CLINDAMYCIN IN 5 PERCENT DEXTROSE- clindamycin injection, solution
Sandoz Inc

Clindamycin in 5% Dextrose Injection

Rx Only

To reduce the development of drug-resistant bacteria and maintain the effectiveness of clindamycin in 5% dextrose injection and other antibacterial drugs, clindamycin in 5% dextrose injection should be used only to treat or prevent infections that are proven or strongly suspected to be caused by bacteria.

Sterile Solution is for Intravenous Use

WARNING

Clostridium difficile associated diarrhea (CDAD) has been reported with use of nearly all antibacterial agents, including clindamycin in 5% dextrose injection and may range in severity from mild diarrhea to fatal colitis. Treatment with antibacterial agents alters the normal flora of the colon leading to overgrowth of *C. difficile*.

Because clindamycin in 5% dextrose injection therapy has been associated with severe colitis which may end fatally, it should be reserved for serious infections where less toxic antimicrobial agents are inappropriate, as described in the **INDICATIONS AND USAGE** section. It should not be used in patients with nonbacterial infections such as most upper respiratory tract infections. *C. difficile* produces toxins A and B which contribute to the development of CDAD. Hypertoxin producing strains of *C. difficile* cause increased morbidity and mortality, as these infections can be refractory to antimicrobial therapy and may require colectomy. CDAD must be considered in all patients who present with diarrhea following antibiotic use. Careful medical history is necessary since CDAD has been reported to occur over two months after the administration of antibacterial agents.

If CDAD is suspected or confirmed, ongoing antibiotic use not directed against C. difficile may need to be discontinued. Appropriate fluid and electrolyte management, protein supplementation, antibiotic treatment of *C. difficile*, and surgical evaluation should be instituted as clinically indicated.

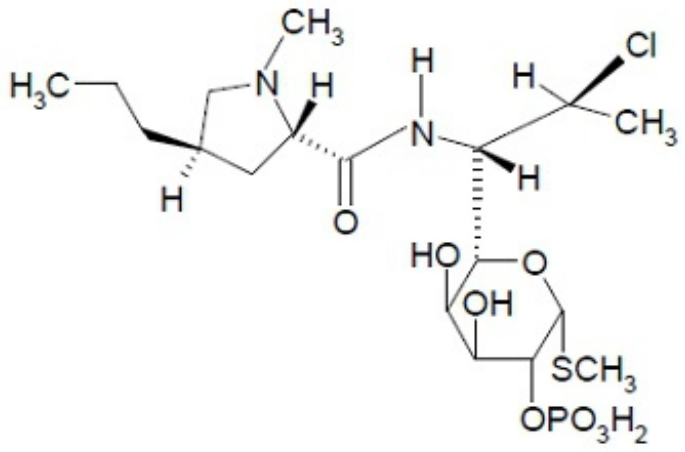
DESCRIPTION

Clindamycin in 5% dextrose injection in the Cryovac plastic container for intravenous use is composed of clindamycin phosphate equivalent to 300, 600 and 900 mg of clindamycin premixed with 5% dextrose as a sterile solution. Disodium edetate has been added at a concentration of 0.04 mg/mL. The pH has been adjusted with sodium hydroxide and/or hydrochloric acid. Clindamycin is a semisyntheric antibiotic produced by a 7(S)-chloro-substitution of the 7(R)-hydroxyl group of the parent compound lincomycin.

The chemical name of clindamycin phosphate is L-*threo*-*α*-D-*galacto*- Octopyranoside, methyl 7-chloro-6,7,8-trideoxy-6-[[(1-methyl-4-propyl-2- pyrrolidinyl) carbonyl] amino]-1-thio-, 2-(dihydrogen phosphate), (2*S*-*trans*)-.

The molecular formula is $C_{18}H_{34}CIN_20_8PS$ and the molecular weight is 504.97.

The structural formula is represented below:



The plastic container is fabricated from a specially designed multilayer plastic, M312A material. Solutions in contact with the plastic container can leach out certain of its chemical components in very small amounts within the expiration period. The suitability of the plastic has been confirmed in tests in animals according to the USP biological tests for plastic containers, as well as by tissue culture toxicity studies.

CLINICAL PHARMACOLOGY

Distribution

Biologically inactive clindamycin phosphate is converted to active clindamycin. By the end of short-term intravenous infusion, peak serum levels of active clindamycin are reached.

