



Cystic Fibrosis Research News

Title:

An Evaluation Strategy for Potential QTc Prolongation with Chronic Azithromycin Therapy in Cystic Fibrosis

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What was your research question?

Azithromycin is recommended for cystic fibrosis (CF) patients chronically infected with *Pseudomonas aeruginosa*. This drug improves lung function, but other similar drugs increase the risk of side effects to the heart, including the lengthening of the QT interval (measured with an electrocardiogram (ECG) used by doctors). We investigated whether long-term azithromycin therapy could also cause these events.

Why is this important?

Cystic fibrosis is the most common inherited disease in Caucasians. It is due to a genetic defect that causes, among other things, thick mucus secretions in the lungs, which make the body less able to resist infection. As a result, chronic lung infections are frequent and often cause significant health issues. *Pseudomonas aeruginosa* is the most common type of bug that infects people with CF. Currently, people who are chronically infected are given azithromycin, but the safety of this drug in relation to the heart has not been investigated specifically in children. Studies like this are important to maintain high standards of care for children with CF.

What did you do?

We collected past and present data from 56 children with CF receiving long-term azithromycin therapy at Connecticut Children's Medical Center in Hartford, CT. Before starting azithromycin, children underwent an ECG, and a heart specialist calculated and interpreted the QT interval. Two months later and after the dose of azithromycin was increased, the child underwent a repeat ECG and the interval was calculated again. We calculated the change in the QT interval for each child and analysed the data to see whether starting long-term azithromycin therapy was linked to a significant change in the QT interval.

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What did you find?

Our analyses indicated that azithromycin generally did not cause important changes in the QT interval, and none of the children had any side effects relating to their hearts. Adolescent boys did show an increase in the QT interval after starting azithromycin, but not to a dangerous level.

What does this mean and reasons for caution?

Due to our data and the limited number of children involved in this study, we could not definitively determine whether azithromycin increases the risk of heart-related side effects in children with CF. Given the current knowledge, however, we suggest using a simple monitoring system in which people with CF are screened for a long QT interval before starting azithromycin and are carefully monitored with routine ECGs during the course of therapy.

What's next?

It is important to closely monitor people with CF who are being treated with long-term azithromycin, especially if they are taking other drugs that can affect the heart at the same time. Further studies with more patients will be important in evaluating the safety of long-term azithromycin in the future.

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