National Agency for Food & Drug Administration & Control (NAFDAC)

Registration & Regulatory Affairs (R & R) Directorate

SUMMARY OF PRODUCT CHARACTERISTICS (SmPC) TEMPLATE

1. NAME OF THE MEDICINAL PRODUCT

Fortified procaine benzylpenicillin for injection, 4.0 Mega/vial

Powder for injection

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each vial contains procaine benzylpenicillin BP 3,000,000 I.U. and benzylpenicillin sodium BP 1,000,000 I.U.
Without excipients

3. PHARMACEUTICAL FORM

Powder for injection

4. Clinical particulars

4.1 Therapeutic indications

It is indicated in the therapy of severe infection caused by Penicillin G susceptible microorganism when rapid and high Penicillin levels are required in the conditions listed below. Therapy should be guided by bacteriological studies (including susceptible test) and by clinical response.

The following infections will usually respond to adequate dosage of aqueous penicillin G (parenteral). Streptococci infections, streptococci in group A,C, H, G,L and M are very sensitive to penicillin. Group D organisms are sensitive to the high serum levels obtained with aqueous penicillin G. Aqueous penicillin (parenteral) is the penicillin dosage form of choice for bacteremia, empyema, severe pneumonia, pericarditis, endocarditis, meningitis, and other severe infections caused by sensitive strains of the gram-positive species listed above. Pneumococcal infections

Staphylococcal infections-penicillin G sensitive Actinomycosis

Clostridia infections (including tetanus) Diphtheria (to prevent carrier state)

Erysipeloid endocarditis, fusospirochetal infection-severe infection of the oropharynx lowers respiratory tract and genital area due to fusobacterium fusosormisans spirochetes.

Gram negative bacillary infections

(E. coli, A. aerogenes, A. faecalis, Salmonella faecalis, P.mirabilis) Listeria infections (Listeria monocytogenes) meningitis and endocarditis

Pasteurella infections (Pasteurella multocida) Bacteremia and meningitis

Rat bite fever (Spirrulum minus or Streptobacillus moniliformis)

Gonorrheal endocarditis and arthritis (N. gonorrhoeae) syphilis (T. pallidum) including congenital syphilis.

Meningococcal meningitis

4.2 Posology and method of administration

400,000 I.U. every 12 or 24 hours

4.3 Contraindications

A history of a previous hypersensitivity reaction to any penicillin.

4.4 Special warnings and precautions for use

Carcinogenesis, mutagenesis, impairment of fertility: No information on long term studies is available on the carcinogenicity mutagenicity or fertility impairment with the use of penicillins.

Pregnancy:

Teratogenic effects: Reproduction studies performed in the mouse, rat and the rabbit have revealed no evidence of impaired fertility or harm to the fetus.

There is however no adequate and well-controlled studies in pregnant women showing conclusively the harmful effects of these drugs on the fetus can be excluded. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mother:

Penicillins are excreted in the human milk. Caution should be exercised when this drug is administered to a nursing woman.

PEDIATRIC USE:

Penicillins are excreted largely unchanged by the kidney because of incompletely developed renal function in infants; the rate of elimination will be slow. Use Caution in administering to new borns and evaluate organ system function frequently.

Warnings: Serious and occasionally fatal hypersensitivity reactions have been reported in patients on penicillin therapy. These reactions are more likely to occur in individuals with a history of penicillin hypersensitivity and or a history of sensitivity to multiple allergens. There have been reports of individuals with a history of penicillin hypersensitivity that have experienced severe reactions when treated with cephalosporins before initiating therapy with any penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins or other allergens. If an allergic reaction occurs, the drug should be discontinued and the appropriate therapy instituted. Serious

anaphylactic reactions require immediate emergency treatment with the epinephrine, oxygen, I.V steroids and airway management including intubation should also be used with caution in individuals with a history of significant allergies and/or asthma.

