

## Cetafor® 1000 mg IM

POWDER AND SOLVENT FOR INJECTABLE SOLUTION

Stérile Non-pyrorgen

### 1. QUALITATIVE AND QUANTITATIVE COMPOSITION AND PHARMACEUTICAL FORM

Each vial Cetafor® 1 g IM contains 1.193 g Ceftriaxone disodium 3.5 H<sub>2</sub>O, equivalent to 1 g Ceftriaxone as a sterile dry powder. Each ampoule contains: 4 ml 1% Lidocaine Hydrochloride for injection as sterile non-pyrogen solvent and 27.2 mg sodium chloride, sodium hydroxide / hydrochloric acid (pH=6.5) and water for injection q.s. 4 ml.

**Other pharmaceutical forms:** Cetafor® 500 mg IV, Cetafor® 1000 mg IV.

### 2. CLINICAL PROPERTIES

**2.1 Therapeutic indications:** Cetafor® (Ceftriaxone) is indicated for the treatment of the following infections caused by susceptible micro-organisms.

**Lower respiratory tract infections** caused by *Streptococcus pneumoniae*, *Streptococcus species*, *Staphylococcus aureus*, *Haemophilus influenzae*, *H. parainfluenzae*, *Klebsiella species* (including *Klebsiella pneumoniae*), *Escherichia coli*, *Enterobacter aerogenes*, *Proteus mirabilis* or *Serratia marcescens*. **Skin and skin structure infections** caused by *S. aureus*, *S. epidermidis*, *Streptococcus species*, *Enterobacter cloacae*, *Klebsiella species* (including *K. pneumoniae*), *P. mirabilis*, *Pseudomonas aeruginosa*. **Urinary tract infections** (complicated and uncomplicated) caused by *E. coli*, *P. mirabilis*, *P. vulgaris*, *P. morganii* or *Klebsiella species* (including *K. pneumoniae*). **Uncomplicated gonorrhoea** (cervical urethral and rectal) caused by *Neisseria gonorrhoeae*, including both penicillinase- and non penicillinase-producing strains. **Pelvic inflammatory disease** caused by *N. gonorrhoeae*. **Bacterial septicemia** caused by *S. aureus*, *S. pneumoniae*, *E. coli*, *H. influenzae* or *Klebsiella species* (including *K. pneumoniae*). **Bone and joint infections** caused by *S. aureus*, *S. pneumoniae*, *Streptococcus species*, *E. coli*, *P. mirabilis*, *K. pneumoniae* or *Enterobacter species*. **Intra-abdominal infections** caused by *H. influenzae*, *N. meningitidis* or *S. pneumoniae*, *S. epidermidis* and *E. coli*.

**2.2 Posology and method of administration:** For non-CNS infections, in adults a single dose given once daily is preferred, usually 1 g q24h. For CNS infections (e.g., meningitis, brain abscess), maximal doses are used, 2 g q12h in adults. In children with meningitis or severe infection, q12h regimen is used. **Adults:** Cetafor® 1 g IM injectable vial should be administered as an intramuscular injection. Standard therapeutic dosage: 1 - 2 g once daily. The total daily dosage should not exceed 4 grams. **Children:** In meningitis, a loading dose of 75 mg/kg and then 100 mg/kg (not to exceed 4 g/day) divided q12h. In other infections, 50 - 75 mg/kg/day (not to exceed 2 g) divided q12h or once-daily doses. For the treatment of uncomplicated gonococcal infections, a single intramuscular dose of 250 mg is recommended. For pre-operative use (surgical prophylaxis), a single dose of 1 g administered intramuscularly 30 to 120 minutes before surgery is recommended. When treating infections caused by Group A beta haemolytic streptococci (*S. pyogenes*), therapy should be continued for at least 10 days.

**2.3 Preparation of solutions for intramuscular injection:** 1 g IM Cetafor® should be dissolved in 4 ml of sterile 1% Lidocaine Hydrochloride. The immediately after reconstitution.

**2.4 Contra-indications:** Cetafor® is contra-indicated in patients with a known allergy to the cephalosporin class of antibiotics. Since Cetafor® IM contains Lidocaine Hydrochloride as solvent, it should not be used in patients who have hypersensitivity to local anaesthetics and who have heart block. Ceftriaxone is not advised in neonates since it binds to serum proteins and may displace bilirubin. Cefotaxime is preferred in neonates.

