Medical Xpress

Azithromycin may provide benefit for treatment of respiratory disorder

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Among patients with the lung disorder non-cystic fibrosis bronchiectasis, treatment with the antibiotic azithromycin resulted in improvement in symptoms but also increased the risk of antibiotic resistance, according to a study appearing in the March 27 issue of *JAMA*.

Bronchiectasis is characterized by abnormal widening of the bronchi (air tubes that branch deep into the lungs) and can cause recurrent lung infections, a disabling cough, shortness of breath, and coughing up blood. "If progressive, this process may lead to respiratory failure and the need for lung transplantation or to death," according to background information in the study. Macrolide (a class of antibiotics) antibiotics have antibacterial and anti-inflammatory properties that conceivably would provide effective treatment of bronchiectasis. These antibiotics have been shown beneficial in treating cystic fibrosis (CF), and findings from small studies suggest a benefit in non-CF bronchiectasis.

Josje Altenburg, M.D., of the Medical Centre Alkmaar, the Netherlands, and colleagues conducted a multicenter trial to investigate whether 1 year of low-dose macrolide treatment added to standard therapy is effective in reducing exacerbation frequency in patients with non-CF bronchiectasis. The randomized, placebo-controlled trial was conducted between April 2008 and September 2010 in 14 hospitals in the Netherlands among 83 outpatients with non-CF bronchiectasis and 3 or more lower respiratory tract infections in the preceding year. Patients received azithromycin (250 mg daily) or placebo for 12 months.

Forty-three participants (52 percent) received azithromycin and 40 (48 percent) received placebo and were included in the modified intention-to-treat analysis. A total of 117 exacerbations treated with antibiotics were reported during 1 year of treatment, 78 of which occurred in the placebo group. "During the treatment period, the median [midpoint] number of exacerbations in the azithromycin group was 0, compared with 2 in the placebo group. Of the 40 participants receiving placebo, 32 (80 percent) had at least 1 exacerbation during the study period. In the 43 participants receiving azithromycin, 20 (46.5 percent) had at least 1 exacerbation in the same period, yielding an absolute risk reduction of 33.5 percent. The number of patients needed to treat with azithromycin to maintain clinical stability was 3.0," the authors write.

"Gastrointestinal adverse effects occurred in 40 percent of patients in the azithromycin group and in 5 percent in the placebo group but without need for discontinuation of study treatment. A macrolide resistance rate of 88 percent was noted in azithromycin-treated individuals, compared with 26 percent in the placebo group."

"We conclude that macrolide maintenance therapy was effective in reducing exacerbations in patients with non-CF bronchiectasis. In this trial, azithromycin treatment resulted in improved lung function and better quality of life but involved an increase in gastrointestinal adverse effects and high rates of macrolide resistance," the authors write.

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