

**SUMMARY OF PRODUCT CHARACTERISTICS FOR**

**DERFXONE INJECTION ( CEFTRIAXONE SODIUM 1G + LIDOCAINE HCL 1% 3.5ML)**

**1.NAME OF MEDICINAL PRODUCT:** DERFXONE (CEFTRIAXONE SODIUM 1G +LIDOCAINE HCL 1% 3.5ML) INJECTION

**2.QUALITATIVE AND QUANTITATIVE COMPOSITION:**

EACH VIAL CONTAINS :

CEFTRIAXONE SODIUM.....1G

EACH AMPOULE CONTAINS

LIDOCAINE HYDROCHLORIDE 1%.....3.5ML

EXCIPIENTS WITH KNOWN EFFECTS .....QS

**3. PHARMACEUTICAL FORM :** POWDER FOR SOLUTION FOR INJECTION/INFUSION WHITE TO PALE YELLOW CRYSTALLINE POWDER

**4.CLINICAL PARTICULARS :**

**4.1 THERAPEUTIC INDICATIONS:** CEFTRIAXONE IS INDICATED IN THE TREATMENT OF THE FOLLOWING INFECTIONS IN ADULTS AND CHILDREN INCLUDING TERM NEONATES ( FROM BIRTH)

BACTERIAL MENINGITIS

COMMUNITY ACQUIRED PNEUMONIA

HOSPITAL ACQUIRED PNEUMONIA

ACUTE OTITIS MEDIA

INTRA ABDOMINAL INFECTIONS

COMPLICATED URINARY TRACT INFECTIONS ( INCLUDING PYELONEPHRITIS)

INFECTIONS OF BONES AND JOINTS

COMPLICATED SKIN AND SOFT TISSUES INFECTIONS

GONORRHOEA

SYPHILLIS

BACTERIAL ENDOCARDITIS

DERFXONE MAY BE USED

FOR TREATMENT OF ACUTE EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN ADULTS

FOR TREATMENT OF DISSEMINATED LYME BORRELIOSIS ( EARLY STAGE ) AND LATE STAGE IN ADULTS AND CHILDREN INCLUDING NEONATES FROM 15 DAYS OF AGE

FOR PRE-OPERATIVE PROPHYLAXIS OF SURGICAL SITE INFECTIONS

IN THE MANAGEMENT OF NEUTROPENIC PATIENTS WITH FEVER THAT IS SUSPECTED TO BE DUE TO A BACTERIAL INFECTION

IN THE TREATMENT OF PATIENTS WITH BACTERAEMIA THAT OCCURS IN ASSOCIATION WITH OR IS SUSPECTED TO BE ASSOCIATED WITH ANY OF THE INFECTIONS LISTED ABOVE

**4.2 POSOLOGY AND METHOD OF ADMINISTRATION:** THE DOSE DEPENDS ON THE SEVERITY, SUSCEPTIBILITY, SITE AND TYPE OF INFECTION AND ON THE AGE AND HEPATO RENAL FUNCTION OF THE PATIENT.

THE DOSES RECOMMENDED ARE INDICATIONS SPECIFIC IN PARTICULARLY SEVERE CASES, DOSES ARE HIGHER

**DOSAGE :** CEFTRIAZONE 1GRAM ONCE DAILY : COMMUNITY ACQUIRED PNEUMONIA, ACUTE EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE, INTRA-ABDOMINAL INFECTIONS, COMPLICATED URINARY TRACT INFECTIONS.

CEFTRIAZONE 2G ONCE DAILY: HOSPITAL ACQUIRED PNEUMONIA, COMPLICATED SKIN AND SOFT TISSUE INFECTIONS, INFECTIONS OF BONE AND JOINTS