**2.5 Special warnings and precautions for use:** Before starting therapy with Cetafor®, careful inquiry should be made to determine whether the patient had previous hypersensitivity reactions to cephalosporins, penicillins or other drugs. Unless special skin tests can be performed, cephalosporins should be avoided in patients with a history of immediate severe reaction, such as anaphylaxis or angioedema, to a penicillin (or cephalosporin). Serious acute hypersensitivity reactions may require the use of subcutaneous adrenaline (epinephrine) and other emergency measures. Pseudomembranous colitis has been reported with nearly all wide-spectrum anti-bacterial agents, including cephalosporins. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to administration of antibacterial agents. Mild cases of pseudomembranous colitis usually respond to drug discontinuation alone. In moderate to severe cases, the ceftriaxone therapy should be stopped and appropriate treatment with an anti-diarrheal drug such as oral vancomycin started. Cetafor® should be prescribed with caution in individuals with a history of gastro-intestinal disease, especially rectal bleeding. Normal blood counts should be carried out during long-term treatment. Ceftriaxone has dual hepatic (40%) and renal (60%) excretion. In renal failure, the rate of hepatic excretion increases, so that dose adjustments are usually not necessary. If both hepatic and renal failure are present, the half-life of ceftriaxone is prolonged and serum levels should be monitored. When this happens, Cetafor® dosage should not exceed 2 g daily without close monitoring of the serum concentrations. Ceftriaxone showed no potential for mutagenic activity.

**2.6 Interactions with other medicinal products:** Solutions containing Cetafor® should not be mixed with or added to solutions containing other antibacterial agents, and should be administered separately.

**2.7 Pregnancy and lactation:** There are no adequate and well-controlled studies in pregnant women. Therefore, Ceftriaxone should be used during pregnancy only if clearly needed. Ceftriaxone is excreted in breast milk in low concentrations. Caution should be exercised when Cetafor® is administered to nursing women.

**2.8 Undesirable effects:** Cetafor® is generally well tolerated. The most common side effects are inflammation, pain or hardness, experienced at the site of intramuscular and intravenous injection immediately after administration; systemic adverse reactions include diarrhea, nausea, vomiting, pruritus, rash, eosinophilia, leucopenia and thrombocytosis. Other rarely observed adverse reactions include headache, dizziness, transient elevation in liver function tests, increase in serum creatinine, and mycosis of the genital tract. These side effects usually disappear after discontinuing drug therapy. IN CASE OF AN UNEXPECTED SIDE EFFECT, CONSULT YOUR PHYSICIAN.

### 3. PHARMACOLOGICAL PROPERTIES

**3.1 Pharmacodynamic properties:** Ceftriaxone is a semi-synthetic, third generation cephalosporin with broad spectrum activity and a long half-life, allowing for q24h dosing in non-central nervous system (CNS) infections. The bactericidal activity of ceftriaxone results from inhibition of cell wall synthesis. Ceftriaxone has a high degree of stability in the presence of the beta-lactamases, cephalosporinases and both penicillinases of gram negative and gram-positive bacteria. Ceftriaxone is usually active against the micro-organisms in vitro and against the micro-organisms in the therapeutic indications. It is also active against *Serratia marcescens*, *Chlamydia species*, *Acinetobacter species*, *Citrobacter species*, *Salmonella species*, *Shigella species* (many strains of these organisms that are multiple resistant to other antibiotics such as penicillins, cephalosporins and aminoglycosides, are susceptible to ceftriaxone; many strains of *Pseudomonas aeruginosa* are susceptible to ceftriaxone), against Group A beta haemolytic streptococci (*S. pyogenes*), Group B streptococci (*S. agalactiae*), and against *Bacteroides species*, *Clostridium species*; most strains of *Clostridium difficile* are resistant.

**3.2 Pharmacokinetic properties:** Ceftriaxone is completely absorbed following IM administration with mean maximum plasma concentrations occurring between 2 and 3 hours post dosing. Multiple IV or IM doses ranging from 0.5 to 2 g at 12 to 24 hour intervals resulted in 15% to 36% accumulation of ceftriaxone above single dose values. Ceftriaxone is detected in the urine as unchanged drug and the remainder in the bile. It is ultimately found in the faeces as microbiologically inactive compounds.