After intramuscular injection of clindamycin phosphate, peak levels of active clindamycin are reached within 3 hours in adults and 1 hour in pediatric patients. Serum level curves may be constructed from IV peak serum levels as given in Table 1 by application of elimination half-lives (see **Excretion**).

Serum levels of clindamycin can be maintained above the *in vitro* minimum inhibitory concentrations for most indicated organisms by administration of clindamycin phosphate every 8 to 12 hours in adults and every 6 to 8 hours in pediatric patients, or by continuous intravenous infusion. An equilibrium state is reached by the third dose.

No significant levels of clindamycin are attained in the cerebrospinal fluid even in the presence of inflamed meninges.

Excretion

Biologically inactive clindamycin phosphate disappears rapidly from the serum; the average elimination half-life is 6 minutes; however, the serum elimination half-life of active clindamycin is about 3 hours in adults and 2½ hours in pediatric patients.

Special Population

Renal/Hepatic Impairment

The elimination half-life of clindamycin is increased slightly in patients with markedly reduced renal or hepatic function. Hemodialysis and peritoneal dialysis are not effective in removing clindamycin from the serum. Dosage schedules need not be modified in the presence of mild or moderate renal or hepatic disease.

Use in Elderly

Pharmacokinetic studies in elderly volunteers (61 to 79 years) and younger adults (18 to 39 years) indicate that age alone does not alter clindamycin pharmacokinetics (clearance, elimination half-life,

volume of distribution, and area under the serum concentration-time curve) after IV administration of clindamycin phosphate. After oral administration of clindamycin hydrochloride, elimination half-life is increased to approximately 4 hours (range 3.4 to 5.1 h) in the elderly compared to 3.2 hours (range 2.1 to 4.2 h) in younger adults. The extent of absorption, however, is not different between age groups and no dosage alteration is necessary for the elderly with normal hepatic function and normal (age-adjusted) renal function[1].

Serum assays for active clindamycin require an inhibitor to prevent *in vitro* hydrolysis of clindamycin phosphate.

Table 1. Average Peak and Trough Serum Concentrations of Active Clindamycin After Dosing with Clindamycin Phosphate

Dosage Regimen	Peak mcg/mL	Trough mcg/mL
Healthy Adult Males (Post equilibrium)		
600 mg IV in 30 min q6h	10.9	2
600 mg IV in 30 min q8h	10.8	1.1
900 mg IV in 30 min q8h	14.1	1.7
Pediatric Patients (first dose)*		
5–7 mg/kg IV in 1 hour	10	

* Data in this group from patients being treated for infection.

Microbiology

Clindamycin inhibits bacterial protein synthesis by binding to the 50S subunit of the ribosome. It has activity against Gram-positive aerobes and anaerobes, as well as some Gram-negative anaerobes. Clindamycin is bacteriostatic. Cross-resistance between clindamycin and lincomycin is complete. Antagonism *in vitro* has been demonstrated between clindamycin and erythromycin. Clindamycin inducible resistance has been identified in macrolide-resistant staphylococci and beta-hemolytic streptococci. Macrolide-resistant isolates of these organisms should be screened for clindamycin inducible resistance using the D-zone test.

Clindamycin has been shown to be active against most of the isolates of the following microorganisms, both *in vitro* and in clinical infections, as described in the INDICATIONS and USAGE section.

Gram-positive Aerobes

Staphylococcus aureus (methicillin-susceptible strains)
Streptococcus pneumoniae (penicillin-susceptible strains)
Streptococcus pyogenes

Anaerobes

Prevotella melaninogenica
Fusobacterium necrophorum
Fusobacterium nucleatum
Peptostreptococcusanaerobius
Clostridium perfringens

At least 90% of the microorganisms listed below exhibit *in vitro* minimum inhibitory concentrations (MICs) less than or equal to the clindamycin susceptible MIC breakpoint for organisms of a similar type to those shown in Table 2. However, the efficacy of clindamycin in treating clinical infections due to

these microorganisms has not been established in adequate and well-controlled clinical trials.

