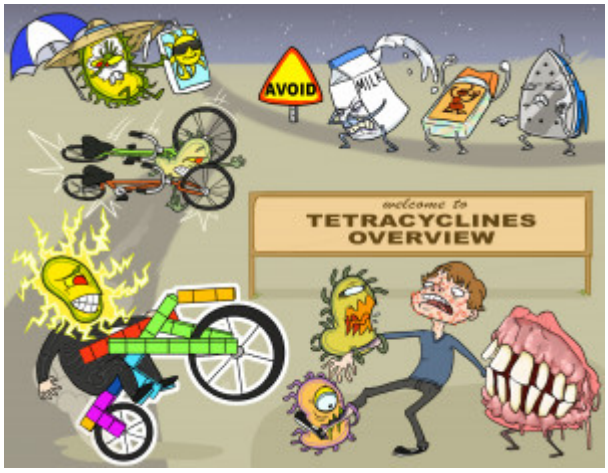
Tetracyclines Overview

This group of antibiotics are broad-spectrum and are active against a wide variety of gram-positive and gram-negative bacteria. These drug names are easily recalled by their “-cycline” ending, and work against a variety of infectious disease, acne and periodontal disease. These medications should not be taken with calcium supplements, milk products, iron supplements, magnesium-containing laxatives, and most antacids, as they decrease tetracycline absorption.



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End in "-cycline"
Cycle
These medications can be distinguished by their common suffix, as these drug names end with “-cycline.” Examples of common medications include Doxycycline, Minocycline, Demeclocycline and Tetracycline.

Mechanism of Action

Bacteriostatic
Bacteria-shocked
This class of medication works by inhibiting protein synthesis in bacteria, as they bind to ribosomal subunits within their cells. These medications don’t directly kill bacteria, but inhibit their growth, making tetracycline medications bacteriostatic.

Indications

Infectious Diseases
Infectious Bacteria
Tetracyclines are indicated for a variety of infectious diseases, including Rickettsia, Chlamydia trachomatis, Cholera, Lyme disease, and H.pylori. An interesting fact is that demeclocycline is used to treat SIADH, which is not an infectious process.

Acne
Acne
Tetracyclines are often used for the treatment of moderate to severe acne, as they suppress growth of P. acnes.

Periodontal Disease
Around-the-mouth Disease
Tetracycline antibiotics are used in patients with periodontal disease, as they help limit the growth of bacteria such as actinobacillus. Furthermore, these medications block the actions of collagenase, which destroys connective tissue and bone in the mouth.

Nursing Considerations

Avoid Milk, Antacids, Iron
Avoiding Milk, Ant-acid, and Iron
Divalent cations like calcium and iron bind directly to tetracyclines and prevent their absorption in the small intestine, thereby decreasing effectiveness. Orally administered tetracyclines should not be taken with the consumption of foods or supplements with high amounts of divalent cations like milk, antacids, or iron by at least one or two hours.

Sunlight Protection
Sunscreen
Patients should be advised to protect themselves from excessive sunlight, as this medication leads to increased photosensitivity. Appropriate precautions include using sunscreen, wearing long-sleeved clothing and hats, as well as limiting time in the sun.

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