Clindamycin

Clindamycin is a bacteriostatic antibiotic commonly used to treat gram positive and anaerobic infections. It is a bacterial protein synthesis inhibitor that binds to the 50S ribosomal subunit and inhibits ribosomal translocation, similar to macrolides. Hypersensitivity reactions, especially rashes, occur frequently when using this medication. Clindamycin is also associated with pseudomembranous colitis, an infection of the colon characterized by foul smelling diarrhea, fever, and abdominal pain caused by Clostridium difficile infection. Although rare, patients taking this medication may develop blood dyscrasias, and rapid IV administration can lead to cardiac arrhythmias. Due to the risk of C. difficile associated diarrhea (CDAD), which can be fatal if left untreated, patients should be monitored for significant diarrhea for identification and immediate treatment of this associated adverse effect.

PLAY PICMONIC

Mechanism

Bacteriostatic

Bacteria-shocked

This class of medication works by inhibiting protein synthesis in bacteria, as it binds to ribosomal subunits within their cells. These medications don’t directly kill bacteria, but inhibit their growth, making clindamycin a bacteriostatic antibiotic.

Binds 50S Ribosomal Subunit

Binding to 50S-rapper

Clindamycin is a bacterial protein synthesis inhibitor that binds to the 50S ribosomal subunit and inhibits ribosomal translocation, similar to macrolides.

Indications

Gram-Positive Infections

Graham-cracker Positive-angel

Clindamycin is widely used as an alternative to penicillin for treating gram-positive infections, especially cocci.

Anaerobic Infections

Ant-robe

Clindamycin is typically used to treat anaerobic infections outside the CNS, as it does not cross the blood-brain barrier. It is the drug of choice for severe group A streptococcal infection and for gas gangrene. It is also the preferred drug for abdominal and pelvis infections owing to B. fragilis.

Side Effects

Rash

Rash

Hypersensitivity reactions, especially rashes, occur frequently when using this medication.

Pseudomembranous Colitis

Sumo-man-bra Colon

Clindamycin is associated with pseudomembranous colitis, an infection of the colon characterized by foul smelling diarrhea, fever, and abdominal pain caused by Clostridium difficile infection. This antibiotic can precipitate pseudomembranous colitis due to a broad spectrum that can destroy normal gut flora, allowing the gut to be overrun with C. difficile.

C. Difficile (Associated Diarrhea)

Classroom Differential-equations

The most severe toxicity of clindamycin is C. difficile associated diarrhea (CDAD). The anaerobic gram-positive bacillus C. difficile causes suprainfection of the bowel, leading to profuse, watery diarrhea, often as many as 10 to 20 watery stools per day that may contain mucus and blood. The patient may also experience abdominal pain, fever, and leukocytosis. Symptoms typically begin during the first week of treatment, but can develop as long as

4 to 6 weeks after clindamycin withdrawal.

Arrhythmias

Broken Arrhythmia-drum

Rapid IV administration of clindamycin can lead to the development of cardiac arrhythmias. This can include ECG changes, hypotension, and cardiac arrest. Be sure to administer the medication slowly via IV.

Blood Dyscrasias

Blood-cell Disc-razor

Although rare, patients taking clindamycin may develop blood dyscrasias. Examples include leukopenia, agranulocytosis, and thrombocytopenia.

Considerations

Monitor for Diarrhea

Monitor and Toilet

Due to the risk of C. difficile associated diarrhea (CDAD), which can be fatal if left untreated, patients should be educated to report significant diarrhea, and clindamycin will be discontinued. Patients will then be given a drug for eliminating C. difficile from the bowel, such as vancomycin or metronidazole. Diarrhea typically subsides 3 to 5 days after starting vancomycin, and vigorous fluid and electrolyte therapy will be initiated. Drugs decreasing bowel motility, such as opioids and anticholinergics, may worsen symptoms and should be avoided.