Tigecycline (Tygacil)

Tigecycline (Tygacil) is a bacteriostatic antibiotic, and is categorized as a glycylcycline antibiotic. It works to inhibit bacterial protein synthesis by binding to the 30S ribosomal subunit. This drug is indicated in complicated skin and intra-abdominal infections, along with cases of community-acquired pneumonia. Tigecycline boasts deep tissue penetration and broad spectrum coverage, making it indicated for numerous gram-positive, gram-negative, anaerobic and multidrug-resistant infections. Common side effects of this drug include GI symptoms, with nausea and vomiting being the most common complaints.

PLAY PICMONIC

Mechanism Of Action

Glycylcycline Antibiotic

Glider-cycle ABX-guy

Tigecycline was developed from a third generation tetracycline medication, called minocycline. Tigecycline, which is categorized as a glycylcycline antibiotic, has structural similarities and is derived from, minocycline.

Binds 30S Subunit

Binding to (30) Dirty S

Tigecycline works as a bacteriostatic antibiotic by binding to the smaller 30S ribosomal subunit of the great 70S ribosome required for mRNA translation to peptide chains, effectively inhibiting bacterial protein synthesis.

Inhibits Protein Synthesis

Inhibiting-chains on Mr. Protein

This antibiotic acts as a protein synthesis inhibitor. It does so by blocking the interaction between the A site of the bacterial ribosome and the aminoacyl-tRNA of the bacterial 30S ribosomal subunit.

Indications

Severe Infections

Severed Infectious-bacteria

This antibiotic has a wide range of indications and is often used to treat complicated skin infections, intra-abdominal infections, as well as community-acquired pneumonia (CAP).

Broad Spectrum Coverage

Broad Spectrum of Colors

Due to its structural modifications as a derivative of minocycline, this drug has activity against a variety of gram-positive and gram-negative bacteria, along with anaerobes. Additionally, this drug's broad spectrum coverage makes it useful in treating methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant enterococci (VRE), and other multidrug resistant bacteria. This drug has showed similar efficacy to vancomycin, aztreonam and imipenem; however, it does not have Pseudomonas or Proteus coverage.

Anaerobic & Multidrug-Resistant Organisms

Ant-robe & Drugs Wearing Resistant-bandana

In addition to various gram-negative and gram-positive bacteria, tigecycline is useful in treating anaerobic and multidrug-resistant organisms. Subsequently, this drug is indicated for use in complicated skin and intra-abdominal infections, which may be the result of multidrug-resistant infections, such as MRSA or VRE.

Deep Tissue Penetration

Deep Tissue-box Penetration

This antibiotic exhibits deep tissue penetration and is used to treat intra-abdominal infections, community-acquired pneumonia, as well as complicated skin infections.

Side Effects

GI Distress

GI with Flare-gun

The most commonly reported side effects of tigecycline are gastrointestinal (GI) complaints. Greater than 10% of patients taking this medication complain of GI complications, such as nausea, vomiting, and diarrhea.

Severe Nausea and Vomiting

Severed Vomit

Roughly 20% of patients develop nausea and vomiting with tigecycline use. These are the most common complaints associated with using this antibiotic.

Considerations

2nd Line Agent

2nd-place-tutu Agent

The FDA recommends that other alternative antibiotics be considered prior to tigecycline administration. This drug is considered a second-line agent because of the increased risk for all-cause mortality associated with its use.