

Cystic Fibrosis Research News

Title:

Alpine2: efficacy and safety of 14-day vs 28-day inhaled aztreonam for pa eradication in children with CF

Lay Title:

Comparing how effective and safe 14 days and 28 days of inhaled aztreonam were at getting rid of a *Pseudomonas* bacterial lung infection.

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What was your research question?

In children with cystic fibrosis, is a shorter duration (14 days) of the inhaled medicine aztreonam as effective as the standard duration (28 days) at treating *Pseudomonas* bacteria in their lungs?

Why is this important?

In children with cystic fibrosis, lung infections caused by the bacteria *Pseudomonas* can cause permanent lung damage. New *Pseudomonas* lung infections must be treated to keep the children's lungs healthy. This treatment involved taking an inhaled antibiotic (2-3) times a day for 4-12 weeks. This is difficult because it takes a lot of time and effort from the child and their parent(s) or caregiver(s). This means some children do not take their antibiotics as often or for as long of a time as they should which can make the infection worse. Studies show some children take less than half of the doses they should. If shorter courses of inhaled antibiotics were as effective as the standard courses it would be more convenient for the families and the children, and may enable more treatments to be given.

What did you do?

Children aged 3 months to 17 years old with cystic fibrosis and a new *Pseudomonas* lung infection were invited to take part in the study. Children were randomly selected to take inhaled aztreonam for 28 days or 14 days followed by 14 days of placebo. The placebo looked and tasted like aztreonam but did not contain any active medicine.

The researchers took samples of mucus from the children's lungs every time they saw them. They tested the samples for the bacteria *Pseudomonas*. The medicine worked if there were no *Pseudomonas* in the samples through day 28 after stopping the study treatment.

What did you find?

This study showed 14 days of inhaled aztreonam did not work as well as 28 days at treating *Pseudomonas* lung infections. There were no bad reactions to the medicine, showing these durations of inhaled aztreonam are safe to use in children with cystic fibrosis.

What does this mean and reasons for caution?

The results of this study suggest that the optimal length of treatment with inhaled aztreonam for new lung infections caused by *Pseudomonas* in CF patients is 28 days, which is the standard duration. However, this may not apply to all CF patients with *Pseudomonas* lung infections, as there are many factors that can influence the effectiveness of inhaled aztreonam, such as the duration of infection, the type of *Pseudomonas*, any previous



Cystic Fibrosis Research News

treatment, and more. Therefore, we advise doctors and patients to discuss this and make the best decision for each individual case.

What's next?

The investigators are not planning on studying the inhaled aztreonam therapy duration any further. This study answered a valuable question and supported the standard inhaled aztreonam therapy duration of 28 day.

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