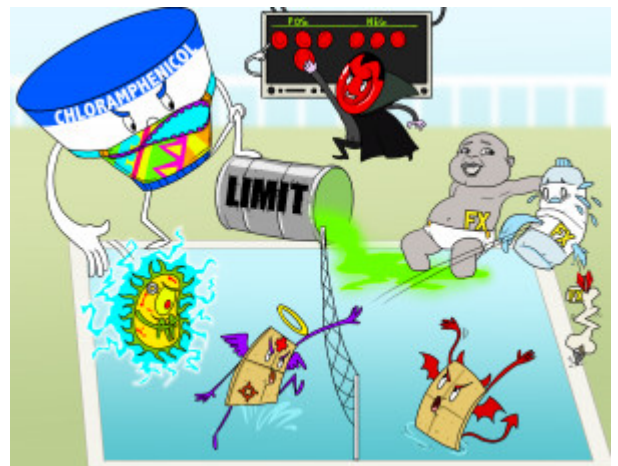


Chloramphenicol (Chloromycetin)

Chloramphenicol is a broad spectrum antibiotic indicated for the treatment of gram positive or gram negative infections, although this drug is never used as a first line antibiotic. Chloramphenicol is associated with serious and potentially life threatening side effects, which include fatal aplastic anemia, bone marrow suppression, and gray syndrome. If this drug is utilized, it is important to monitor blood levels during the course of the drug treatment to ensure that toxicity does not occur. In addition, a CBC should be checked before administration and regularly during the medication regimen.



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Mechanism

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 chloramphenicol bacteriostatic. If given in high doses, the mechanism can be bactericidal for susceptible organisms.

Indications

Gram Positive or Gram Negative Infections

Graham-cracker Positive-angel and Negative-devil

Chloramphenicol is indicated for the treatment of gram positive and gram negative infections, because it covers a broad spectrum of bacteria. Although, it is important to note this drug is not a first line medication due to resistance and safety concerns. It may be considered as a second or third line medication to treating meningitis, rickettsial infections, and chlamydia.

Side Effects

Bone Marrow Suppression

Bone Arrow Suppressed

Chloramphenicol may promote bone marrow suppression causing immunosuppression, anemia, leukopenia, and thrombocytopenia. This side effect is usually reversible if recognized early.

Aplastic Crisis

A-plastic-bottle Crying

It is important to be aware that chloramphenicol may cause life threatening aplastic anemia. This effect is rare and unrelated to the dose of the medication. The actual mechanism behind this fatal event, as it relates to chloramphenicol is unclear.

Gray Syndrome

Gray baby

The enzyme system in infants is too immature to metabolize chloramphenicol, leading to a toxic drug load within the body. The baby will present with vomiting, abdominal distention, ashen gray skin color, hypotonic body tone, hypotension, cyanosis, and hypothermia. If any of these symptoms are noted, the medication should be stopped immediately.

Considerations

Toxicity Limits Use

Limit Toxic-barrel

Due to the side effects and safety concerns, chloramphenicol is not used as a first line drug. It is important to monitor serum drug levels in order to prevent drug toxicity. This drug should be used in low therapeutic levels.

Monitor Blood Counts

Monitor Blood Count

Due to chloramphenicol's effect of suppressing the bone marrow, CBC's should be checked before administration and every two days after administration begins.