CLINDACIN

Capsule

Composition
Each capsule contains Clindamycin (as hydrochloride) 150 mg

Action
Clindamycin bind exclusively to the 50S subunit of bacterial ribosomes and suppress protein synthesis. Clindamycin has been shown to have in vitro activity against isolates of the following organisms.

Aerobic gram-positive cocci
Staphylococcus aureus
Staphylococcus epidermidis (penicillinase and non-penicillinase producing strains) When tested by in vitro methods some staphylococcal strains originally resistant to erythromycin rapidly develop resistance to Clindamycin Streptococci (except Streptococcus faecalis Pneumococei).

Anaerobic gram-negative bacilli
Bacteroides species (including Bacteroides fragilis group and Bacteroides melaninogenicus group). Fusobacterium species

Anaerobic gram-positive non-spore forming bacilli
Propionibacterium, Eubacterium, Actinomyces species

Anaerobic and microaerophilic gram-positive cocci
Peptococcus species, Peptostreptococcus species, Microaerophilic streptococci

Clostridia
Clostridia are more resistant than most anaerobes to Clindamycin. Most Clostridium perfringens are susceptible, but other species, e.g., *Clostridium sporogenes* and *Clostridium tertium* are frequently resistant to Clindamycin.

Susceptibility testing should be done.
Cross-resistance has been demonstrated between Clindamycin and lincomycin.
Antagonism has been demonstrated between Clindamycin and erythromycin.

Pharmacokinetics
Serum level studies with a 150 mg oral dose of clindamycin in 24 normal adult volunteers showed that clindamycin was rapidly absorbed after oral administration. An average peak serum level of 2.50 micrograms/ml was reached in 45 minutes; serum levels averaged 1.51 micrograms/ml at three hours and 0.70 micrograms/ml at six hours. Absorption of an oral dose is virtually complete (90%).

Concomitant administration of food does not appreciably modify the serum concentrations; serum levels have been uniform and predictable from person to person and dose to dose. Serum level studies following multiple doses of Clindamycin for up to 14 days show no evidence of accumulation or altered metabolism of drug. Multiple-dose studies in newborns and infants up to 6 months of age show that the drug does not accumulate in the serum and is excreted rapidly.

Serum half-life of clindamycin is increased slightly in patients with markedly reduced renal function. Haemodialysis and peritoneal dialysis are not effective in removing clindamycin from the serum. Concentrations of clindamycin in the serum increased linearly with increased dose. Serum levels exceed the MIC (minimum inhibitory concentration) for most indicated organisms for at least six hours following administration of the usually recommended doses.

Clindamycin is widely distributed in body fluids and tissues including bones. The average biological half-life is 2.4 hours. Approximately 10% of the bioactivity is excreted in the urine and 3.6% in the faeces; the remainder is excreted as bioinactive metabolites. Clindamycin is mainly eliminated by hepatic metabolism and biliary excretion.

Doses of up to 2 g of clindamycin per day for 14 days have been well tolerated by healthy volunteers, except that the incidence of gastrointestinal side effects is greater with the higher doses. No significant levels of clindamycin are attained in the cerebrospinal fluid, even in the presence of inflamed meninges.

Indications

Clindacin is indicated in the treatment of serious infections caused by susceptible anaerobic bacteria. Clindacin is also indicated in the treatment of serious infections due to susceptible strains of streptococci, pneumococci, and staphylococci. Its use should be reserved for penicillin-allergic patients or other patients for whom, in the judgment of the physician, penicillin is inappropriate. Because of the risk of colitis, as described in the warning, before selecting Clindacin the physician should consider the nature of the infection and the suitability of less toxic alternatives (e.g., erythromycin).

Anaerobes

Serious respiratory tract infections such as empyema, anaerobic pneumonitis and lung abscess; serious skin and soft tissue infections; septicemia; intra-abdominal infections such as peritonitis and intra-abdominal abscess typically resulting from anaerobic organisms resident in the normal gastrointestinal tract); infections of the female pelvis and genital tract such as endometritis, nongonococcal tube ovarian abscess, pelvic cellulitis and postsurgical vaginal cuff infection.

Streptococci

Serious respiratory tract infections: serious skin and soft tissue infections.

Staphylococci

Serious respiratory tract infections: serious skin and soft tissue infections

Pneumococci

Serious respiratory tract infections bacteriologic studies should be performed to determine the causative organisms and their susceptibility to Clindamycin

Contraindications

Clindamycin capsules are contraindicated in individuals with a history of hypersensitivity to preparations containing Clindamycin or lincomycin.

Warnings

Clindamycin therapy has been associated with severe colitis, which may end fatally. Therefore, it should be reserved for serious infections where less toxic antimicrobial agents are inappropriate, as described in the Indications section. It should not be used in-patients with nonbacterial infections, such as most upper respiratory tract infections. Studies indicate a toxin(s) produced by Clostridia is one primary cause of antibiotic associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin in vitro. The colitis is usually characterized by severe, persistent diarrhea and severe abdominal cramps and may be associated with the passage of blood and mucus. Endoscopic examination may reveal pseudo membranous colitis. Stool culture for Clostridium difficile and stool assay for C. difficile toxin may be helpful diagnostically.

When significant diarrhea occurs, the drug should be discontinued or, if necessary, continued only with close observation of the patient. Large bowel endoscopy has been recommended.