**3.3 Interactions with d'autres médicaments:** Les solutions contenant Cetafor® ne doivent pas être mélangées ou associées à des solutions contenant d'autres agents antibactériens et doivent être administrées séparément.

**3.4 Grossesse et allaitement:** Il n'existe aucune étude adéquate et bien contrôlée chez les femmes enceintes. C'est pourquoi la ceftriaxone ne doit être utilisée en cas de grossesse que si elle est indispensable. La ceftriaxone est excrétée dans le lait maternel en faibles concentrations. Il convient d'être prudent lors de l'administration de Cetafor® à des femmes allaitantes.

8.7 hours and the apparent volume of distribution was found to be between 5.78 l and 13.5 l. Plasma clearance is 0.58 to 1.45 l/hour and renal clearance is 0.32 to 0.72 l/hour. Ceftriaxone binds reversibly to human plasma proteins. The binding decreases from 95% at plasma concentrations of <25 mcg/ml to 85% at 300 mcg/ml. Ceftriaxone penetrates the inflamed meninges of infants and children. Following IV administration of a 50 mg/kg or 75 mg/kg dose of ceftriaxone to paediatric patients, the maximum peak serum concentrations were 216 and 275 mcg/ml respectively, and CSF concentrations (when meninges are inflamed) were 5.6 and 6.4 mcg/ml respectively. When used in dosages of up to 2 g per day, the pharmacokinetics of ceftriaxone in elderly subjects and patients with hepatic dysfunction and renal failure are not very different than they are in healthy subjects. Ceftriaxone is not removed to any significant extent from the plasma by haemodialysis. In 6 out of 26 patients, the elimination rate of ceftriaxone is markedly lower.

### 4. PHARMACEUTICAL PARTICULARS

#### 4.1 Shelf life: 3 years.

**4.2 Special precautions for storage:** Store Cetafor® sterile powder below 30°C, in the original package, protected from light. After reconstitution, protection from light is not necessary. The colour of the solution ranges from light yellow to amber, depending on the length of storage, concentration and the diluent used. As a rule, solutions should be used immediately after reconstitution. A solution of Cetafor® maintains satisfactory potency for 24 hours at room temperature (at or below 30°C), and for 72 hours when refrigerated (4°C). Keep out of reach and sight of children and in its original package.

#### 4.3 Legal categories:

By prescription only

## Cetafor® 1000 mg IM

POUDRE ET SOLVANT POUR SOLUTION INJECTABLE

Stérile Apyrogène

### 1. COMPOSITION QUALITATIVE ET QUANTITATIVE ET PRÉSENTATION PHARMACEUTIQUE

Chaque flacon Cetafor® 1 g IM contient 1.193 g de la ceftriaxone disodique H<sub>2</sub>O équivalant à 1 g de ceftriaxone. Chaque ampoule contient 4 ml de chlorhydrate de lidocaïne 1% pour injection comme solvant stérile, apyrogène, 27.2 mg chlorure de sodium, hydroxyde de sodium/acide chlorhydrique (pH=6.5) q.s., et eau pour injection q.s. 4 ml. **Autres formes pharmaceutiques:** Cetafor® 500mg IV, Cetafor® 1000mg IV.

### 2. DONNÉES CLINIQUES

#### 2.1 Indications thérapeutiques:

Cetafor® (Ceftriaxone) est indiqué pour le traitement des infections suivantes, causées par des microorganismes sensibles.

