Aztreonam (Azactam)

Aztreonam (Azactam) is a bactericidal antibiotic that works by inhibiting bacterial cell wall synthesis, causing disruption of the cell wall, ultimately leading to bacterial cell lysis and death. Because aztreonam is a monobactam antibiotic, it has a limited spectrum and is only effective against gram-negative aerobic bacteria. Side effects are limited with this medication and include GI upset, pain at the injection site, and thrombophlebitis. Although aztreonam is typically administered IV or IM, it can also be administered via a nebulizer. Keep in mind that because aztreonam is structurally different from penicillin, it is safe for use in individuals with a penicillin allergy without the risk of cross-sensitivity.



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Mechanism

Monobactam Antibiotic
Monopoly-backgammon
Aztreonam has a limited or narrow antimicrobial spectrum, as it is only effective against gram-negative aerobic bacteria.

Bactericidal
Bacteria-sliders
Aztreonam is a bactericidal antibiotic. These drugs inhibit cell wall synthesis by binding to specific proteins and weakening the bacterial cell wall. The disruption of the cell wall's integrity causes bacterial cell lysis and death.

Indications

Gram-Negative Infections
Graham-cracker Negative-devil
Aztreonam is not a broad-spectrum antibiotic and is only effective against gram-negative infections.

No Activity on Gram-Positives or Anaerobes
No Activity on Graham-cracker Positive-angel or Ant-robe
Due to its limited spectrum, aztreonam is not effective against infections caused by gram-positive or anaerobic bacteria.

Cystic Fibrosis
Sisters with Fibrous-sacks
Aztreonam is used in cystic fibrosis to treat respiratory infections caused by gram-negative bacteria, particularly Pseudomonas aeruginosa.

Nebulizer Form Available
Nebula-nebulizer
Although aztreonam is typically administered IV or IM, it can also be administered via a nebulizer. This route of administration is commonly used to treat respiratory infections in patients with cystic fibrosis.

Side Effects

GI Upset
GI-guy Upset
Aztreonam causes mild to moderate digestive disturbances. Symptoms can include nausea, vomiting, diarrhea, and abdominal pain. These symptoms are generally self-limiting and not severe, but they can impact patient comfort and adherence to the medication.

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Pain at Injection Site

Pain-bolts at Injection Site

Patients may experience pain at the injection site. Thrombophlebitis, or inflammation of the vein due to a blood clot (thrombus), may also occur.

Considerations

Safe for Penicillin Allergy

Safe for Pencil-villain Allergy-alligator

Aztreonam is structurally different from penicillin and is generally safe for use in individuals with a penicillin allergy without the risk of cross-sensitivity. It is important to note that some patients allergic to penicillins may exhibit hypersensitivity reactions to aztreonam. Obtain a thorough history prior to initiating therapy.

Synergistic with Aminoglycosides

A-mean-ol'-glider

Combining aztreonam with an aminoglycoside antibiotic, such as gentamicin or tobramycin, has been shown to have a synergistic effect against certain microorganisms, especially Pseudomonas aeruginosa.

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