Antiperistaltic agents such as opiates and diphenoxylate with atropine may prolong and/or worsen the condition. Vancomycin has been found to be effective in the treatment of antibiotic associated pseudomembranous colitis produced by Clostridium difficile. The usual adult dosage is 500 milligrams to 2 grams of vancomycin orally per day in three to four divided doses administered for 7 to 10 days. Cholestyramine or colestipol resins bind vancomycin in vitro.

If both a resin and vancomycin are to be administered concurrently, it may be advisable to separate the time of administration of each drug. Diarrhea, colitis, and pseudomembranous colitis have been observed to begin up to several weeks following cessation of therapy with Clindamycin.

Studies indicate a toxin(s) produced by Clostridia is one primary cause of antibiotic associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin in vitro. Mild cases of colitis may respond to drug discontinuance alone. Moderate to severe cases should be managed with fluid, electrolyte and protein supplementation as indicated. Vancomycin has been found to be effective in the treatment of antibiotic associated pseudomembranous colitis produced by Clostridium difficile. The usual adult dosage is 500 milligrams to 2 grams of vancomycin orally per day in three to four divided doses administered for 7 to 10 days. Cholestyramine or colestipol resins bind vancomycin in vitro. If both a resin and vancomycin are to be administered concurrently, it may be advisable to separate the time of administration of each drug. Systemic corticoids and corticoid retention enemas may help relieve the colitis. Other causes of colitis should also be considered.

A careful inquiry should be made concerning previous sensitivities to drugs and other allergens.

Pregnancy
Category B
Animal reproduction studies have failed to demonstrate a risk to the fetus and there are no adequate and well-controlled studies in pregnant women.

Newborns and Infants
When Clindamycin is administered to newborns and infants, appropriate monitoring of organ system functions is desirable.

Nursing Mother
Clindamycin has been reported to appear in breast milk in ranges of 0.7 to 3.8 mcg/ml

Meningitis
Since Clindamycin does not diffuse adequately into the cerebrospinal fluid, the drug should not be used in the treatment of meningitis.

Antagonism has been demonstrated between Clindamycin and erythromycin in vitro. Because of possible clinical significance, these two drugs should not be administered concurrently.

Adverse Reactions
The following reactions have been reported with the use of Clindamycin.

Gastrointestinal
Abdominal pain, esophagitis, nausea, vomiting, and diarrhea. .

Hypersensitivity Reactions
Maculopapular rash and urticaria have been observed during drug therapy. Generalized mild to moderate morbilliform-like skin rashes are the most frequently reported of all adverse reactions. Rare instances of erythema multiforme, some resembling Stevens-Johnson syndrome, have been associated with Clindamycin. A few cases of anaphylactoid reactions have been reported. If a hypersensitivity reaction occurs, the drug should be discontinued. The usual agents (epinephrine, corticosteroids, and antihistamines) should be available for emergency treatment of serious reactions.

Liver Jaundice and abnormalities in liver function tests have been observed during Clindamycin therapy. Renal although no direct relationship of Clindamycin to renal damage has been established; renal dysfunction as evidenced by azotemia, oliguria, and/or proteinuria has been observed in rare instances

Hematopoietic

Transient neutropenia (leukopenia) and eosinophilia have been reported. Reports of agranulocytosis and thrombocytopenia have been made. No direct etiologic relationship to concurrent Clindamycin therapy could be made in any of the foregoing.

Musculoskeletal
Rare instances of polyarthritis have been reported.

Precautions
Review of experience to date suggests that a subgroup of older patients with associated severe illness may tolerate diarrhea less well. When Clindamycin is indicated in these patients, they should be carefully monitored for change in bowel frequency.

Clindamycin should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Clindamycin should be prescribed with caution in atopic individuals.
During prolonged therapy, periodic liver and kidney function tests and blood counts should be performed Indicated surgical procedures should be performed in conjunction with antibiotic therapy. The use of Clindamycin occasionally results in overgrowth of non-susceptible organism particularly yeasts. Should Super infections occur appropriate measures should be taken as indicated by the clinical situation?

Patients with very severe renal disease and/or very severe hepatic disease accompanied by severe metabolic aberrations should be dosed with caution, and serum Clindamycin levels monitored during high-dose therapy.

Clindamycin has been shown to have neuromuscular blocking properties that may enhance the action of other neuromuscular blocking agents. Therefore, it should be used with caution in-patients receiving such agents.

Drug Interactions
Drug interactions between the following medicines and Clindamycin leading to the decrease of the effect of Clindamycin: chloramphenicol and diarrhea medicines containing Kaolin or ottaplugie. On the other hand, antagonism has occurred in vitro between erythromycin and Clindamycin.

Dosage and Administration
If significant diarrhea occurs during therapy, this antibiotic should be discontinued.

Adults
Serious infection -150 to 300 mg every 6 hours.
More severe infections 300 to 450 mg every 6 hours.

Children
Serious infections 8 to 16 mg/kg/day (4 to 8 mg/lb/day) divided into three or four equal doses. More severe infections 16 to 20 mg/kg/day (8 to 10 mg/1b/day) divided into three or four equal doses to avoid the possibility of esophageal irritation, Clindacin capsules should be taken with a full glass of water.

In cases of, B-hemolytic streptococcal infections, treatment should continue for at least 10 days.

Clindacin should be taken with a full glass of water or with meals to prevent irritation of esophagus.

Over Dosage
Over dose unlikely to be threatening.

Presentation

Box of 16 capsules.