beta agonists, inhaled anticholinergics, and systemic glucocorticoids. There has been minimal evidence for the use of antibiotics in treating acute asthma exacerbations including only 2 small placebo-controlled studies that demonstrated no benefit.

The Telithromycin, Chlamydia, and Asthma Trial (TELICAST) was a double-blinded, randomized, placebo-controlled study to determine the effect of telithromycin in patients with acute asthma exacerbations in addition to standard therapy. Of the 278 patients who were enrolled, 270 underwent randomization to receive placebo (136 participants), or telithromycin (134 participants) for 10 days of therapy which was initiated within 24 hours after initial presentation. The investigators found improvement of symptoms in the telithromycin group (40.4% reduction vs. 26.5%,  $p=0.005$ ), however, there was no difference in peak expiratory flow rates (78.3 L per minute vs. 66.8 L per minute,  $p=0.28$ ). There was also a reduction in the asthma symptom score (51.1% vs. 28.5%,  $p=0.003$ ) and an improvement in the FEV<sub>1</sub> (0.63 L vs. 0.34 L,  $p=0.001$ ) after 10 days of treatment. Patients infected with *C. pneumoniae*, *M. pneumoniae*, or both in the telithromycin group had greater improvement in their FEV<sub>1</sub> (0.67 vs. 0.38,  $p=0.002$ ), while those without these infections had no statistically significant improvement in their FEV<sub>1</sub> (0.58 L vs. 0.46 L,  $p=0.486$ ). Nausea was a common symptom in the telithromycin group as well as mild liver enzyme elevation in 2 patients.

This study demonstrates the possible benefits of treating acute asthma exacerbations with antibiotics, suggesting treating atypical bacteria may result in an improvement of symptoms and lung function. Given conflicting data on this topic further study is needed to duplicate these results in addition to determining whether these results are due to the antimicrobial activity or immunomodulatory effects of macrolides. This may be challenging due to the inherent difficulty in isolating atypical respiratory organisms. When treating acute asthma exacerbations the use of macrolides in addition to standard therapy warrants consideration.

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