**Infections du tractus respiratoire inférieur** causées par *Streptococcus pneumoniae*, *Streptococcus species*, *Staphylococcus aureus*, *Haemophilus influenzae*, *H. parainfluenzae*, *Klebsiella species* (y compris *K. pneumoniae*), *Escherichia coli*, *Enterobacter aerogenes*, *Proteus mirabilis* ou *Serratia marcescens*. **Infections cutanées et des structures cutanées** causées par *S. aureus*, *S. epidermidis*, *Streptococcus species*, *Enterobacter cloacae*, *Klebsiella species* (y compris *K. pneumoniae*), *P. mirabilis*, *Pseudomonas aeruginosa*. **Infections du tractus urinaire** (compliquées et non compliquées) causées par *E. coli*, *P. mirabilis*, *P. vulgaris*, *P. morganii* ou *Klebsiella species* (y compris *K. pneumoniae*). **Gonorrhée non compliquée** (cervicale/utérale et rectale) causée par *Neisseria gonorrhoeae*, y compris les souches produisant ou non de la pénicillinase. **Maladie inflammatoire pelvienne** causée par *N. gonorrhoeae*. **Septicémie bactérienne** causée par *S. aureus*, *S. pneumoniae*, *E. coli*, *H. influenzae* ou *Klebsiella species* (y compris *K. pneumoniae*). **Infections osseuses et articulaires** causées par *S. aureus*, *S. pneumoniae*, *Streptococcus species*, *E. coli*, *P. mirabilis*, *K. pneumoniae* ou *Enterobacter species*. **Infections intra-abdominales** causée par *E. coli*, *K. pneumoniae*. **La méningite** causée par *H. influenzae*, *N. meningitidis* ou *S. pneumoniae*, *S. epidermidis* et *E. coli*.

**2.2 Posologie et mode d'administration:** Pour non-CNS infections, in adults a single dose given once daily is preferred, usually 1 g q24h. For CNS infections (e.g., meningitis, brain abscess), maximal doses are used, 2 g q12h in adults. In children with meningitis or severe infection, q12h regimen is used. **Adults:** Cetafor® 1 g IM injectable vial should be administered as an intramuscular injection. Standard therapeutic dosage: 1 - 2 g once daily. The total daily dosage should not exceed 4 grams. **Children:** In meningitis, a loading dose of 75 mg/kg and then 100 mg/kg (not to exceed 4 g/day) divided q12h. In other infections, 50 - 75 mg/kg/day (not to exceed 2 g) divided q12h or once-daily doses. For the treatment of uncomplicated gonococcal infections, a single intramuscular dose of 250 mg is recommended. For pre-operative use (surgical prophylaxis), a single dose of 1 g administered intramuscularly 30 to 120 minutes before surgery is recommended. When treating infections caused by Group A beta haemolytic streptococci (*S. pyogenes*), therapy should be continued for at least 10 days.

**2.3 Preparation of solutions for intramuscular injection:** 1 g IM Cetafor® should be dissolved in 4 ml of sterile 1% Lidocaine Hydrochloride. The immediately after reconstitution.

**2.4 Contra-indications:** Cetafor® is contra-indicated in patients with a known allergy to the cephalosporin class of antibiotics. Since Cetafor® IM contains Lidocaine Hydrochloride as solvent, it should not be used in patients who have hypersensitivity to local anaesthetics and who have heart block. Ceftriaxone is not advised in neonates since it binds to serum proteins and may displace bilirubin. Cefotaxime is preferred in neonates.

**2.5 Special warnings and precautions for use:** Before starting therapy with Cetafor®, careful inquiry should be made to determine whether the patient had previous hypersensitivity reactions to cephalosporins, penicillins or other drugs. Unless special skin tests can be performed, cephalosporins should be avoided in patients with a history of immediate severe reaction, such as anaphylaxis or angioedema, to a penicillin (or cephalosporin). Serious acute hypersensitivity reactions may require the use of subcutaneous adrenaline (epinephrine) and other emergency measures. Pseudomembranous colitis has been reported with nearly all wide-spectrum anti-bacterial agents, including cephalosporins. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to administration of antibacterial agents. Mild cases of pseudomembranous colitis usually respond to drug discontinuation alone. In moderate to severe cases, the ceftriaxone therapy should be stopped and appropriate treatment with an anti-diarrheal drug such as oral vancomycin started. Cetafor® should be prescribed with caution in individuals with a history of gastro-intestinal disease, especially rectal bleeding. Normal blood counts should be carried out during long-term treatment. Ceftriaxone has dual hepatic (40%) and renal (60%) excretion. In renal failure, the rate of hepatic excretion increases, so that dose adjustments are usually not necessary. If both hepatic and renal failure are present, the half-life of ceftriaxone is prolonged and serum levels should be monitored. When this happens, Cetafor® dosage should not exceed 2 g daily without close monitoring of the serum concentrations. Ceftriaxone showed no potential for mutagenic activity.

