15/MHS06/059

PHM 302 C.O

Azithromycin

Mechanism of action

Azithromycin prevents bacteria from growing by interfering with their protein synthesis. It binds to the 50S subunit of the bacterial ribosome, thus inhibiting translation of mRNA. Nucleic acid synthesis is not affected.

Indications for use

1. Mild-to-moderate susceptible infections including acute bacterial exacerbations of COPD, acute bacterial sinusitis,
2. acute otitis media,
3. community-acquired pneumonia,
4. pharyngitis/tonsillitis,
5. uncomplicated skin and skin structure,
6. urethritis,
7. cervicitis,
8. chancroid in men.

Toxicity

Like other macrolide antibiotics, azithromycin has been linked to a low rate of acute, transient and asymptomatic elevation in serum aminotransferases which occurs in 1% to 2% of patients treated for short periods, and a somewhat higher proportion of patients given azithromycin long term. Azithromycin can also rarely cause clinically apparent liver injury. Because azithromycin has become so commonly used, it has also become one of the more common causes of drug induced liver injury. The typical liver injury caused by azithromycin resembles that described with other macrolides and is a self-limited, cholestatic hepatitis, arising within 1 to 3 weeks of starting treatment (Case 1). It occasionally arises after azithromycin is stopped and can occur even after a short, 2 or 3 day course. Typical symptoms are fatigue, jaundice, abdominal pain and pruritus. Fever and eosinophilia may also be present, but immunoallergic features are usually not prominent. This form of liver injury from azithromycin is usually benign, but in some instances is associated with prolonged jaundice and persistence of liver test abnormalities for 6 months or more. [Liver histology](https://www.ncbi.nlm.nih.gov/books/n/livertox/glossary/def-item/glossary.liver-histology/) in these cases generally demonstrates bile duct loss, which if severe, can result in vanishing bile duct syndrome and chronic cholestatic liver failure, ultimately requiring liver transplantation. Other instances of bile duct loss and prolonged cholestatic hepatitis ultimately resolve, but may be marked by persistent serum alkaline phosphatase elevations of uncertain clinical signficance. Azithromycin can also cause hepatocellular injury with symptoms and jaundice. In these cases, the latency is typically short and may be 1-3 days only (Case 2). Serum aminotransferase levels are markedly elevated and alkaline phosphatase values are usually less than twice the upper limit of normal, although they may rise to higher levels with time. The hepatocellular forms of liver injury from azithromycin can be severe and lead to acute liver failure and death or need for emergency liver transplantation. However, in most cases, recovery occurs within 4 to 8 weeks. Azithromycin has also been associated with severe cutaneous reactions such as erythema multiforme, [Stevens Johnson syndrome](https://www.ncbi.nlm.nih.gov/books/n/livertox/glossary/def-item/glossary.stevens-johnson-syndrome/)(SJS) and toxic epidermal necrosis (TEN). These severe cutaneous reactions are often associated with some degree of liver injury and may be accompanied by clinically apparent injury with jaundice, usually with a cholestatic pattern. However, the severe cutaenous reactions usually overshadow the liver injury.

Side effect

Common side effects of include:

1. [diarrhea](https://www.rxlist.com/diarrhea/article.htm) or loose stools,
2. [nausea](https://www.rxlist.com/nausea/symptoms.htm),
3. [abdominal pain](https://www.rxlist.com/abdominal_pain_causes_remedies_treatment/article.htm),
4. stomach upset,
5. [vomiting](https://www.rxlist.com/vomiting/symptoms.htm),
6. [constipation](https://www.rxlist.com/constipation/article.htm),
7. [dizziness](https://www.rxlist.com/dizziness_dizzy/article.htm),
8. tiredness,
9. [headache](https://www.rxlist.com/headache/article.htm),
10. [vaginal itching](https://www.rxlist.com/vaginal_itching/symptoms.htm) or [discharge](https://www.rxlist.com/script/main/art.asp?articlekey=3010),
11. nervousness,
12. [sleep](https://www.rxlist.com/sleep/article.htm) problems ([insomnia](https://www.rxlist.com/insomnia/article.htm)),
13. skin [rash](https://www.rxlist.com/rash/article.htm) or [itching](https://www.rxlist.com/itch/symptoms.htm),
14. [ringing in the ears](https://www.rxlist.com/script/main/art.asp?articlekey=20474),
15. hearing problems,
16. decreased [sense](https://www.rxlist.com/script/main/art.asp?articlekey=15769) of taste or [smell](https://www.rxlist.com/script/main/art.asp?articlekey=9074).