WITH DOSES GREATER THAN 2G SUCH AS IN BACTERAEMIA, THE DOSE CAN BE GIVEN IN DIVIDED DOSE SAY 12HOURLY

**ACUTE OTITIS MEDIA :**A SINGLE INTRAMUSCULAR DOSE OF CEFTRIAZONE 1-2G CAN BE GIVEN

PRE-OPERATIVE PROPHYLAXIS OF SURGICAL SITE INFECTIONS 2 GRAM AS A SINGLE PRE-OPERATIVE DOSE

GONORRHOEA : 1GRAM AS A SINGLE INTRAMUSCULAR DOSE

SYPHILLIS : THE GENERALLY RECOMMENDED DOSES ARE 500MG-1 GRAM ONCE DAILY INCREASED TO 2GRAM ONCE DAILY FOR NEUROSYPHILLIS FOR 10-14 DAYS

**PAEDIATRICS** NEONATES AND CHILDREN 15DAYS TO 12 YEARS OF AGE (LESS THAN 50KG BODY WEIGHT)

50-80MG/KG CEFTRIAZONE ONCE DAILY : INTRA-ABDOMINAL INFECTIONS, COMPLICATED URINARY TRACT INFECTIONS, COMMUNITY ACQUIRED PNEUMONIA, HOSPITAL ACQUIRED PNEUMONIA.

50-100MG/KG(MAX 4G) CEFTRIAZONE ONCE DAILY: COMPLICATED SKIN AND SOFT TISSUE INFECTIONS, INFECTIONS OF BONES AND JOINTS, MANAGEMENT OF NEUTROPENIC PATIENTS WITH FEVER THAT IS SUSPECTED TO BE DUE TO A BACTERIAL INFECTION.

80-100MG/KG CEFTRIAZONE ONCE DAILY : BACTERIAL MENINGITIS

### **OLDER PEOPLE**

THE DOSAGE RECOMMENDED FOR ADULTS REQUIRE NO MODIFICATIONS IN OLDER PEOPLE PROVIDED THAT RENAL AND HEPATIC FUNCTION IS SATISFACTORY.

**4.3 CONTRAINDICATIONS:** HYPERSENSITIVITY TO THE ACTIVE SUBSTANCE, TO ANY OTHER CEPHALOSPORINS, OR TO ANY OF THE EXCIPIENTS.

HISTORY OF SEVERE HYEPRSENSITIVITY ( EG ANAPHYLACTIC REACTION) TO ANY OTHER TYPE OF BETA LACTAM ANTIBACTERIAL AGENT( PENINCILLINS MONOBACTAMS AND CARBAPENEMS).

CEFTRIAZONE IS CONTRAINDICATED IN:

PREMATURE NEONATES, FULL TERM NEONATES UPTO 28DAYS OF AGE WITH HYPERBILIRUBINAEMIA, JAUNDICE OR HYPOBILIRUBINAEMIA

CONTRAINDICATIONS TO LIDOCAINE MUST BE EXCLUDED BEFORE INTRAMUSCULAR INJECTION OF CEFTRIAZONE

CEFTRIAZONE SOLUTIONS CONTAINING LIDOCAINE SHOULD NEVER BE ADMINISTERED INTRAVENOUSLY

#### **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**

HYPERSENSITIVITY REACTIONS : AS WITH ALL BETA-LACTAM ANTIBACTERIAL AGENTS, SERIOUS AND OCCASIONALLY FATAL HYPERSENSITIVITY REACTIONS HAVE BEEN REPORTED . IN CASE OF SEVERE HYPERSENSITIVITY REACTIONS , TREATMENT WITH CEFTRIAZONE MUST BE DISCONTINUED IMMEDIATELY AND ADEQUATE EMERGENCY MEASURES MUST BE INITIATED .

BEFORE BEGINNING TREATMENT IT SHOULD BE ESTABLISHED WHETHER THE PATIENT HAS HISTORY OF SEVERE HYPERSENSITIVITY REACTIONS TO CEFTRIAZONE OR OTHER CEPHALOSPORINS OR ANY OTHER TYPE OF BETA LACTAM AGENT. CAUTION SHOULD BE USED IF CEFTRIAZONE IS GIVEN TO PATIENTS WITH A HISTORY OF NON SEVERE HYPERSENSITIVITY TO OTHER BETA LACTAM AGENTS

REACTIONS WITH CALCIUM CONTAINING PRODUCTS: CASES OF FATAL REACTIONS WITH CALCIUM –CEFTRIAZONE PRECIPITATES IN LUNGS AND KIDNEYS IN PREMATURE AND FULL TERM NEONATES AGED LESS THAN 1 MONTH HAVE BEEN DESCRIBED .

