PROJECT INFORMATION

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Comparing Treatment with Long-Term Steroids or Long-Term Antibiotics to Prevent Lung Infections in Patients with Bronchiectasis

Principal investigator

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Organization

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What was the research about?

Bronchiectasis is a health problem that damages the airways that carry air to the lungs. Patients with bronchiectasis are likely to get lung infections.

Two kinds of medicines can prevent lung infections. The first is steroids that patients take from an inhaler. The second is an antibiotic that patients take by mouth, called macrolide monotherapy. Patients with bronchiectasis may need to take these medicines long term, or for more than 28 days.

In this study, the research team looked at Medicare claims for patients with bronchiectasis who had a long-term prescription for antibiotics or steroids. The team compared patients' risk of lung infections such as pneumonia and nontuberculous mycobacterium, or NTM. They also looked at other health problems from long-term use of these medicines.

What were the results?

Compared with patients who were prescribed antibiotics, patients who were prescribed steroids had a higher risk of

- A hospital stay for pneumonia or for any reason
- Outpatient treatment for lung infections
- Irregular heartbeat

However, they had a lower risk of hearing loss compared with patients who were prescribed antibiotics.

Patients who were prescribed steroids and those who were prescribed antibiotics had a similar risk of

- Getting an NTM infection
- Having a heart attack
- Breaking a hip
- Getting an infection due to a weakened immune system
- Staying in the hospital because they coughed up blood
- Dying

Who was in the study?

The study included Medicare claims for 90,089 adults treated for bronchiectasis; 83,589 were prescribed a steroid and 6,500 were prescribed an antibiotic. Of patients, 83 percent were white, 6 percent were black, 4 percent were Asian/Pacific Islander, and less than 1 percent were American Indian or Alaska native. Also, 6 percent were Hispanic. For 1 percent, race and ethnicity were unknown or other. The average age was 74, and 68 percent were women.

What did the research team do?

Using patient data from Medicare claims, the research team compared two groups. In the first, patients had a prescription for 28 days or more of steroids. In the second, patients had a prescription for 28 days or more of antibiotics. The team looked at the risk of lung infections or other health problems up to seven years after patients started the medicines. The team took into account other things, such as gender or other health problems, that might affect risk.

A group of patients with bronchiectasis provided input to the research team.

What were the limits of the study?

Most patients were over age 65; results may differ for younger patients. Medicare claims didn't include

information about patient' symptoms or how sick they were. As a result, the research team couldn't tell how well the medicines improved symptoms. Few patients had NTM infections, making it hard to detect differences between the two groups.

Future research could include younger patients and those with and without other lung problems.

How can people use the results?

Doctors and patients with bronchiectasis can use the results when considering treatments.

To learn more about this project, visit www.pcori.org/Winthrop296.