Gram-positive aerobes

Staphylococcus epidermidis (methicillin-susceptible strains)
Streptococcus agalactiae
Streptococcus anginosu
Streptococcus oralis
Streptococcus mitis

Anaerobes

Prevotellaintermedia
Prevotellabivia
Propionibacterium acnes
Micromonas ("Peptostreptococcus") micros
Finegoldia ("Peptostreptococcus") magna
Actinomycesisraelii
Clostridium clostridioforme
Eubacteriumlentum

Susceptibility Testing Methods

When available, the clinical microbiology laboratory should provide cumulative *in vitro* susceptibility test results for antimicrobial drugs used in local hospitals and practice areas to the physician as periodic reports that describe the susceptibility profile of nosocomial and community-acquired pathogens. These reports should aid the physician in selecting the most effective antimicrobial.

Dilution Techniques

Quantitative methods are used to determine antimicrobial minimum inhibitory concentrations (MICs). These MICs provide estimates of the susceptibility of bacteria to antimicrobial compounds. The MICs should be determined using a standardized procedure based on dilution methods (broth, agar or microdilution)[2,3]or equivalent using standardized inoculum and concentrations of clindamycin. The MIC values should be interpreted according to the criteria provided in **Table 2**.

Diffusion Techniques

Quantitave methods that require the measurement of zone diameters also provide reproducible estimates of the susceptibility of bacteria to antimicrobial compounds. The standardized procedure[2,4]requires the use of standardized inoculum concentrations. This procedure uses paper disks impregnated with 2 mcg of clindamycin to test the susceptibility of microorganisms to clindamycin. Reports from the laboratory providing results of the standard single-disk susceptibility test with a 2 mcg clindamycin disk should be interpreted according to the criteria in **Table 2.**

Table 2. Susceptibility Interpretive Criteria for Clindamycin

Pathogen	Susceptibility Interpretive Criteria					
	Minimal Inhibitory Concentrations (MIC in mcg/mL)			Disk Diffusion (Zone Diameters in mm)		
Staphylococcus spp.	S ≤ 0.5	I 1 to 2	R ≥4	S ≥21	I 15 to 20	R ≤14
Streptococcus pneumoniae and						

Streptococcus pneumoniae and other *Streptococcus spp*.	≤0.25	0.5	≥1	≥19	16 to 18	≤ 15
Anaerobic Bacteria	≤2	4	≥8	NA	NA	NA

NA = not applicable

A report of "Susceptible" indicates that the pathogen is likely to be inhibited if the antimicrobial compound in the blood reaches the concentrations usually achievable. A report of "Intermediate" indicates that the result should be considered equivocal, and, if the microorganism is not fully susceptible to alternative, clinically feasible drugs, the test should be repeated. This category implies possible clinical applicability in body sites where the drug is physiologically concentrated or in situations where high dosage of drug can be used. This category also provides a buffer zone that prevents small, uncontrolled technical factors from causing major discrepancies in interpretation.

A report of "Resistant" indicates that the pathogen is not likely to be inhibited if the antimicrobial compound in the blood reaches the concentrations usually achievable; other therapy should be selected.

Quality Control

Standardized susceptibility test procedures require the use of laboratory controls to monitor and ensure the accuracy and precision of the supplies and reagents used in the assay, and the techniques of the individuals performing the test.[2,3,4,5] Standard clindamycin powder should provide the MIC ranges in **Table 3**. For the disk diffusion technique using the 2 mcg clindamycin disk the criteria provided in **Table 2** should be achieved.

Table 3. Acceptable Quality Control Ranges for Clindamycin to be Used in Validation of Susceptibility Test Results

QC Strain	Acceptable Quality Control Ranges	
	Minimum Inhibitory Concentration Range (mcg/mL)	**Disk Diffusion Range (Zone Diameters in mm)**
When Testing Aerobic Pathogens		
Staphylococcus aureus ATCC 29213	0.06 to 0.25	NA
Staphylococcus aureus ATCC 25923	NA	24 to 30
Streptococcus pneumoniae ATCC 49619	0.03 to 0.12	19 to 25
When Testing Anaerobes		
Bacteroidesfragilis ATCC 25285	0.5 to 2	NA
Bacteroidesthetaiotaomicron ATCC 29741	2 to 8	NA
Eubacteriumlentum ATCC 43055	0.06 to 0.25	NA

NA = Not applicable

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INDICATIONS AND USAGE

Clindamycin in 5% dextrose injection is indicated in the treatment of serious infections caused by susceptible anaerobic bacteria.

Clindamycin in 5% dextrose injection 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, a penicillin is inappropriate. Because of the risk of antibiotic-associated pseudomembranous colitis, as described in the WARNING box, before selecting clindamycin the physician should consider the nature of the infection and the suitability of less toxic alternatives (e.g., erythromycin).

