Abacus™ Tablets / Suspension

(Cefpodoxime Proxetil)

DESCRIPTION:
Cefpodoxime proxetil is an orally administered, extended spectrum, semi-synthetic antibiotic of the cephalosporin class. The chemical name is (RS)-1(isopropoxycarbonyloxy) ethyl (+)-(6R,7R)-7-[2-(2-amino-4-thiazolyl)-2-((Z)methoxyimino)acetamido]-3-methoxymethyl-8-oxo-5-thia-1-azabicyclo [4.2.0]oct-2-ene- 2-carboxylate. Its empirical formula is $C_{21}H_{27}N_5O_9S_2$. The molecular weight of cefpodoxime proxetil is 557.6

COMPOSITION:

Abacus™ 100mg Tablets
Each film coated tablet contains:
Cefpodoxime Proxetil USP
equivalent to Cefpodoxime 100mg

Abacus™ 200mg Tablets
Each film coated tablet contains:
Cefpodoxime Proxetil USP
equivalent to Cefpodoxime 200mg

Abacus™ 40mg/5ml Suspension
Each 5ml of reconstituted suspension contains:
Cefpodoxime Proxetil USP
equivalent to Cefpodoxime 40mg

Abacus™ 100mg/5ml suspension
Each 5ml of reconstituted suspension contains:
Cefpodoxime Proxetil USP
equivalent to Cefpodoxime 100mg

CLINICAL PHARMACOLOGY:
Mode of Action: Cefpodoxime is a bactericidal agent that acts by inhibition of bacterial cell wall synthesis. Cefpodoxime has activity in the presence of some beta-lactamases, both penicillinases and cephalosporinases, of gram-negative and gram-positive bacteria
Absorption and Excretion: Cefpodoxime proxetil is a prodrug that is absorbed from the gastrointestinal tract and de-esterified to its active metabolite, cefpodoxime. Following oral administration of 100mg of cefpodoxime proxetil to fasting subjects, approximately 50% of the administered cefpodoxime dose was absorbed systemically. Over the recommended dosing range (100 to 400mg), approximately 29 to 33% of the administered cefpodoxime dose was excreted unchanged in the urine in 12 hours. There is minimal metabolism of cefpodoxime *in vivo*
Effects of Food: The extent of absorption (mean AUC) and the mean peak plasma concentration increased when film-coated tablets were administered with food. Following a 200mg tablet dose taken with food, the AUC was 21 to 33% higher than under fasting conditions, and the peak plasma concentration averaged 3.1mcg/mL in fed subjects versus 2.6mcg/mL in fasted subjects. Time to peak concentration was not significantly different between fed and fasted subjects
When a 200mg dose of the suspension was taken with food, the extent of absorption (mean AUC) and mean peak plasma concentration in fed subjects were not significantly different from fasted subjects, but the rate of absorption was slower with food (48% increase in T_{max})
Distribution: Protein binding of cefpodoxime ranges from 22 to 33% in serum and from 21 to 29% in plasma
Effects of Decreased Renal Function: Elimination of cefpodoxime is reduced in patients with moderate to severe renal impairment (<50mL/min creatinine clearance). In subjects with mild impairment of renal function (50 to 80mL/min creatinine clearance), the average plasma half-life of cefpodoxime was 3.5 hours. In subjects with moderate (30 to 49mL/min creatinine clearance) or severe renal impairment (5 to 29mL/min creatinine clearance), the half-life increased to 5.9 and 9.8 hours, respectively. Approximately 23% of the administered dose was cleared from the body during a standard 3-hour hemodialysis procedure
Effect of Hepatic Impairment (Cirrhosis): Absorption was somewhat diminished and elimination unchanged in patients with cirrhosis. The mean cefpodoxime $T_{1/2}$ and renal clearance in cirrhotic patients were similar to those derived in studies of healthy subjects. Ascites did not appear to affect values in cirrhotic subjects. No dosage adjustment is recommended in this patient population

Pharmacokinetics in Elderly Subjects: Elderly subjects do not require dosage adjustments unless they have diminished renal function. In healthy geriatric subjects, cefpodoxime half-life in plasma averaged 4.2 hours (vs 3.3 in younger subjects) and urinary recovery averaged 21% after a 400mg dose was administered every 12 hours. Other pharmacokinetic parameters (Cmax, AUC, and Tmax) were unchanged relative to those observed in healthy young subjects

Cefpodoxime has been shown to be active against most isolates of the following bacteria, both in vitro and in clinical infections:

Aerobic Gram-positive bacteria:
- Staphylococcus aureus (including those producing penicillinases)
- Staphylococcus saprophyticus
- Streptococcus pneumoniae (excluding penicillin-resistant isolates)
- Streptococcus pyogenes

Aerobic Gram-negative bacteria:
- Escherichia coli
- Klebsiella pneumoniae
- Proteus mirabilis
- Haemophilus influenzae (including beta-lactamase producing isolates)
- Moraxella catarrhalis
- Neisseria gonorrhoeae (including penicillinase-producing isolates)

INDICATIONS AND USAGE:
Cefpodoxime proxetil is indicated for the treatment of patients with mild to moderate infections caused by susceptible strains of the designated microorganisms in the conditions listed below:

Acute otitis media caused by Streptococcus pneumoniae (excluding penicillin-resistant strains), Streptococcus pyogenes, Haemophilus influenzae (including beta-lactamase-producing strains), or Moraxella (Branhamella) catarrhalis (including beta-lactamase-producing strains)
Pharyngitis and/or tonsillitis caused by Streptococcus pyogenes
Community-acquired pneumonia caused by S. pneumoniae or H. influenzae (including beta-lactamase-producing strains)
Acute bacterial exacerbation of chronic bronchitis caused by S. pneumoniae, H. influenzae (non-beta-lactamase-producing strains only), or M. catarrhalis. Data are insufficient at this time to establish efficacy in patients with acute bacterial exacerbations of chronic bronchitis caused by beta-lactamase-producing strains of H. influenzae
Acute, uncomplicated urethral and cervical gonorrhea caused by Neisseria gonorrhoeae (including penicillinase-producing strains)
Acute, uncomplicated anorectal infections in women due to Neisseria gonorrhoeae (including penicillinase-producing strains)
Uncomplicated skin and skin structure infections caused by Staphylococcus aureus (including penicillinase-producing strains) or Streptococcus pyogenes. Abscesses should be surgically drained as clinically indicated
Acute maxillary sinusitis caused by Haemophilus influenzae (including beta-lactamase-producing strains), Streptococcus pneumoniae, and Moraxella catarrhalis
Uncomplicated urinary tract infections (cystitis) caused by Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, or Staphylococcus saprophyticus

CONTRAINDICATIONS:
Cefpodoxime proxetil is contraindicated in patients with a known allergy to cefpodoxime or to the cephalosporin group of antibiotics

DOSAGE AND ADMINISTRATION:
Film coated tablets:
Abacus™ tablets should be administered orally with food to enhance absorption
The recommended dosages, durations of treatment, and applicable patient population are as described in the following chart:

Adults and Adolescents (age 12 years and older)

Type of Infection	Total Daily Dose	Dose Frequency	Duration
Pharyngitis and/or tonsillitis	200mg	100mg q. 12 hours	5 to 10 days
Acute community-acquired pneumonia	400mg	200mg q. 12 hours	14 days
Acute bacterial exacerbations of chronic bronchitis	400mg	200mg q. 12 hours	10 days
Uncomplicated gonorrhea (men and women) and rectal gonococcal infections (women)	200mg	Single dose	-
Skin and skin structure	800mg	400mg q. 12 hours	7 to 14 days
Acute maxillary sinusitis	400mg	200mg q. 12 hours	10 days
Uncomplicated urinary tract infection	200mg	100mg q. 12 hours	7 days

Oral Suspension:
Abacus™ oral suspension may be given without regard to food

Children older than 15 days:
- The daily amount is worked out according to the weight of the child
- Usually the total amount each day is 8mg for each kilogram of body weight
- This is usually split into two doses
- Give each dose every 12 hours with a meal

The exact dose will have been worked out by the doctor and shown on the label
The following table provides a guide to usual doses:

Body weight in kg	Cefpodoxime dose in mg to be given twice daily	Cefpodoxime dose in ml of suspension to be given twice daily
5	20mg	2.5ml
10	40mg	5ml
15	60mg	7.5ml
20	80mg	10ml
25	100mg	12.5ml

Patients with Renal Dysfunction
When creatinine clearance is less than 40mL/min/1.73m^2, the interval between 2 doses should be as follows:

Creatinine clearance 10 – 39mL/min/1.73m^2 = 1 single dose every 24 hours
Creatinine clearance <10mL/min/1.73m^2 = 1 single dose every 48 hours

