1.3	Product Information
1.3.1	Summary of Product Characteristics (SmPC)

1. Name of the Medicinal Product

(a) Product Name : AVICEF-FORTE (Ceftriaxone and Sulbactam for Injection 1.5gm)

(b) Strength : 1.5gm

(c) Pharmaceutical Dosage Form : Dry Injection

2. Quality and Quantitative Composition

Each vial contains;

Ceftriaxone Sodium USP (Sterile)

Eq. to Anhydrous Ceftriaxone ……..1000 mg

Sulbactam Sodium USP (Sterile)

Eq. to Anhydrous Sulbactam……..500mg

3. Pharmaceutical Form

Dry Powder for Injection

4. Clinical Particulars

4.1 Therapeutic indications:

Ceftriaxone & Sulbactam For Injection is indicated in infections caused by Ceftriaxone sodium-sensitive pathogens and may be used in the clinical settings in: Sepsis, Meningitis, Abdominal Infections (e.g. Peritonitis, Infections of the Biliary tract), Infections of the Bones, Joints, Soft Tissue, Skin and of Wounds, Renal and Urinary Tract Infections, Respiratory Tract infections, particularly Pneumonia, and Ear, Nose and Throat Infections, and uncomplicated Gonorrhoea. Ceftriaxone & Sulbactam For Injection may also be used for Ped-operative Prophylaxis of Infections. A single dose given Preoperatively may reduce chances of Postoperative Infection.

4.2 Posology and method of administration:

The recommended adult dosage is 1.5 g (1 g Ceftriaxone as the sodium salt plus 0.5 g sulbactam as the sodium salt) to 3 g (2 g Ceftriaxone as the sodium salt plus 1 g sulbactam as the sodium salt) every six hours. This 1.5 to 3 g range represents the total of Ceftriaxone content plus the sulbactam content and corresponds to a range of 1 g Ceftriaxone /0.5 g sulbactam to 2 g Ceftriaxone /1 g sulbactam. The total dose of sulbactam should not exceed 4 grams per day. Neonates, infants and children up to 12 years :

The following dosage schedules are recommended for once daily administration. Neonates (up to 14 days) : 20 to 50 mg/kg bodyweight once daily. The daily dose should not exceed 50 mg/kg. It is not necessary to differentiate between premature and term infants. Infants and children (15 days to 12 years) : 20 to 80 mg/kg once daily. For children with bodyweights of 50 kg or more, the usual adult dosage should be used. Intravenous doses of NLT 50 mg/kg bodyweight should be given by infusion over at least 30 minutes.

4.3 Contraindications:

Ceftriaxone & Sulbactam For Injection is contraindicated in patients with known allergy to Cephalosporin group of antibiotics. Hypersensitivity to penicillin may pre-dispose the patient to the possibility of allergic cross-reactions.

4.4 Special warning and precautions for use:

Superinfections with non-susceptible microorganisms may occur. Ceftriaxone, if given at higher than standard doses, may get precipitated as its calcium salt in the gall bladder, the shadows of which seen under sonography, could be mistaken for gallstones. However, it is largely asymptomatic and the shadows disappear on discontinuation of therapy or in due course after the completion of therapy. Even in the case of symptomatic cases surgical interventions are not required, and they may be treated conservatively. Discontinuation of Ceftriaxone & Sulbactam For Injection treatment in symptomatic cases is at the discretion of the clinician. During prolonged treatment with Ceftriaxone & Sulbactam For Injection , blood profile should be checked at regular intervals. Ceftriaxone & Sulbactam For Injection should not be administered to neonates in general, hyperbilirubinemic neonates in particular, and to premature babies.

4.5 Interaction with other medicinal products and other forms of interactions:

NA

4.6 Pregnancy and lactation:

Reproductive studies on ceftriaxone have been performed in mice and rats at very high doses. No evidence of embnjotoxicity, fetotoxicity or teratogenicity was observed. However, in absence of adequate and well- controlled studies in pregnant women, and since reproductive animal studies may not always reflect human response, this drug should be used during pregnancy only if clearly needed. As ceftriaxone is secreted in the breast-milk, albeit at low concentrations, caution should be exercised in nursing mothers. Mutagenicity/Carcinogenicity/Fertility : In vitro tests show that Ceftriaxone is not

mutagenic. No animal studies have been carried out to check the carcinogenic potential of Ceftriaxone. When given at high doses compared to the human clinical dose, Ceftriaxone did not show any adverse effect on fertility in rats.

