

## **LB-NIR DRY SYRUP**

### **COMPOSITION**

Each 5 ml of the reconstituted suspension contains:

Cefdinir	125 mg
Lactic Acid Bacillus spores	45 million

### **ANTIBACTERIAL SPECTRUM:**

Cefdinir is an extended-spectrum, semi-synthetic cephalosporin. It acts by inhibiting the bacterial cell wall synthesis. Cefdinir is active against most strains of the following microorganisms:

#### **Aerobic Gram-Positive Microorganism:**

- \* *Staphylococcus aureus* (including beta-lactamase producing strains, excluding methicillin-resistant staphylococci)
- \* *Streptococcus pneumoniae* (penicillin-susceptible strains only)
- \* *Streptococcus Pyogenes*

#### **Aerobic Gram-Negative Microorganisms:**

- \* *Haemophilus influenzae* (including beta-lactamase producing strains)
- \* *Haemophilus parainfluenzae* (including beta-lactamase producing strains)
- \* *Moraxella catarrhalis* (including beta-lactamase producing strains)
- \* *Citrobacter freundii*
- \* *E.coli*
- \* *Klebsiella pneumoniae*
- \* *Proteus mirabilis*

### **PHARMACOKINETICS**

**Absorption:** Following oral administration of cefdinir suspension, the estimated oral bioavailability is 25%. The peak plasma concentration  $C_{max}$  is attained in 2-4 hours  $T_{max}$  following suspension administration. Cefdinir does not accumulate following once or twice daily administration to subjects with normal renal function.

Cefdinir plasma concentrations and pharmacokinetic parameter values following administration of single 7mg and 14mg/kg oral dose to pediatric subjects (age 6 months – 12 years) are presented in the following table:

<b>Mean (<math>\pm</math> SD) Plasma Cefdinir Pharmacokinetic Parameter Values Following Administration of Suspension to Pediatric Subjects</b>			
<b>Dose</b>	<b>C<sub>max</sub> (<math>\mu</math>g/mL)</b>	<b>T<sub>max</sub> (hr)</b>	<b>AUC (<math>\mu</math>g hr/mL)</b>
<b>7 mg/ kg</b>	2.30 (0.65)	2.2 (0.6)	8.31 (2.50)
<b>14 mg/ kg</b>	3.86 (0.62)	1.8 (0.4)	13.4 (2.64)

#### **Distribution**

Cefdinir is 60% to 70% bound to plasma proteins in both adults and children. Cefdinir is well distributed to tonsils, sinuses, lungs, skin blister fluid and middle ear fluid.

#### **Metabolism & Excretion**

Cefdinir undergoes minimal metabolism. Activity is primarily due to parent drug. It is eliminated principally

via renal excretion with a mean plasma elimination half-life ( $t_{1/2}$ ) of 1.7 hours.

## **CONTRAINDICATIONS**

Cefdinir is contraindicated in patients with known allergy to the cephalosporin class of antibiotics.

## **WARNINGS & PRECAUTIONS**

Caution is recommended before initiating therapy with cefdinir in patients with previous hypersensitivity reactions to cefdinir, other cephalosporins, penicillins, or other drugs. Care should be taken while giving cefdinir to penicillin-sensitive patients, because cross-sensitivity among beta-lactam antibiotics may occur. If an allergic reaction to cefdinir occurs, the drug should be discontinued and the patient treated with epinephrine and other emergency measures, including oxygen, IV fluids, IV antihistamines, corticosteroids, pressor amines, as clinically indicated.

Mild to severe Pseudomembranous colitis has been reported with all antibacterial agents including cefdinir due to toxin produced by *Clostridium difficile*. Therefore, patients who develop diarrhea following antibacterial therapy should be diagnosed for Pseudomembranous colitis and treated appropriately. Cefdinir should be given cautiously to individuals with a history of colitis.

### **Use in Patients with Impaired Liver Function**

Studies in patients with hepatic impairment have not been conducted. However, cefdinir undergoes minimum metabolism and is eliminated predominantly by kidneys.

### **Use in Patients with Impaired Kidney Function**

For pediatric patients with creatinine clearance  $< 30$  mL/min/1.73 m<sup>2</sup>, the dose of cefdinir should be 7mg/kg (up to 300 mg) once daily.

### **Patients on Haemodialysis**

Cefdinir is removed from the body by haemodialysis. In patients maintained on chronic haemodialysis, the recommended initial dose is 7mg/kg dose on alternate days. At the conclusion of each haemodialysis session, 7mg/kg should be given. Subsequent doses are then administered every other day.

## **DRUG INTERACTIONS**

### **Aluminium or magnesium containing antacids**

Concomitant administration of cefdinir with antacids results in reduced rate and extent of absorption by approximately 40%. Therefore, cefdinir should be taken at least 2 hours before or after the antacids.

### **Probenecid**

Probenecid inhibits the renal excretion of cefdinir resulting in increased plasma levels and decreased elimination of cefdinir.

### **Iron supplements and foods fortified with iron**

Concomitant administration of cefdinir with iron supplements or vitamins containing elemental iron results in reduced absorption. Thus, cefdinir should be taken at least 2 hours before or after the supplement.