IN PATIENTS OF ANY AGE, CEFTRIAZONE MUST NOT BE MIXED OR ADMINISTERED SIMULTANEOUSLY WITH ANY CALCIUM CONTAINING INTRAVENOUS SOLUTIONS.

PAEDIATRICS POPULATION: SAFETY AND EFFECTIVENESS OF CEFTRIAZONE IN NEONATES, INFANTS AND CHILDREN HAVE BEEN ESTABLISHED FOR DOSAGES DESCRIBED.

CEFTRIAZONE IS CONTRAINDICATED IN PREMATURE AND FULL TERM NEONATES AT RISK OF DEVELOPING BILIRUBIN ENCEPHALOPATHY

LONG TERM TREATMENT: DURING PROLONGED TREATMENT BLOOD COUNT SHOULD BE PERFORMED AT REGULAR INTERVALS

SEVERE RENAL AND HEPATIC INSUFFICIENCY: IN SEVERE RENAL AND HEPATIC INSUFFICIENCY, CLOSE CLINICAL MONITORING FOR SAFETY AND EFFICACY IS ADVISED.

ANTIBACTERIAL SPECTRUM: CEFTRIAXONE HAS A LIMITED SPECTRUM OF ANTIBACTERIAL ACTIVITY AND MAY NOT BE SUITABLE FOR USE AS A SINGLE AGENT FOR THE TREATMENT OF SOME TYPES OF INFECTIONS UNLESS THE PATHOGEN HAS ALREADY BEEN CONFIRMED. IN POLYMICROBIAL INFECTIONS, WHERE SUSPECTED PATHOGENS INCLUDE ORGANISMS RESISTANT TO CEFTRIAXONE, ADMINISTRATION OF AN ADDITIONAL ANTIBIOTIC SHOULD BE CONSIDERED .

USE OF LIDOCAINE :IN CASE A LIDOCAINE SOLUTION IS USED AS A SOLVENT , CEFTRIAXONE SOLUTIONS MUST ONLY BE USED FOR INTRAMUSCULAR INJECTION. CONTRAINDICATIONS TO LIDOCAINE, WARNINGS AND OTHERS MUST BE CONSIDERED BEFORE USE. THE LIDOCAINE SOLUTION SHOULD NEVER BE ADMINISTERED INTRAVENOUSLY.

#### **4.5 INTERACTIONS WITH OTHER MEDICINAL PRODUCTS AND OTHER FORMS OF INTERACTIONS:**

CALCIUM-CONTAINING DILUENTS, SUCH AS RINGER'S SOLUTION OR HARTMANN'S SOLUTION, SHOULD NOT BE USED TO RECONSTITUTE CEFTRIAXONE SODIUM FOR INJECTION OR TO FURTHER DILUTE A RECONSTITUTED VIAL FOR INTRAVENOUS ADMINISTRATION BECAUSE A PRECIPITATE CAN FORM.

CONCOMITANT USE WITH ORAL ANTICOAGULANTS MAY INCREASE THE ANTI VITAMIN K EFFECT AND THE RISK OF BLEEDING

IT IS RECOMMENDED THAT AMINOGLYCOSIDES LEVELS SHOULD BE MONITORED BECAUSE OF A POTENTIAL INCREASE IN RENAL TOXICITY OF AMINOGLYCOSIDES ON CONCOMITANT USE WITH CEFTRIAXONES

NON ENZYMATIC METHODS FOR GLUCOSE DETERMINATION IN URINE MAY YIELD FALSE POSITIVE RESULTS

SIMULTANEOUS ADMINISTRATION OF PROBENECID DOES NOT REDUCE THE ELIMINATION OF CEFTRIAXONE .