Bacteriologic studies should be performed to determine the causative organisms and their susceptibility to clindamycin.

Indicated surgical procedures should be performed in conjunction with antibiotic therapy.

Clindamycin in 5% dextrose injection is indicated in the treatment of serious infections caused by susceptible strains of the designated organisms in the conditions listed below:

Lower respiratory tract infections including pneumonia, empyema, and lung abscess caused by anaerobes, *Streptococcus pneumoniae*, other streptococci (except *E. faecalis*), and *Staphylococcus aureus*.

Skin and skin structure infections caused by *Streptococcus pyogenes*, *Staphylococcus aureus*, and anaerobes.

Gynecological infections including endometritis, nongonococcal tubo-ovarian abscess, pelvic cellulitis, and postsurgical vaginal cuff infection caused by susceptible anaerobes.

Intra-abdominal infections including peritonitis and intra-abdominal abscess caused by susceptible anaerobic organisms.

Septicemia caused by *Staphylococcus aureus*, streptococci (except *Enterococcus faecalis*), and susceptible anaerobes.

Bone and joint infections including acute hematogenous osteomyelitis caused by *Staphylococcus aureus* and as adjunctive therapy in the surgical treatment of chronic bone and joint infections due to susceptible organisms.

To reduce the development of drug-resistant bacteria and maintain the effectiveness of clindamycin in 5% dextrose injection and other antibacterial drugs, clindamycin in 5% dextrose injection should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria. When culture and susceptibility information are available, they should be considered in selecting or modifying antibacterial therapy. In the absence of such data, local epidemiology and susceptibility patterns may contribute to the empiric selection of therapy.

CONTRAINDICATIONS

This drug is contraindicated in individuals with a history of hypersensitivity to preparations containing clindamycin or lincomycin.

WARNINGS

See **WARNING** box.

Clostridium difficile associated diarrhea (CDAD) has been reported with use of nearly all antibacterial agents, including clindamycin in 5% dextrose injection, and may range in severity from mild diarrhea to fatal colitis. Treatment with antibacterial agents alters the normal flora of the colon leading to overgrowth of *C. difficile*.

C. difficile produces toxins A and B which contribute to the development of CDAD. Hypertoxin producing strains of *C. difficile* cause increased morbidity and mortality, as these infections can be refractory to antimicrobial therapy and may require colectomy. CDAD must be considered in all patients who present with diarrhea following antibiotic use. Careful medical history is necessary since CDAD

has been reported to occur over two months after the administration of antibacterial agents.

If CDAD is suspected or confirmed, ongoing antibiotic use not directed against *C. difficile* may need to be discontinued. Appropriate fluid and electrolyte management, protein supplementation, antibiotic treatment of *C. difficile*, and surgical evaluation should be instituted as clinically indicated.

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

Usage in Meningitis

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

SERIOUS ANAPHYLACTOID REACTIONS REQUIRE IMMEDIATE EMERGENCY TREATMENT WITH EPINEPHRINE. OXYGEN AND INTRAVENOUS CORTICOSTEROIDS SHOULD ALSO BE ADMINISTERED AS INDICATED.

PRECAUTIONS

General

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 in 5% dextrose injection should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Clindamycin in 5% dextrose injection should be prescribed with caution in atopic individuals.

Certain infections may require incision and drainage or other indicated surgical procedures in addition to antibiotic therapy.

The use of clindamycin in 5% dextrose injection may result in overgrowth of nonsusceptible organisms particularly yeasts. Should superinfections occur, appropriate measures should be taken as indicated by the clinical situation.

Clindamycin in 5% dextrose injection should not be injected intravenously undiluted as a bolus, but should be infused over at least 10 to 60 minutes as directed in the **DOSAGE AND ADMINISTRATION** section.

Clindamycin dosage modification may not be necessary in patients with renal disease. In patients with moderate to severe liver disease, prolongation of clindamycin half-life has been found. However, it was postulated from studies that when given every eight hours, accumulation should rarely occur. Therefore, dosage modification in patients with liver disease may not be necessary. However, periodic liver enzyme determinations should be made when treating patients with severe liver disease.