**2.6 Interactions with other medicinal products:** Solutions containing Cetafor® should not be mixed with or added to solutions containing other antibacterial agents, and should be administered separately.

**2.7 Pregnancy and lactation:** There are no adequate and well-controlled studies in pregnant women. Therefore, Ceftriaxone should be used during pregnancy only if clearly needed. Ceftriaxone is excreted in breast milk in low concentrations. Caution should be exercised when Cetafor® is administered to nursing women.

**2.8 Undesirable effects:** Cetafor® is generally well tolerated. The most common side effects are inflammation, pain or hardness, experienced at the site of intramuscular and intravenous injection immediately after administration; systemic adverse reactions include diarrhea, nausea, vomiting, pruritus, rash, eosinophilia, leucopenia and thrombocytosis. Other rarely observed adverse reactions include headache, dizziness, transient elevation in liver function tests, increase in serum creatinine, and mycosis of the genital tract. These side effects usually disappear after discontinuing drug therapy. IN CASE OF AN UNEXPECTED SIDE EFFECT, CONSULT YOUR PHYSICIAN.

**3. PHARMACOLOGICAL PROPERTIES**

**3.1 Pharmacodynamic properties:** Ceftriaxone is a semi-synthetic, third generation cephalosporin with broad spectrum activity and a long half-life, allowing for q24h dosing in non-central nervous system (CNS) infections. The bactericidal activity of ceftriaxone results from inhibition of cell wall synthesis. Ceftriaxone has a high degree of stability in the presence of the beta-lactamases, cephalosporinases and both penicillinases of gram negative and gram-positive bacteria. Ceftriaxone is usually active against the micro-organisms in vitro and against the micro-organisms in the therapeutic indications. It is also active against *Serratia marcescens*, *Chlamydia species*, *Acinetobacter species*, *Citrobacter species*, *Salmonella species*, *Shigella species* (many strains of these organisms that are multiple resistant to other antibiotics such as penicillins, cephalosporins and aminoglycosides, are susceptible to ceftriaxone; many strains of *Pseudomonas aeruginosa* are susceptible to ceftriaxone), against Group A beta haemolytic streptococci (*S. pyogenes*), Group B streptococci (*S. agalactiae*), and against *Bacteroides species*, *Clostridium species*; most strains of *Clostridium difficile* are resistant.

**3.2 Pharmacokinetic properties:** Ceftriaxone is completely absorbed following IM administration with mean maximum plasma concentrations occurring between 2 and 3 hours post dosing. Multiple IV or IM doses ranging from 0.5 to 2 g at 12 to 24 hour intervals resulted in 15% to 36% accumulation of ceftriaxone above single dose values. Ceftriaxone is detected in the urine as unchanged drug and the remainder in the bile. It is ultimately found in the faeces as microbiologically inactive compounds.

**3.3 Interactions with d'autres médicaments:** Les solutions contenant Cetafor® ne doivent pas être mélangées ou associées à des solutions contenant d'autres agents antibactériens et doivent être administrées séparément.

**3.4 Grossesse et allaitement:** Il n'existe aucune étude adéquate et bien contrôlée chez les femmes enceintes. C'est pourquoi la ceftriaxone ne doit être utilisée en cas de grossesse que si elle est indispensable. La ceftriaxone est excrétée dans le lait maternel en faibles concentrations. Il convient d'être prudent lors de l'administration de Cetafor® à des femmes allaitantes.

**2.8 Effets indésirables:** Cetafor® est généralement bien toléré. Les effets secondaires les plus fréquents comprennent une inflammation, une douleur ou une induration au niveau du site d'injection intramusculaire et intraveineux, immédiatement après l'administration; les effets indésirables systémiques comprennent, de la diarrhée, des nausées, des vomissements, un prurit, une éruption cutanée, une éosinophilie, une leucopénie et une thrombocytose. D'autres effets indésirables rarement observés comprennent des céphalées, des vertiges, des augmentations passagères des tests fonctionnels hépatiques, une augmentation de la créatinine sénâtre et une myosite du tractus génital. Ces effets indésirables disparaissent habituellement après l'arrêt du traitement médicamenteux. SI VOUS MANIFESTEZ UN EFFET INDÉSIRABLE INATTENDU, VEUILLEZ CONSULTEZ VOTRE MÉDECIN.

### 3. PROPRIÉT