#### **4.6 FERTILITY, PREGNANCY AND LACTATION**

**PREGNANCY:** CEFTRIAXONE CROSSES THE PLACENTAL BARRIER . THERE ARE LIMITED AMOUNTS OF DATA FROM THE USE OF CEFTRIAXONE IN PREGNANT WOMEN . ANIMAL STUDIES DO NOT INDICATE DIRECT OR INDIRECT HARMFUL EFFECTS WITH RESPECT TO EMBRYONAL /FOETAL, PERINATAL AND

POSTNATAL DEVELOPMENT. CEFTRIAZONE SHOULD ONLY BE ADMINISTERED DURING PREGNANCY AND IN PARTICULAR IN THE FIRST TRIMESTER OF PREGNANCY IF BENEFIT OUTWEIGHS THE RISK

**LACTATION:** CEFTRIAZONE IS EXCRETED INTO HUMAN MILK IN LOW CONCENTRATIONS BUT AT THERAPEUTIC DOSES OF CEFTRIAZONE NO EFFECTS ON THE BREASTFED INFANTS ARE ANTICIPATED. HOWEVER, A RISK OF DIARRHOEA AND FUNGAL INFECTION OF THE MUCOUS MEMBRANES CANNOT BE EXCLUDED THE POSSIBILITY OF SENSITISATION SHOULD BE TAKEN INTO ACCOUNT . A DECISION MUST BE MADE WHETHER TO DISCONTINUE BREASTFEEDING OR TO DISCONTINUE /ABSTAIN FROM CEFTRIAZONE THERAPY, TAKING INTO ACCOUNT THE BENEFIT OF BREASTFEEDING FOR THE CHILD AND THE BENEFIT OF THERAPY FOR THE WOMAN.

**FERTILITY:** REPRODUCTIVE STUDIES HAVE SHOWN NO EVIDENCE OF ADVERSE EFFECTS ON MALE OR FEMALE FERTILITY

**4.7 EFFECTS ON ABILITY TO DRIVE AND USE MACHINES:** DURING TREATMENT WITH CEFTRIAZONE, UNDESIRABLE EFFECTS MAY OCCUR ( EG DIZZINESS) WHICH MAY INFLUENCE THE ABILITY TO DRIVE AND USE MACHINES . PATIENTS SHOULD BE CAUTIOUS WHEN DRIVING OR OPERATING MACHINERY.

**4.8 UNDESIRABLE EFFECT:** THE MOST FREQUENTLY REPORTED ADVERSE REACTIONS FOR CEFTRIAZONE ARE EOSINOPHILIA, LEUCOPENIA, THROMBOCYTOPENIA, DIARRHOEA RASH AND HEPATIC ENZYMES INCREASE

**4.9 OVERDOSAGE :** IN OVERDOSE, THE SYMPTOMS OF NAUSEA , VOMITING AND DIARRHOEA CAN OCCUR. CEFTRIAZONE CONCENTRATIONS CANNOT BE REDUCED BY HAEMODIALYSIS OR PERITONEAL DIALYSIS.THERE IS NO SPECIFIC ANTIDOTE TREATMENT OF OVERDOSAGE SHOULD BE SYMPTOMATIC. .

## **5.0 PHARMACOLOGICAL PROPERTIES**

### **5.1 PHARMACODYNAMIC PROPERTIES:**

PHARMACOTHERAPEUTIC GROUP: ANTIBACTERIALS FOR SYSTEMIC USE, SECOND GENERATION CEPHALOSPORINS

MECHANISM OF ACTION:CEFTRIAZONE INHIBITS BACTERIAL CELL WALL SYNTHESIS FOLLOWING ATTACHMENT TO PENICILLIN BINDING PROTEINS

THIS RESULTS IN THE INTERRUPTION OF CELL WALL BIOSYNTHESIS WHICH LEADS TO BACTERIAL CELL LYSIS AND DEATH.

MECHANISM OF RESISTANCE : BACTERIAL RESISTANCE TO CEFTRIAZONE MAY BE DUE TO ONE OR MORE OF THE FOLLOWING MECHANISMS;

HYDROLYSIS BY BETA LACTAMASES INCLUDING (BUT NOT LIMITED TO) EXTENDED SPECTRUM BETA -LACTAMASES AND AMP-C ENZYMES THAT MAY BE INDUCED OR STABLY DEREPRESSED IN CERTAIN AEROBIC GRAM-NEGATIVE BACTERIAL SPECIES.