Prescribing clindamycin in 5% dextrose injection in the absence of a proven or strongly suspected bacterial infection or a prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

Information for Patients

Patients should be counseled that antibacterial drugs including clindamycin in 5% dextrose injection should only be used to treat bacterial infections. They do not treat viral infections (e.g., the common cold). When clindamycin in 5% dextrose injection is prescribed to treat a bacterial infection, patients should be told that although it is common to feel better early in the course of therapy, the medication should be taken exactly as directed. Skipping doses or not completing the full course of therapy may (1) decrease the effectiveness of the immediate treatment and (2) increase the likelihood that bacteria will develop resistance and will not be treatable by clindamycin in 5% dextrose injection or other

antibacterial drugs in the future.

Diarrhea is a common problem caused by antibiotics which usually ends when the antibiotic is discontinued. Sometimes after starting treatment with antibiotics, patients can develop watery and bloody stools (with or without stomach cramps and fever) even as late as two or more months after having taken the last dose of the antibiotic. If this occurs, patients should contact their physician as soon as possible.

Laboratory Tests

During prolonged therapy periodic liver and kidney function tests and blood counts should be performed.

Drug Interactions

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.

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

Carcinogenesis, Mutagenesis, Impairment of Fertility

Long term studies in animals have not been performed with clindamycin to evaluate carcinogenic potential. Genotoxicity tests performed included a rat micronucleus test and an Ames Salmonella reversion test. Both tests were negative.

Fertility studies in rats treated orally with up to 300 mg/kg/day (approximately 1.1 times the highest recommended adult human dose based on mg/m^2) revealed no effects on fertility or mating ability.

Pregnancy

Teratogenic Effects

Pregnancy category B

Reproduction studies performed in rats and mice using oral doses of clindamycin up to 600 mg/kg/day (2.1 and 1.1 times the highest recommended adult human dose based on mg/m^2, respectively) or subcutaneous doses of clindamycin up to 250 mg/kg/day (0.9 and 0.5 times the highest recommended adult human dose based on mg/m^2, respectively) revealed no evidence of teratogenicity.

There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of the human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers

Clindamycin has been reported to appear in breast milk in the range of 0.7 to 3.8 mcg/mL at dosages of 150 mg orally to 600 mg intravenously. Because of the potential for adverse reactions due to clindamycin in neonates (see Pediatric Use), the decision to discontinue the drug should be made, taking into account the importance of the drug to the mother.

Pediatric Use

When clindamycin in 5% dextrose injection sterile solution is administered to the pediatric population (birth to 16 years) appropriate monitoring of organ system functions is desirable.

Usage in Newborns and Infants

The potential for the toxic effect in the pediatric population from chemicals that may leach from the

single dose premixed IV preparation in plastic has not been evaluated.

Geriatric Use

Clinical studies of clindamycin did not include sufficient numbers of patients age 65 and over to determine whether they respond differently from younger patients. However, other reported clinical experience indicates that antibiotic-associated colitis and diarrhea (due to *Clostridium difficile*) seen in association with most antibiotics occur more frequently in the elderly (>60 years) and may be more severe. These patients should be carefully monitored for the development of diarrhea.

Pharmacokinetic studies with clindamycin have shown no clinically important differences between young and elderly subjects with normal hepatic function and normal (age-adjusted) renal function after oral or intravenous administration.

ADVERSE REACTIONS

The following reactions have been reported with the use of clindamycin.

Gastrointestinal

Antibiotic-associated colitis (see **WARNINGS**), pseudomembranous colitis, abdominal pain, nausea, and vomiting. The onset of pseudomembranous colitis symptoms may occur during or after antibacterial treatment (see **WARNINGS**). An unpleasant or metallic taste occasionally has been reported after intravenous administration of the higher doses of clindamycin phosphate.

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, antihistamines) should be available for emergency treatment of serious reactions.

Skin and Mucous Membranes

Pruritus, vaginitis, and rare instances of exfoliative dermatitis have been reported (see **Hypersensitivity 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.

Local Reactions

Thrombophlebitis have been reported after intravenous infusion. Reactions can be minimized by avoiding prolonged use of indwelling intravenous catheters.

Musculoskeletal

Rare instances of polyarthritis have been reported.

Cardiovascular

Rare instances of cardiopulmonary arrest and hypotension have been reported following too rapid intravenous administration. (See **DOSAGE AND ADMINISTRATION** section.)

OVERDOSAGE

Significant mortality was observed in mice at an intravenous dose of 855 mg/kg and in rats at an oral or subcutaneous dose of approximately 2618 mg/kg. In the mice, convulsions and depression were observed.

