



CLARITHROMYCIN (BIAXIN)

What is clarithromycin?

Clarithromycin is an oral antibiotic approved for use in the treatment of *Mycobacterium avium* complex (MAC). It is also used to treat a wide variety of mild to moderate bacterial infections.

The bacteria that cause MAC multiply inside tissue and blood cells. Because they can enter cells, these bacteria can hide from the body's defence system and are very hard to get rid of. Clarithromycin gets into these infected cells and interferes with the bacteria's ability to make proteins. The bacteria cannot build or repair their cell walls so they die because the contents of their cells cannot be contained.

Clarithromycin and other macrolide antibiotics can penetrate tissue cells as well as blood cells. This makes these drugs particularly useful in treating MAC because the bacteria are found in organs as well as in blood cells.

How is it used?

1. Prevention

Although it has not been approved in Canada for this purpose, clarithromycin is used "off-label" to prevent MAC. At a dose of 500 mg taken twice daily, clarithromycin has been shown to reduce MAC infections by 69% compared to placebo.

Treatment

Clarithromycin is used in combination with

other drugs to treat MAC. The combinations may include clarithromycin and two or more of the following: ethambutol, rifabutin, amikacin, or ciprofloxacin. The most commonly used combination is clarithromycin + ethambutol + rifabutin.

A clinical trial comparing standard dose (500 mg taken twice daily) to high-dose (1000 mg taken twice daily) clarithromycin was stopped early because of poorer survival in the high-dose group. After about 3.3 months of treatment, there were 17 deaths in the high-dose group and 10 in the standard dose group. The severity and types of side effects or lab toxicities did not differ between the groups. No reason for the difference in deaths has been found. As a result of this trial, the USA's National Institutes of Health warned physicians not to give more than the standard dose of clarithromycin (500 mg twice a day).

Side effects

HIV-positive participants in clinical trials of clarithromycin reported generally mild to moderate side effects which were dose-related, that is, the higher the dose, the greater the side effect. Of 463 people who took a total daily dose of 1000 mg clarithromycin, 11% reported nausea, 7% vomiting, 6% abnormal taste, 5% abdominal pain, 4% diarrhea, 4% rash and 2% headache. Elevated liver enzymes were also reported in 2-3% of study participants.

To date, there have been no reports of side effects unique to women.



Resistance

Resistance to macrolide antibiotics can develop early, even within 12 weeks, so combination therapy is necessary for maximum benefit. People who have taken clarithromycin as prophylaxis and have “broken through” with infection may have developed resistance to clarithromycin.

Drug interactions

Clarithromycin can be taken by people who use protease inhibitors. It slightly lowers blood levels of AZT, but this can be corrected by taking each drug an hour or two apart.

Astemizole (Hismanal) and terfenadine (Seldane) should not be used with clarithromycin which can increase blood levels of these antihistamines and could result in irregular heartbeat (cardiac arrhythmia).

Migraine drugs containing ergotamine interact with erythromycin, a drug closely related to clarithromycin, producing acute ergot toxicity. Although this effect has not been reported with clarithromycin, people who control migraines with drugs such as Ergomar, Wigraine, Cafergot-PB and others should consult their doctors.

Credits

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