REDUCED AFFINITY OF PENICILLIN BINDING PROTEINS FOR CEFTRIAZONE

OUTER MEMBRANE IMPERMEABILITY IN GRAM NEGATIVE BACTERIA

BACTERIAL EFFLUX PUMPS

CLINICAL EFFICACY AGAINST SPECIFIC PATHOGENS: THE PREVALENCE OF ACQUIRED RESISTANCE MAY VARY GEOGRAPHICALLY AND WITH TIME FOR SELECTED SPECIES AND LOCAL INFORMATION ON RESISTANCE IS DESIRABLE PARTICULARLY WHEN TREATING SEVERE INFECTIONS AS NECESSARY , EXPERT ADVICE SHOULD BE SOUGHT WHEN THE LOCAL PREVALENCE OF RESISTANCE IS SUCH THAT THE UTILITY OF CEFTRIAZONE IN AT LEAST SOME TYPES OF INFECTIONS IS QUESTIONABLE.

## **5.2 PHARMACOKINETIC PROPERTIES**

ABSORPTION :

INTRAMUSCULAR ADMINISTRATION FOLLOWING INTRAMUSCULAR INJECTION, MEAN PEAK PLASMA CEFTRIAZONE LEVELS ARE APPROXIMATELY HALF THOSE OBSERVED AFTER INTRAVENOUS ADMINISTRATION OF AN EQUIVALENT DOSE . THE MAXIMUM PLASMA CONCENTRATION AFTER A SINGLE INTRAMUSCULAR DOSE OF 1GRAM IS ABOUT 81MG/L AND IS REACHED IN 2-3HOURS AFTER ADMINISTRATION.

THE AREA UNDER THE PLASMA CONCENTRATION –TIME CURVE AFTER INTRAMUSCULAR ADMINISTRATION IS EQUIVALENT TO THAT AFTER INTRAVENOUS ADMINISTRATION OF AN EQUIVALENT DOSE.

INTRAVENOUS ADMINISTRATION AFTER INTRAVENOUS BOLUS ADMINISTRATION OF CEFTRIAZONE 500MG AND 1G MEAN PEAK PLASMA CEFTRIAZONE LEVELS ARE APPROXIMATELY 120 AND 200MG/L RESPECTIVELY . AFTER INTRAVENOUS INFUSION OF CEFTRIAZONE 500MG, 1G AND 2G RESPECTIVELY, THE PLASMA CEFTRIAZONE LEVELS ARE APPROXIMATELY 80, 150 AND 250MG/L RESPECTIVELY.

DISTRIBUTION:

THE VOLUME OF DISTRIBUTION OF CEFTRIAZONE IS 7-12L CONCENTRATIONS WELL ABOVE MINIMAL INHIBITORY CONCENTRATIONS OF MOST RELEVANT PATHOGENS ARE DETECTABLE IN TISSUE INCLUDING LUNG, HEART BILIARY TRACT/LIVER , TONSIL, MIDDLE EAR AND NASAL MUCOSA, BONE AND IN CEREBROSPINAL, PLEURAL, PROSTATIC AND SYNOVIAL FLUIDS. AN 8-15% INCREASE IN MEAN PEAK PLASMA CONCENTRATIO IS SEEN ON REPEATED ADMINISTRATION , STEADY STATE IS REACHED IN MOST CASES WITHIN 48-72HOURS DEPENDING ON THE ROUTE OF ADMINISTRATION.

PENETRATION INTO PARTICULAR TISSUES :

CEFTRIAZONE PENETRATES THE MENINGES .PENETRATION IS GREATEST WHEN THE MENINGES ARE INFLAMED. MEAN PEAK CEFTRIAZONE CONCENTRATIONS IN CSF IN PATIENTS WITH BACTERIAL MENINGITIS ARE REPORTED TO BE UP TO 25% OF PLASMA LEVELS COMPARED TO 2% OF PLASMA LEVELS IN PATIENTS WITH UNINFLAMED MENINGES.PEAK CEFTRIAZONE CONCENTRATIONS IN CSF ARE REACHED APPROXIMATELY IN 4-6HOURS AFTER INTRAVENOUS INJECTION CEFTRIAZONE CROSSES THE PLACENTAL BARRIER AND IS EXCRETED IN THE BREAST MILK AT LOW CONCENTRATIONS.