Hemodialysis and peritoneal dialysis are not effective in removing clindamycin from the serum.

DOSAGE AND ADMINISTRATION

If diarrhea occurs during therapy, this antibiotic should be discontinued (see **WARNING** box).

Adults: Parenteral (IV Administration): Serious infections due to aerobic gram-positive cocci and the more susceptible anaerobes (NOT generally including *Bacteroidesfragilis, Peptococcus* species and *Clostridium* species other than *Clostridium perfringens*):

600 to 1200 mg/day in 2, 3 or 4 equal doses.

More severe infections, particularly those due to proven or suspected*Bacteroidesfragilis, Peptococcus* species, or *Clostridium* species other than *Clostridium perfringens*:

1200 to 2700 mg/day in 2, 3 or 4 equal doses.

For more serious infections, these doses may have to be increased. In life-threatening situations due to either aerobes or anaerobes these doses may be increased. Doses of as much as 4800 mg daily have been given intravenously to adults. See **Infusion Rates** section below.

Alternatively, drug may be administered in the form of a single rapid infusion of the first dose followed by continuous IV infusion as follows:

To Maintain Serum Clindamycin Levels	Rapid Infusion Rate	Maintenance Infusion Rate
Above 4 mcg/mL	10 mg/min for 30 min	0.75 mg/min
Above 5 mcg/mL	15 mg/min for 30 min	1 mg/min
Above 6 mcg/mL	20 mg/min for 30 min	1.25 mg/min

Neonates (less than 1 month):

15 to 20 mg/kg/day in 3 to 4 equal doses. The lower dosage may be adequate for small prematures.

Pediatric patients 1 month of age to 16 years: Parenteral (IV) administration: 20 to 40 mg/kg/day in 3 or 4 equal doses. The higher doses would be used for more severe infections. As an alternative to dosing on a body weight basis, pediatric patients may be dosed on the basis of square meters body surface: 350 mg/m^2/day for serious infections and 450 mg/m^2/day for more severe infections.

Parenteral therapy may be changed to oral clindamycin palmitate hydrochloride powder for oral solution or clindamycin hydrochloride capsule when the condition warrants and at the discretion of the physician.

In cases of β-hemolytic streptococcal infections, treatment should be continued for at least 10 days.

Infusion Rates

Infusion rates for clindamycin in 5% dextrose injection should not exceed 30 mg per minute. The usual infusion rates are as follows:

Dose	Strength	Time
300 mg/50 mL	6 mg/mL	10 min
600 mg/50 mL	12 mg/mL	20 min
900 mg/50 mL	18 mg/mL	30 min

Administration of more than 1200 mg in a single 1-hour infusion is not recommended.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit.

DIRECTIONS FOR USE

Clindamycin in 5% dextrose injection in Cryovac Plastic Container

Premixed clindamycin in 5% dextrose injection is for intravenous administration using sterile equipment. Check for minute leaks prior to use by squeezing bag firmly. If leaks are found, discard solution as sterility may be impaired. Do not add supplementary medication. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit. Do not use unless solution is clear and seal is intact.

Caution: Do not use plastic containers in series connections. Such use could result in air embolism due to residual air being drawn from the primary container before administration of the fluid from the secondary container is complete.

Preparation for Administration:

1. Suspend container from eyelet support.
2. Remove protector from outlet port at bottom of container.
3. Attach administration set. Refer to complete directions accompanying set.

HOW SUPPLIED

Clindamycin in 5% dextrose injection in Cryovac plastic containers is a sterile solution of clindamycin phosphate with 5% dextrose. Each 50 mL contains clindamycin phosphate equivalent to 300 mg, 600 mg or 900 mg clindamycin. The single dose Cryovac plastic containers are available as follows:

300 mg/50 mL, Carton of 24 minibags	NDC 0781-3288-09
600 mg/50 mL, Carton of 24 minibags	NDC 0781-3289-09
900 mg/50 mL, Carton of 24 minibags	NDC 0781-3290-09

Exposure of pharmaceutical products to heat should be minimized. It is recommended that Cryovac plastic containers be stored at 20° to 25°C (68° to 77°F) [see USP Controlled Room Temperature]. Avoid temperatures above 30° C.