OR
As directed by the physician

WARNINGS:
Before therapy with cefpodoxime proxetil is instituted, careful inquiry should be made to determine whether the patient has had previous hypersensitivity reactions to cefpodoxime, other cephalosporins, penicillins, or other drugs. If cefpodoxime is to be administered to penicillin sensitive patients, caution should be exercised because cross hypersensitivity among beta-lactam antibiotics has been clearly documented and may occur in up to 10% of patients with a history of penicillin allergy. If an allergic reaction to cefpodoxime proxetil occurs, discontinue the drug. Serious acute hypersensitivity reactions may require treatment with epinephrine and other emergency measures, including oxygen, intravenous fluids, intravenous antihistamine, and airway management, as clinically indicated. Pseudomembranous colitis has been reported with nearly all antibacterial agents, including cefpodoxime, and may range in severity from mild to life-threatening. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to the administration of antibacterial agents

PRECAUTIONS:
Information for Patients:
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.
Drug Interactions:
Antacids: Concomitant administration of high doses of antacids (sodium bicarbonate and aluminum hydroxide) or H_2 blockers reduces peak plasma levels by 24% to 42% and the extent of absorption by 27% to 32%, respectively. The rate of absorption is not altered by these concomitant medications. Oral anti-cholinergics (e.g., propantheline) delay peak plasma levels (47% increase in T_{max}), but do not affect the extent of absorption (AUC)
Probenecid: As with other beta-lactam antibiotics, renal excretion of cefpodoxime was inhibited by probenecid and resulted in an approximately 31% increase in AUC and 20% increase in peak cefpodoxime plasma levels
Nephrotoxic drugs: Although nephrotoxicity has not been noted when cefpodoxime proxetil was given alone, close monitoring of renal function is advised when cefpodoxime proxetil is administered concomitantly with compounds of known nephrotoxic potential

Drug/Laboratory Test Interactions: Cephalosporins, including cefpodoxime proxetil, are known to occasionally induce a positive direct Coombs' test

Pregnancy - Teratogenic Effects:
Pregnancy Category B: Cefpodoxime proxetil was neither teratogenic nor embryocidal when administered to rats. There are, however, no adequate and well-controlled studies of cefpodoxime proxetil use in pregnant women
Labor and Delivery: Cefpodoxime proxetil has not been studied for use during labor and delivery. Treatment should only be given if clearly needed
Nursing Mothers: Cefpodoxime is excreted in human milk
Paediatric Use: Safety and efficacy in infants less than 2 months of age have not been established
Geriatric Use: Dose adjustment in elderly patients with normal renal function is not necessary

OVERDOSAGE:
In acute rodent toxicity studies, a single 5g/kg oral dose produced no adverse effects
In the event of serious toxic reaction from overdosage, hemodialysis or peritoneal dialysis may aid in the removal of cefpodoxime from the body, particularly if renal function is compromised

DIRECTION FOR RECONSTITUTION:
Shake bottle to loosen the mass. Add one time completely filled provided cup (30ml) with freshly boiled cool water into bottle. Shake well to form uniform suspension

STABILITY:
See expiry on the pack

AVAILABILITY:
Abacus™ 100mg tablets in pack of 10's
Abacus™ 200mg tablets in pack of 10's
Abacus™ 40mg/5ml suspension in pack of 50ml
Abacus™ 100mg/5ml suspension in pack of 50ml

INSTRUCTIONS:
Keep out of reach of children
Avoid exposure to heat, light and humidity
Store between 15 to 30°C
Improper storage may deteriorate the medicine

The reconstituted suspension should be kept in refrigerator for not more than 10 days

Manufactured by:
Healthtek (Pvt.) Limited
Plot No.14, Sector 19, Korangi Industrial Area
Karachi - Pakistan

Associate of:
SAMI Pharmaceuticals (Pvt.) Ltd.
Karachi-Pakistan
www.samipharmapk.com

ابیکس™ ٹیبلٹ / سسپینشن

(سیفپوڈوکسیم پروکسیٹل)

خوراک: ڈاکٹر کی ہدایت کے مطابق استعمال کریں

ہدایات: بچوں کی پہنچ سے دور رکھیں

دوا کو دھوپ، گرمی اور نمی سے محفوظ ۱۵ سے ۳۰ ڈگری سینٹی گریڈ

کے درمیان رکھیں ورنہ دوا خراب ہو جائیگی

تیار شدہ سسپینشن کو ۱۰ دن تک ریفریجریٹر میں رکھا جا سکتا ہے