PROTEIN BINDING:

CEFTRIAZONE IS REVERSIBLY BOUND TO ALBUMIN. PLASMA PROTEIN BINDING IS ABOUT 95% AT PLASMA CONCENTRATIONS BELOW 100MG/L. BINDING IS SATURABLE AND THE BOUND PORTION DECREASES WITH RISING CONCENTRATIONS.(UPTO 85%AT APLASMA CONCENTRATION OF 300MG/L)



## BIOTRANSFORMATION:

CEFTRIAXONE IS NOT METABOLISED SYSTEMICALLY; BUT IS CONVERTED TO INACTIVE METABOLITES BY THE GUT FLORA

## ELIMINATION:

PLASMA CLEARANCE OF TOTAL CEFTRIAXONE ( BOUND AND UNBOUND) IS 10-22ML/MIN RENAL CLEARANCE IS 5-12ML/MIN . 50-60%OF CEFTRIAXONE IS EXCRETED UNCHANGED IN THE URINE, PRIMARILY BY GLOMERULAR FILTRATION, WHILE 40-50% IS EXCRETED UNCHANGED IN THE BILE. THE ELIMINATION HALF LIFE OF TOTAL CEFTRIAXONE IN ADULTS IS ABOUT 8HOURS.

## PATIENTS WITH RENAL OR HEPATIC IMPAIRMENT:

IN PATIENTS WITH RENAL OR HEPATIC DYSFUNCTION, THE PHARMACOKINETICS OF CEFTRIAXONE ARE ONLY MINIMALLY ALTERED WITH HALF LIFE SLIGHTLY INCREASED (LESS THAN TWO FOLD), EVEN IN PATIENTS WITH SEVERELY IMPAIRED RENAL FUNCTION.

THE RELATIVELY MODEST INCREASE IN HALF LIFE IN RENAL IMPAIRMENT IS EXPLAINED BY A COMPENSATORY INCREASE IN NON RENAL CLEARANCE , RESULTING FROM A DECREASE IN PROTEIN BINDING AND CORRESPONDING INCREASE IN NON RENAL CLEARANCE OF TOTAL CEFTRIAXONE.

IN PATIENTS WITH HEPATIC IMPAIRMENT, THE ELIMINATION HALF LIFE OF CEFTRIAXONE IS NOT INCREASED , DUE TO A COMPENSATORY INCREASE IN RENAL CLEARANCE . THIS IS ALSO DUE TO AN INCREASE IN PLASMA FREE FRACTION OF CEFTRIAXONE CONTRIBUTING TO THE OBSERVED PARADOXICAL INCREASE IN TOTAL DRUG CLEARANCE , WITH AN INCREASE IN VOLUME OF DISTRIBUTION PARALLELING THAT OF TOTAL CLEARANCE .

## OLDER PEOPLE:

IN OLDER PEOPLE AGED OVER 75YEARS THE AVERAGE ELIMINATION HALF LIFE IS USUALLY TWO TO THREE TIMES THAT OF YOUNG ADULTS

## PAEDIATRIC POPULATIONS:

THE HALF LIFE OF CEFTRIAXONE IS PROLONGED IN NEONATES. FROM BIRTH TO 14 DAYS OF AGE , THE LEVELS OF FREE CEFTRIAXONE MAY BE FURTHER INCREASED BY FACTORS SUCH AS REDUCED GLOMERULAR FILTRATION AND ALTERED PROTEIN BINDING. DURING CHILDHOOD , THE HALF-LIFE IS LOWER THAN IN NEONATES OR ADULTS. THE

PLASMA CLEARANCE AND VOLUME OF DISTRIBUTION OF TOTAL CEFTRIAXONE ARE GREATER IN NEONATES INFANTS AND CHILDREN THAN IN ADULTS.

