Medical Xpress

# Certain antibiotics linked with upped risk for deadly aortic aneurysms

January 7 2021, by Amy Norton Healthday Reporter

(HealthDay)—A widely used class of antibiotics has been linked to an

increased risk of a potentially fatal blood vessel condition—even in younger, healthy people.

In a study of millions of antibiotic prescriptions made in the United States, researchers found that one class was associated with a small increase in the risk of aortic aneurysm.

The drugs—called fluoroquinolones—have been a mainstay of antibiotic therapy for decades. They include medications such as Cipro (ciprofloxacin), Levaquin (levofloxacin) and Factive (gemifloxacin).

Several previous studies have linked fluoroquinolones to a heightened risk of aortic aneurysm—a weakened area in the wall of the body's largest artery. If that weakened tissue ruptures, it can cause fatal bleeding.

Based on those earlier findings, the U.S. Food and Drug Administration issued a warning in 2018, saying people at high risk of aortic aneurysm should avoid fluoroquinolones.

"High risk" included the elderly and people with high blood pressure or a history of blockages or aneurysms in any arteries.

The new study, published Jan. 6 in *JAMA Surgery*, suggests a much broader swath of the population might want to be cautious.

It found a link between fluoroquinolones and aortic aneurysm in all adults age 35 and up—including those without high blood pressure, diabetes or elevated cholesterol.

"I'd personally like to see the FDA broaden its warning," said senior researcher Dr. Melina Kibbe, a vascular surgeon and professor at the University of North Carolina at Chapel Hill.

"In my practice," Kibbe said, "I've become extremely thoughtful about which antibiotics I prescribe."

That said, the excess risk to any one fluoroquinolone user is small: In this study, the incidence was 7.5 cases of aortic aneurysm for every 10,000 prescriptions filled, versus 4.6 cases for every 10,000 prescriptions for other antibiotics.

"The absolute risk is quite low. This is a really rare event," said Dr. Chandra Gopalakrishnan, a researcher at Brigham and Women's Hospital in Boston who was not involved in the study.

In addition, the findings cannot prove that fluoroquinolones, per se, caused the aneurysms.

And some recent research has raised questions about the nature of the link. Gopalakrishnan was the lead author on one of those studies.

He said the new research was well done, but like all observational studies , it has limitations.

Observational studies can only show an association between two things, and not prove cause and effect. According to Gopalakrishnan, one question is whether "surveillance bias" can help explain the association between fluoroquinolones and aortic aneurysm.

That is, patients on fluoroquinolones may be more likely to have conditions where imaging is done, and an aneurysm is detected incidentally.

In their study, Gopalakrishnan and his colleagues found evidence that might be the case. When they restricted their analysis to patients who'd undergone imaging, the excess risk linked to fluoroquinolones faded.

In the current study, Kibbe's team tried to account for other explanations, including the conditions for which patients were prescribed antibiotics. But for about half of all prescriptions, the record contained no indication.

That makes it harder to rule out the possibility that the indications for the prescription are a factor, according to Gopalakrishnan.

"This is a really difficult question to address with observational studies," he said.

There is, however, biological plausibility to the fluoroquinolone-aneurysm link, Kibbe said. The drugs, she noted, have also been tied to tendon ruptures.

"We still need much more research on the mechanisms," Kibbe stressed. But, she said, one hypothesis is that the drugs may affect the integrity of collagen—a structural protein in the body's connective tissues.

For their study, Kibbe and her team mined a health insurance database, using information on nearly 47.6 million antibiotic prescriptions nationwide. Among more than 9 million fluoroquinolone prescriptions, there were 6,752 cases of aortic aneurysm over the next 90 days; 103 of them required surgical repair.

After researchers weighed other factors—such as patients' age and chronic health conditions—fluoroquinolone users were 20% more likely to suffer an aortic aneurysm than people prescribed other antibiotics.

It's a small difference, Gopalakrishnan said, and it makes him "a bit cautious" in interpreting the result.

But Kibbe said doctors should be more careful about fluoroquinolone

prescriptions, even for patients who are not high risk for an aneurysm.

If a fluoroquinolone is prescribed, her advice to patients is to ask whether another type of antibiotic would be comparable.

**More information:** The U.S. Food and Drug Administration has more information on fluoroquinolones and aortic aneurysm.



Citation: Certain antibiotics linked with upped risk for deadly aortic aneurysms (2021, January 7) retrieved 2 May 2024 from
https://medicalxpress.com/news/2021-01-antibiotics-linked-upped-deadly-aortic.html