### **With Foods**

There is no clinically significant reduction in the absorption of cefdinir when administered with high fat meal. It may therefore be taken without regard to food.

### **With Laboratory Tests**

Cefdinir may give a false-positive reaction for ketones in urine with tests using nitroprusside but not with

those using nitroferricyanide. Cefdinir may give a false-positive reaction for glucose in urine using Benedict's solution or Fehling's solution. It is recommended that glucose tests based on enzymatic glucose oxidase reactions be used. Cephalosporins are known to occasionally induce a positive direct Coomb's test.

**ADVERSE EFFECTS**

Most adverse events are mild and self-limiting. The most common side effects encountered in clinical trials were gastrointestinal disturbances, usually diarrhea, nausea, vomiting, abdominal pain and rash [primarily diaper rash in the younger patients).

**Cephalosporin Class Adverse Events**

The following adverse events and altered laboratory tests have been reported for cephalosporin-class antibiotics in general.

Allergic reaction, anaphylaxis, Steven-Johnson syndrome erythema multiforme, toxic epidermal necrolysis, renal dysfunction toxic nephropathy, hepatic dysfunction including cholestasis aplastic anemia, hemolytic anemia, hemorrhage, false positive test for urinary glucose, neutropenia, pancytopenia and agranulocytosis. Pseudomembranous colitis symptoms may begin during or after antibiotic treatment.

**INDICATIONS**

**LB NIR Suspension** is indicated for the treatment of:

- \* **Acute Bacterial Otitis Media** caused by *Haemophilus influenzae* (including Beta-lactamase producing strains), *Streptococcus pneumoniae* (penicillin-susceptible strains only), and *Moraxella catarrhalis* (including Beta-lactamase producing strains).
- \* **Pharyngitis/Tonsillitis** caused by *Streptococcus pyogenes*.

**NOTE:** Cefdinir is effective in the eradication of *S. pyogenes* from the oropharynx. Cefdinir has not, however, been studied for the prevention of rheumatic fever following *S. pyogenes* pharyngitis/tonsillitis. Only intramuscular penicillin has been demonstrated to be effective for the prevention of rheumatic fever.

- \* **Uncomplicated Skin and Skin Structure Infections** caused by *Staphylococcus aureus* (including Beta-lactamase producing strains) and *Streptococcus pyogenes*.

**DOSAGE AND ADMINISTRATION**

The recommended dosage and duration of treatment for infections in pediatric patients are described in the following chart; the total daily dose for all infections is 14 mg/kg, up to a maximum dose of 600 mg per day. Once daily dosing for 10 days is as effective as BID dosing. Once daily dosing has not been studied in skin infections; therefore, **LB-NIR Suspension** should be administered twice daily in this infection. **LB-NIR Suspension** may be administered without regard to meals.

<b>Pediatric Patients (Age 6 Months Through 12 Years)</b>		
<b>Type of Infection</b>	<b>Dosage</b>	<b>Duration</b>
<b>Acute Bacterial Otitis Media</b>	7 mg/kg BID or 14 mg/kg OD	5 to 10 days  10 days
<b>Acute Maxillary Sinusitis</b>	7 mg/kg BID or 14 mg/kg OD	10 days  10 days
<b>Pharyngitis/ Tonsillitis</b>	7 mg/kg BID	5 to 10 days

	or	
	14 mg/kg OD	10 days
<b>Uncomplicated Skin &amp; Skin Structure Infections</b>	7 mg/kg BID	10 days

**Oral Suspension Pediatric Dosage Chart:**

<b>Weight</b>	<b>125 mg/ 5 mL</b>
9 kg/ 20 lbs	2.5 mL (½ tsp) BID or 5 mL (1 tsp) OD
18 kg/ 40 lbs	5 mL (1 tsp) BID or 10 mL (2 tsp) OD
27 kg/ 60 lbs	7.5 mL (1½ tsp) BID or 15 mL (3 tsp) OD
36 kg/ 80 lbs	10 mL (2 tsp) BID or 20 mL (4 tsp) OD
>43 kg <sup>a</sup> /95 lbs	12 mL (2½ tsp) BID or 24 mL (5 tsp) OD

Pediatric patients who weigh > 43 kg should receive the maximum daily dose of 600 mg.

**Directions for Reconstituting Oral Suspension**

- ✓ Shake the bottle well to loosen the powder.
- ✓ Use the enclosed sterile water supplied with the pack to reconstitute the powder up to the mark shown on the bottle.
- ✓ Discard the remaining sterile water.
- ✓ Shake the reconstituted suspension well before use.
- ✓ Use within 7-8 days after re-constitution.

**OVERDOSAGE AND TREATMENT**

Information on cefdinir overdosage in humans is not available. The symptoms following overdosage with other Beta-lactam antibiotics include nausea, vomiting, epigastric distress diarrhea and convulsions. Cefdinir is removed from the body by the haemodialysis. This may be useful in the event of a serious toxic reaction from overdosage, particularly if renal function is compromised.

**STORAGE**

Keep in cool, dry place, protect from light.

**PRESENTATION**

**LB-NIR DRY SYRUP** is available as a dry powder in 30 ml bottle provided with separate packs of sterile water for dissolution