4.7 Effects on ability to drive and use machine:

NA

4.8 Undesirable effects:

- No impairment of renal function has been observed after concurrent administration of large doses of Ceftriaxone and diurectics.
- There is no evidence to suggestthat Ceftriaxone increases renal toxicity of aminoglycosides.
- The elimination of Ceftriaxone is not altered by probenecid.
- Ceftriaxone and chloramphenicol have been shown to be antagonistic in in vitro studies.
- In cases of concomitant severe renal and hepatic dysfunction, the plasma concentrations of ceftriaxone should be determined at regular intervals.
- Coombs test may show false-positive results during Ceftriaxone therapy.
- Non-enzymatic urinary glucose estimation methods may give false-positive results.

4.9 Overdose:

Limited information is available on the acute toxicity of Ceftriaxone & Sulbactam For Injection . No specific antidote is available for the treatment of overdose. Haemodialysis does not remove the drug from system effectively. Hence, the treatment for Ceftriaxone & Sulbactam For Injection overdose is essentially supportive and symptomatic.

5. Pharmacological Properties

5.1 Pharmacodynamic properties

Ceftriaxone is a beta-lactam antibiotic like the penicillins with bactericidal action. Penicillin-binding proteins (PBPs) are responsible for several steps in the synthesis of the cell wall of bacteria and are found in large quantities (several hundred to several thousand molecules/bacterial cell). Ceftriaxone inhibits the third and final stage of bacterial cell wall synthesis by preferentially binding to the specific PBPs located inside the bacterial cell wall. Ceftriaxone interferes with PBP-mediated cell wall synthesis leading to cell lysis, which is mediated by bacterial cell wall autolytic enzymes (autolysins), possibly through interference with an autolysin inhibitor. The presence of an aminothiazolyl-acetyl side chain with an alpha-methoxyimino group at the 7-position of the beta-lactam ring provides Ceftriaxone with

enhanced antibacterial activity, particularly against the Enterobacteriaceae (e.g., E.coli, Klebsiella, Proteus, and Serratia) and increased stability against many of the beta-lactamases. Many strains of Pseudomonas aeruginosa are susceptible to Ceftriaxone. Other susceptible gram-negative organisms include Enterobacter, Citrobacter, Morganella, Providencia, Moraxella (Branhamella) catarrhalis, and N. meningitidis. Ceftriaxone has exceptional activity against H. influenzae and N. gonorrhoeae and is the drug of choice for uncomplicated N. gonorrhoeae infections. It has no activity against B. fragilis but is active against many other anaerobes.

5.2 Pharmacokinetic Properties:

NA

5.3 Preclinical Safety Data:

NA

6 Pharmaceutical Particulars

6.1 List of excipients:

NA

6.2 Incompatibilities:

NA

6.3 Shelf life:

Two years.

Reconstituted solution: Chemical and physical stability has been demonstrated for 24 hours at 2°C – 8°C and for 8 hours at 25°C.

From a microbiological point of view, the product should be used immediately. If not used immediately, in-use storage times and conditions are the responsibility of the user and would normally be no longer than 24 hours at 2-8°C unless reconstitution has taken place in controlled and validated aseptic conditions.

6.4 Special precautions for storage: Unopened: Store in a cool & dry place below 30°C. Protect from light & moisture. Keep the vials in the outer carton.

6.5 Nature and contents of container: Glass vials with rubber stopper and a flip off aluminium seal.

6.6 Special precautions for disposal and other handling

Prepare the solution by dissolving the content of vial in Sterile Water for Injection provided with this pack. The reconstituted solution should be used immediately after preparation. It should not be allowed to freeze.

7 MARKETING AUTHORISATION HOLDER

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8 MARKETING AUTHORISATION NUMBER(S)

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9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

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10 DATE OF REVISION OF THE TEXT

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