

Vancomycin

Vancomycin is an antibiotic with similar action to the beta-lactam antibiotics. It is a very important, yet potentially toxic drug that is used in the treatment of serious infections. It is indicated for serious gram positive infections, but can lead to side effects such as ototoxicity, nephrotoxicity, thrombophlebitis and red man syndrome.



PLAY PICMONIC

Mechanism of Action

Inhibits Bacterial Cell Wall Synthesis

Disrupted Bacterial Cell Wall

In addition, vancomycin alters bacterial-cell-membrane permeability and RNA synthesis. There is no cross-resistance between vancomycin and other antibiotics. It is active only against gram-positive bacteria. It is not active against gram-negative bacilli, mycobacteria, or fungi. It is poorly absorbed via the GI system, which is why it is given most often parenterally.

Indications

Serious Gram-Positive Infections

Serious Graham-cracker-Positive-angel

Vancomycin is used in the treatment of serious infections involving gram positive organisms including *Clostridium difficile* (C.difficile or C.diff), methicillin-resistant *Staphylococcal aureus* (MRSA), and individuals susceptible to infection but are allergic to penicillin.

Side Effects

Nephrotoxicity

Kidney with Toxic-green-glow

Peak and trough levels are drawn while the patient is receiving Vancomycin, because of the dose related risk of renal toxicity.

Ototoxicity

Ear with Toxic-green-glow

While rare, ototoxicity is another possible side effect associated with Vancomycin administration and is usually reversible. Patients with ototoxicity often present first with tinnitus.

Red Man Syndrome

Red Man

If administered rapidly, patients may experience flushing, rash, pruritus, urticaria, tachycardia, and hypotension. Slow infusion, as well as prophylaxis with diphenhydramine avoids the release of histamine, which causes these symptoms.

Thrombophlebitis

Trombone-flamingo

This is a common side effect due to the irritating effect of the medication on the blood vessel wall. Diluting the IV solution, changing the IV site frequently, and administering the IV slowly can decrease the risk of thrombophlebitis.

Nursing Considerations

Culture Samples First

[Cultural-dish with First-place Ribbon](#)

Prior to giving the first dose of the medication, a culture and sensitivity test should be performed to identify the infectious organism.

Infuse IV Over 60 Minutes

[Infuser IV over 60-minute-clock](#)

Slow infusion of Vancomycin reduces the incidence of side effects such as Red Man Syndrome and thrombophlebitis.

Take Around the Clock

[Circling Around the Clock](#)

It is important to administer both parenteral and oral preparations of the medication in equal intervals around the clock to maintain therapeutic blood levels.