ANIMAL TOXICOLOGY

One year oral toxicity studies in Spartan Sprague-Dawley rats and beagle dogs at dose levels up to 300 mg/kg/day (approximately 1.1 and 3.6 times the highest recommended adult human dose based on mg/m^2, respectively) have shown clindamycin to be well tolerated. No appreciable difference in pathological

findings has been observed between groups of animals treated with clindamycin and comparable control groups. Rats receiving clindamycin hydrochloride at 600 mg/kg/day (approximately 2.1 times the highest recommended adult human dose based on mg/m^2) for 6 months tolerated the drug well; however, dogs dosed at this level (approximately 7.2 times the highest recommended adult human dose based on mg/m^2) vomited, would not eat, and lost weight.

REFERENCES

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2. CLSI. *Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria that Grow Aerobically; Approved Standard* – Eighth Edition. CLSI document M07-A8. Wayne, PA: Clinical and Laboratory Standards Institute: 2009.
3. CLSI. *Performance Standards for Antimicrobial Disk Susceptibility Tests; Approved Standard – Tenth Edition.* CLSI document M02-A10. Wayne, PA: Clinical and Laboratory Standards Institute: 2009.

CLSI. *Methods for Antimicrobial Susceptibility Testing of Anaerobic Bacteria; Approved Standard-Seventh Edition.* CLSI document M11-A7. Wayne, PA: Clinical and Laboratory Standards Institute; 2007.

Manufactured in Switzerland by ACS Dobfar Info S.A.

for Sandoz Inc., Princeton NJ 08540

Rev. May 2012

Package/Label Display Panel

NDC 0781-3288-91

Clindamycin Injection

In 5% Dextrose

300 mg/50 mL

For Intravenous Use

Single Dose Container

Package/Label Display Panel

NDC 0781-3290-91

Clindamycin Injection

In 5% Dextrose

900 mg/50 mL

For Intravenous Use

Single Dose Container

Package/Label Display Panel

NDC 0781-3289-91

Clindamycin Injection

In 5% Dextrose

600 mg/50 mL

For Intravenous Use

Single Dose Container

CLINDAMYCIN IN 5 PERCENT DEXTROSE

clindamycin in 5 percent dextrose injection, solution

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG LABEL	**Item Code (Source)**	NDC:0781-3288
Route of Administration	INTRAVENOUS	**DEA Schedule**	

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
CLINDAMYCIN (CLINDAMYCIN)	CLINDAMYCIN	6 mg in 1 mL

Inactive Ingredients	
Ingredient Name	**Strength**
DEXTROSE MONOHYDRATE	50 mg in 1 mL
EDETATE DISODIUM	0.04 mg in 1 mL
HYDROCHLORIC ACID	

SODIUM HYDROXIDE	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3288-09	24 in 1 CARTON		
1	NDC:0781-3288-91	50 mL in 1 BAG		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA201692	02/07/2013	

CLINDAMYCIN IN 5 PERCENT DEXTROSE

clindamycin in 5 percent dextrose injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG LABEL	**Item Code (Source)**	NDC:0781-3289
Route of Administration	INTRAVENOUS	**DEA Schedule**	

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
CLINDAMYCIN (CLINDAMYCIN)	CLINDAMYCIN	12 mg in 1 mL

Inactive Ingredients

Ingredient Name	Strength
DEXTROSE MONOHYDRATE	50 mg in 1 mL
EDETATE DISODIUM	0.04 mg in 1 mL
HYDROCHLORIC ACID	
SODIUM HYDROXIDE	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3289-09	24 in 1 CARTON		
1	NDC:0781-3289-91	50 mL in 1 BAG		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA201692	02/07/2013	

CLINDAMYCIN IN 5 PERCENT DEXTROSE

clindamycin in 5 percent dextrose injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG LABEL	**Item Code (Source)**	NDC:0781-3290
Route of Administration	INTRAVENOUS	**DEA Schedule**	

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
CLINDAMYCIN (CLINDAMYCIN)	CLINDAMYCIN	18 mg in 1 mL

Inactive Ingredients

Ingredient Name	Strength
DEXTROSE MONOHYDRATE	50 mg in 1 mL
EDETATE DISODIUM	0.04 mg in 1 mL
HYDROCHLORIC ACID	
SODIUM HYDROXIDE	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3290-09	24 in 1 CARTON		
1	NDC:0781-3290-91	50 mL in 1 BAG		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA201692	02/07/2013	

Labeler - Sandoz Inc (110342024)

Revised: 5/2012 Sandoz Inc