Any person who has ever visited a doctor’s office is likely to have taken a course of azithromycin, an antibiotic also commonly known as Zithromax or Z-Pak. Azithromycin belongs to a group of antibiotics called macrolides and is used to treat respiratory, throat, ear, and other infections.

According to data from a 2011 IMX Health report, approximately 40 million individuals, in the outpatient setting, received prescriptions for azithromycin that year—making it the most commonly prescribed, some might even say over-prescribed, antibiotic in the United States. This phenomenon was partly driven by the drug’s popularity among patients for its clever packaging, convenient 5-day course, and catchy name.

Safety threat...

The carefree days of prescribing azithromycin came to a screeching halt in 2012 when an observational study, published in the New England Journal of Medicine (NEJM) (1), concluded that people who took the antibiotic had an increased incidence of sudden cardiac death and all-cause mortality, compared with individuals who took other antibiotics or took nothing. The adverse events only occurred during the 5-day treatment course, suggesting that the risk dissipated as the drug cleared from the body on subsequent days.

Prior to that, the FDA had been monitoring post-marketing surveillance that suggested that macrolide antibiotics were associated with QT-interval prolongation, a change in heart rhythm that
can potentially lead to a life-threatening condition called *torsades de pointes*. Following the 2012 NEJM publication, the FDA issued a safety report to the public and prompted the manufacturer to include a warning label to prescribers. The new label cautioned physicians about the potential for adverse events in those with known QT-interval prolongation, electrolyte disturbances, or known heart conditions.

...or not.

But a new study is now refuting the findings of the 2012 report. The paper in the Canadian Medical Association Journal (CMAJ) (2), affirms the safety of macrolide antibiotics and states that the FDA warning, mainly sparked by the 2012 study, may have been “overstated.”

How could they come to a different conclusion? The February 2016 research was a population-based study to determine whether or not macrolides (azithromycin, also clarithromycin or erythromycin) caused increased incidents of death from irregular heart rhythms in older individuals, compared with the antibiotics amoxicillin, cefuroxime, and levofloxacin.

**What’s the difference?**

To get answers, the authors reviewed the health records of 503,612 individuals aged 65 or older, who were prescribed a macrolide or non-macrolide antibiotic between April 2002 and March 2013. They looked for incidents of death from ventricular arrhythmia as well as all-cause mortality within 30 days of being prescribed one of the study antibiotics. The result was conclusive: Macrolide antibiotics, when compared with non-macrolide antibiotics, *did not* cause more deaths from irregular heart rhythms (0.03% v. 0.03%). In fact, macrolides were associated with a lower risk of all-cause mortality (0.62% v. 0.76).

The result of this new study alleviates some of the safety concerns surrounding the use of azithromycin—and other macrolides—particularly in older individuals, who are more likely to have higher cardiovascular risk. The authors also cited findings from four other studies, published in peer reviewed medical journals between 2012 and 2014, that showed that macrolides do not categorically increase the risk of cardiovascular death and overall mortality.

**So a health scare or health threat?**

The take-home message is that azithromycin is a valuable antibiotic that saves lives, but like with anything there can be some risk. So if you are in the risky group, keep an eye on things. We need more antibiotics, not fewer, so this finding on azithromycin is a win for the public.

**Sources:**