LINEARITY /NON LINEARITY:

THE PHARMACOKINETICS OF CEFTRIAXONE ARE NON LINEAR AND ALL BASIC PHARMACOKINETIC PARAMETERS EXCEPT THE ELIMINATION HALF -LIFE ARE DOSE DEPENDENT IF BASED ON TOTAL DRUG CONCENTRATIONS , INCREASING LESS THAN PROPORTIONALLY WITH DOSE . NON LINEARITY IS DUE TO SATURATION OF PLASMA PROTEIN BINDING AND IS THEREFORE OBSERVED FOR TOTAL PLASMA CEFTRIAXONE BUT NOT FOR FREE (UNBOUND) CEFTRIAXONE.

PHARMACOKINETIC /PHARMACODYNAMIC RELATIONSHIP:

AS WITH OTHER BETA LACTAMS, THE PHARMACOKINETIC-PHARMACODYNAMIC INDEX DEMONSTRATING THE BEST CORRELATION WITH THE INVIVO EFFICACY IS THE PERCENTAGE OF THE DOSING INTERVAL THAT THE UNBOUND CONCENTRATIONS REMAINS ABOVE THE MINIMUM INHIBITORY CONCENTRATIONS (MIC) OF CEFTRIAXONE FOR INDIVIDUAL TARGET SPECIES.

### **5.3 PRECLINICAL SAFETY DATA**

THERE IS EVIDENCE FROM ANIMAL STUDIES THAT HIGH DOSES OF CEFTRIAXONE CALCIUM SALT LED TO FORMATION OF CONCREMENTS AND PRECIPITATES IN THE GALL BLADDER OF DOGS AND MONKEYS , WHICH PROVED TO BE REVERSIBLE. ANIMAL STUDIES PRODUCED NO EVIDENCE OF TOXICITY TO REPRODUCTION AND GENOTOXICITY. CARCINOGENICITY STUDIES ON CEFTRIAXONE WERE NOT CONDUCTED.

## **6.PHARMACEUTICAL PARTICULARS.**

### **6.1 LIST OF EXCIPIENTS:**

NONE

### **6.2 INCOMPATIBILITIES**

BASED ON LITERATURE REPORTS, CEFTRIAXONE IS NOT COMPATIBLE WITH AMSACRINE, VANCOMYCIN, FLUCONAZOLE AND AMINOGLYCOSIDES

IF TREATMENT WITH A COMBINATION OF ANOTHER ANTIBIOTIC WITH CEFTRIAXONE SODIUM FOR INJECTION IS INTENDED, ADMINISTRATION SHOULD NOT OCCUR IN THE SAME SYRINGE OR IN THE SAME INFUSION SOLUTION

### **6.3 SHELF LIFE**

SHELF LIFE IS 36 MONTHS FOR UNOPENED VIALS FROM DATE OF MANUFACTURE

### **6.4 SPECIAL PRECAUTIONS FOR STORAGE**

DO NOT STORE ABOVE 25 DEGREE CENTIGRADE STORE IN THE ORIGINAL PACKAGE TO PROTECT FROM LIGHT.

### **6.5 NATURE AND CONTENTS OF CONTAINER**

GLASS VIAL OR BOTTLE WITH HALOGENATED BUTYL RUBBER STOPPER AND ALUMINIUM CAP, CONTAINING A STERILE POWDER , EQUIVALENT TO 1G CEFTRIAZONE. .

### **6.6 SPECIAL PRECAUTIONS FOR DISPOSAL AND OTHER HANDLING**

THE USE OF FRESHLY PREPARED SOLUTIONS IS RECOMMENDED

CEFTRIAZONE SHOULD NOT BE MIXED IN THE SAME SYRINGE WITH ANY DRUG OTHER THAN 1% LIDOCAINE HYDROCHLORIDE SOLUTION( FOR INTRAMUSCULAR INJECTION ONLY)

THE INFUSION LINE SHOULD BE FLUSHED AFTER EACH ADMINISTRATION.

### **7.0 APPLICANT**

**NAME AND ADDRESS:** ANDERSONS PHARMACEUTICALS LTD

PLOT 8 BLOCK C APAPA OSHODI EXPRESS WAY

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