Use of antibiotic by children with cystic fibrosis does not result in improved lung function

May 4 2010

Children and adolescents with cystic fibrosis who received the antibiotic azithromycin did not experience improved lung function, compared to patients who received placebo, according to a study in the May 5 issue of *JAMA*.

"A vicious cycle of infection and inflammation causes progressive lung destruction and premature death in patients with cystic fibrosis (CF). Treatment strategies have therefore included both antimicrobial and anti-inflammatory agents," the authors write. There has been increasing evidence over the past decade that azithromycin, an antibiotic with both antimicrobial and anti-inflammatory activity, benefits individuals with CF. "Azithromycin is recommended as therapy for CF patients with chronic Pseudomonas aeruginosa [a bacteria] infection, but there has not been sufficient evidence to support the benefit of azithromycin in other patients with CF."

Lisa Saiman, M.D., M.P.H., of Columbia University, New York, and colleagues conducted a ran¬domized, placebo-controlled trial involving children and ado¬lescents with CF who were uninfected with P aeruginosa to determine if azithromycin would improve lung function or reduce pulmonary exacerbations. The trial was conducted from February 2007 to July 2009 at 40 CF care centers in the United States and Canada. Of the 324 participants screened, 260 met study criteria, were randomized and received either the study drug (n = 131) or placebo (n =

129). The average age of the participants was 10.7 years.

The researchers found that treatment with azithromycin for 24 weeks, compared with placebo, did not result in improved pulmonary function, as measured by the change in FEV1 (the volume of air that can be forced out in one second after taking a deep breath). "However, analyses of exploratory end points demonstrated that when compared with the placebo group, the azithromycin group had a 50 percent reduction in pulmonary exacer¬bations, 27 percent reduction in the initia¬tion of new oral antibiotics (other than azithromycin), 1.3 lbs. weight gain, and 0.34-unit increase in body mass index. There were no differences in treatment groups in the use of intravenous or inhaled antibiot¬ics or hospitalizations," the authors write.

Participants in the azithromycin group had less cough and less productive cough, compared with placebo participants.

"Further studies of azithromycin are warranted to further investigate its potential use in this population," the researchers conclude.

More information: JAMA. 2010;303[17]:1707-1715.

Provided by JAMA and Archives Journals