

Study: Antibiotics ineffective for most sinus infections

14 February 2012

Antibiotics that doctors typically prescribe for sinus infections do not reduce symptoms any better than an inactive placebo, according to investigators at Washington University School of Medicine in St. Louis.

"Patients don't get better faster or have fewer [symptoms](#) when they get [antibiotics](#)," says Jay F. Piccirillo, MD, professor of [otolaryngology](#) and the study's senior author. "Our results show that antibiotics aren't necessary for a basic sinus infection - most people get better on their own."

The study appears Feb. 15 in the *Journal of the American Medical Association*.

In the United States as many as one in five antibiotic prescriptions are for [sinus infections](#), the authors point out. And given the rise of bacteria resistant to such drugs, they say it is important to find out whether this treatment is effective. Their results show it is not.

"We feel antibiotics are overused in the primary-care setting," says Jane M. Garbutt, MD, research associate professor of medicine and the paper's first author. "There is a movement afoot, led by the Centers for Disease Control and Prevention, to try to improve the judicious use of antibiotics. We hope this study provides scientific evidence that doctors can use with patients to explain that an antibiotic is not likely to help an acute sinus infection."

In practice, instead of giving antibiotics, such as the amoxicillin used in this study, the researchers suggest treating symptoms, such as pain, cough and congestion, along with watchful waiting to see whether further treatment is necessary.

The study included 166 adults whose symptoms fit the criteria for acute sinus infection recommended by an expert panel convened by the Centers for Disease Control and Prevention. To participate,

patients' symptoms had to be classified as moderate, severe or very severe. Specifically, they had to report pain or tenderness in the face and sinuses and nasal discharge that lasted between seven and 28 days. Patients with chronic sinus infections or serious complications from the condition, such as a simultaneous ear or chest infection, were not included in the study.

The patients were recruited at their primary-care physicians' offices in St. Louis and were randomly assigned to receive a 10-day course of either amoxicillin or placebo. Whether on amoxicillin or not, all patients also got medications for relieving pain, fever, congestion and cough.

The researchers assessed the patients' symptoms at the start of the treatment and then three, seven, 10 and 28 days afterward. At each time point, patients answered a questionnaire assessing quality-of-life measurements related to the disease called the Sinonasal Outcome Test-16 (SNOT-16). They also compared relapse and recurrence of symptoms and days missed from work.

At day three, they found no difference between the antibiotic and placebo groups in any of these measures. At day seven, a small improvement was seen in the antibiotic group's questionnaire scores. However, Garbutt says this small change was unlikely to represent a noticeable relief from symptoms.

"On a scale of 1 to 3, we calculated that a clinically significant difference would be a change of 0.5 in the SNOT-16 score," Garbutt says. "The difference at day seven was 0.19. Even though it was a statistically significant change, it's likely not a change that a patient would notice."

Furthermore, this modest statistical improvement disappeared by day ten, when about 80 percent of patients in both groups reported their symptoms were very much improved or cured.

They also found no difference between the antibiotic and [placebo](#) groups in the amount of medications [patients](#) chose to use to alleviate pain, fever, congestion and cough.

"It's a nasty disease," Garbutt says. "People have significant symptoms. They feel miserable and miss time from work. If an antibiotic is not going to be of any benefit, then what is? That's a question we haven't answered yet. But we are working on it."

More information: Garbutt JM, Banister C, Spitznagel E, Piccirillo JF. Amoxicillin for acute rhinosinusitis: A randomized controlled trial. *Journal of the American Medical Association*. Feb. 15, 2012. 307[7]:685-692.

Provided by Washington University School of Medicine

APA citation: Study: Antibiotics ineffective for most sinus infections (2012, February 14) retrieved 13 November 2019 from <https://medicalxpress.com/news/2012-02-antibiotics-ineffective-sinus-infections.html>

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