Popular Antibiotics May Increase Susceptibility to Serious Heart Condition

Researchers at Baylor University in Texas looked at the effect of fluoroquinolones, a commonly prescribed family of antibiotics that includes Ciproflaxin, on aortic aneurysms and dissections in mice. One group of mice was fed a high-fat diet while the control group was given a standard diet. Mice on a high-fat diet who were then given antibiotics experienced an increased likelihood of an aortic dissection developing. They also produced less of the enzymes needed to stabilize collagen and experienced nuclear and mitochondrial DNA damage. According to the study,

> *Although ciprofloxacin alone does not induce spontaneous AAD (aortic aneurysms and dissections), it significantly increases susceptibility to challenge-induced aortic dissection and rupture in a mouse model of sporadic AAD. As a potent DNA topoisomerase inhibitor, ciprofloxacin may exert its adverse effects in human cells by inhibiting ECM (extracellular matrix) protein biosynthesis and stability and inducing MMP (metalloproteinase) activity and even cell death."*

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Should I be Worried?

An aortic aneurysm occurs when a tear develops in the inner layers of the aorta and is typically found in men in their 60s or 70s, although they can infrequently develop in pregnant women. You are not likely to get an aortic aneurysm without a

previous heart condition or any signs. Symptoms include sudden severe chest, upper back, and abdominal pain; loss of consciousness; shortness of breath; and leg paralysis, among others. High blood pressure and hardened arteries are particularly important risk factors.

Repeat Offender

Fluoroquinolones, the antibiotics at the center of this study, already have FDA warning labels. The earliest version of the label was added in 2008 for an increased risk of tendonitis or tendon rupture. The family of drugs, which consists of levofloxacin, ciprofloxacin, moxifloxacin, ofloxacin, and gemifloxacin, was then associated with a potential increase in nerve damage and a rare neuromuscular disease called myasthenia gravis in 2013. In 2016, the FDA strengthened their warning based on reports of long-term nerve damage and ruptured tendons. Now, these drugs are linked once again to issues with nerve and tendon damage.

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Science Settled…Wait For It…

We've been conditioned to think that antibiotics are safe and nothing to worried about, but antibiotics seriously disrupt our gut environment and have changed the way humans respond to pathogens. It hasn't been for the better; the changes have left us dependent on stronger and stronger drugs and we are now running out of options. Scientists are beginning to analyze antibiotic use with the greater understanding we've acquired through years of trial and error. The lack of serious reflection has been at the expense of our health.

Sources:

- *Effect of Ciprofloxacin on Susceptibility to Aortic*

Dissection and Rupture in Mice – JAMA Network
- *Aortic* dissection – Mayo Clinic
- *Class of antibiotics gets stronger warning due to dangerous side effects* – CBS News
- *Fluoroquinolone Use in Food Animals* – NCBI