4.5 Interaction with other medicinal products and other forms of interaction

Concurrent administration of bacteriostatic antibiotics (erythromycin, tetracycline) may diminish the bactericidal effects of penicillin by slowing the rate of bacterial growth. Bactericidal agents work most effectively against the immature cell wall of rapidly proliferating microorganisms. This has been demonstrated in vitro; however the clinical significance of this interaction is not well documented. There are few clinical situations in which the concurrent use of static and bactericidal antibiotics is indicated. However, in selected circumstances in which such therapy is appropriate, using a rapid dosage of antibacterial agents in beginning penicillin therapy first should minimise the potential for interaction.

Penicillin blood levels may be prolonged by concurrent administration of Probenecid which blocks the renal tubular secretion of penicillins. Displacement of penicillin from plasma protein binding sites will elevate the level of free penicillin in the serum.

4.6 Pregnancy and Lactation

Carcinogenesis, mutagenesis, impairment of fertility: No information on long term studies is available on the carcinogenicity mutagenicity or fertility impairment with the use of penicillins.

Pregnancy:

Teratogenic effects: Reproduction studies performed in the mouse, rat and the rabbit have revealed no evidence of impaired fertility or harm to the fetus.

There is however no adequate and well-controlled studies in pregnant women showing conclusively the harmful effects of these drugs on the fetus can be excluded. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mother:

Penicillins are excreted in the human milk. Caution should be exercised when this drug is administered to a nursing woman.

4.7 Effects on ability to drive and use machines

None.

4.8 Undesirable effects

Penicillin is a substance of low toxicity but does have a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes raniging 「rol laculopapular erupliors lo exfolialive derrlalilis; urlicaria; and reaclions resernbling seru1 sickness, including chills, fever, ederra, arlhralgia and prostration. Severe and occasionally fatal analphylaxis has occurred.

Hemolytic anemia, leucopenia, thrombocytopenia, nephropathy. and neuropathy are rarely observed adverse reactions and are usually associated with high intravenous dosage.

Cardiac arrhythmias and cardiac arrest may also occur. (High dosage of penicillin G sodium may result in congestive heart failure due to high sodium intake.)

The Jarisch-Herxheimer reaction has been reported in patients treated for syphilis.

4.9 Overdose

Neurological adverse reactions, including convulsions, may occur with the attainment of high CSF levels of beta lactams. In case of overdose, discontinue medication, treat symptomatically, and institute supportive measures as required. Penicillin G sodium is hemodialyzable

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamics properties

Penicillin exerts a bactericidal action against penicillin susceptible micro- organisms during the stage of active multiplication. It acts through the inhibition of biosynthesis of cell wall mucopeptide rendering the cell wall osmotically unstable. It is not active against the penicillinase producing bacteria which include many strains of staphylococci.

5.2 Pharmacokinetic properties

Aqueous penicillin is rapidly absorbed following both intramuscular and subcutaneous injection. Initial blood levels following parenteral administration are high but transient. Penicillin binds to serum proteins mainly albumin.

Therapeutic levels of penicillin are easily achieved under normal circumstances in extracellular fluid and most other body tissues. Penicillins are distributed with varying degrees into pleural, pericardial, peritoneal,

ascitic, synovial and interstitial fluids. Penicillins are excreted in breast milk. Penetration into the CSF eyes and prostrate is poor. Penicillins are rapidly excreted in the urine as unchanged drug. Approximately 60% of the dose is excreted with 5 hours.

5.3 Preclinical safety data

Reproductive studies in mice, rats and rabbits revealed no negative effects on fertility or on the foetuses. No long-term studies on laboratory animals are available with regard to carcinogenicity, mutagenicity and fertility.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Without excipients

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

3years

6.4 Special precautions for storage

Store in a dry place below 30℃, Protect from light.

6.5 Nature and contents of container <and special equipment for use, administration or implantation>

18ml Mould vial fitted with a butyl rubber stopper and aluminium cap.

6.6 Special precautions for disposal <and other handling>

No special requirements.

7. <APPLICANT/MANUFACTURER>

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8. APPLICANT
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