

Azithromycin

BRAND NAME: ZITHROMAX

Available as
250 mg, 500 mg, 600 mg
TABLETS and
ORAL SUSPENSION

BACKGROUND

Azithromycin is a semi-synthetic antibiotic of the macrolide class, the same class as erythromycin and tylosin. This class of antibiotics acts to inhibit bacterial protein synthesis by inhibiting a cellular structure called a 50S ribosome, a structure only certain bacteria have and use to make internal proteins. Because non-bacterial cells (like mammal cells) use a different type of ribosome (called a 60S ribosome), this difference in the ribosome structures can thus be exploited. In other words, macrolide antibiotics will interfere with the 50S ribosome but will have no effect on the 60S ribosome meaning disruption in protein manufacture for bacteria with no effect on mammal cells.

HOW THIS MEDICATION IS USED

Azithromycin has activity against many bacterial species including *Staphylococci*, *Streptococci*, *Bartonella henselae*, and even *Borrelia burgdorferi*, the agent of Lyme disease.

Azithromycin and atovaquone (a quinine derivative) combine to form an effective treatment against *Babesia gibsoni*, a blood cell parasite.

Azithromycin has been able to combat the overgrowth of gum tissue (gingival hyperplasia) which is sometimes a side effect of cyclosporine, an immunomodulator. To facilitate this use, an azithromycin toothpaste has been produced.

Azithromycin is also used to reduce numbers of viral papillomas (viral warts) in dogs, though this use is somewhat controversial as to how well it works.

Azithromycin is often used for cats with chronic nasal disease/upper respiratory infection after other antibiotics have been found ineffective.

Azithromycin can also be used to improve gastrointestinal mobility, though it is usually used for its antibiotic properties.

Azithromycin is often compared to its cousin, erythromycin, and found to have a longer half life in dogs and cats as well as better absorption of oral dosages. This means it lasts longer and gets into the body easier.

Tablets are best given with food while the oral liquid is best given on an empty stomach. If a dose is skipped, do not double up on the next dose but simply resume dosing as usual with the next scheduled dose.

SIDE EFFECTS

At higher doses, vomiting has been reported though generally this is felt to be less of a problem than with erythromycin. Azithromycin overdose manifests as diarrhea, vomiting, and abdominal cramps.

INTERACTIONS WITH OTHER DRUGS

Macrolide antibiotics interact with cisapride and should not be used together. This is because of a heart rhythm disturbance that results with concurrent use. Other drugs that can have similar reactions with azithromycin include: sotalol (a heart medicine), the "azole" anti fungal medications (ketoconazole, itraconazole etc.), ondansetron and dolesetron (nausea medications), and quinolone class antibiotics (enrofloxacin, marbofloxacin etc.).

When theophylline is used concurrently with azithromycin, there is an increase in potential for toxic effects of theophylline.

Cyclosporine blood levels can increase when azithromycin is used concurrently.

Oral antacids interfere with intestinal absorption of azithromycin after oral dosing. Ideally antacid administration and azithromycin should be separated by two hours.

CONCERNS AND CAUTIONS

Because azithromycin is largely removed from the body via the liver (in bile), normal liver function is needed to remove the drug from the body. If liver function is impaired, dosing adjustments may be required.

The oral suspension should not be refrigerated and spoils after 10 days (and should be discarded after this time)

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