SUMMARY OF PRODUCT CHARACTERISTICS (SmPC)

1-Name of the Medicinal Product : Crystalline Penicillin G.Injection 1mega

1.1 Product Name: Crystalline Penicillin G. Injection

1.2 Strength: 1mega

1.3 Pharmaceutical Dosage Form: powder for injection

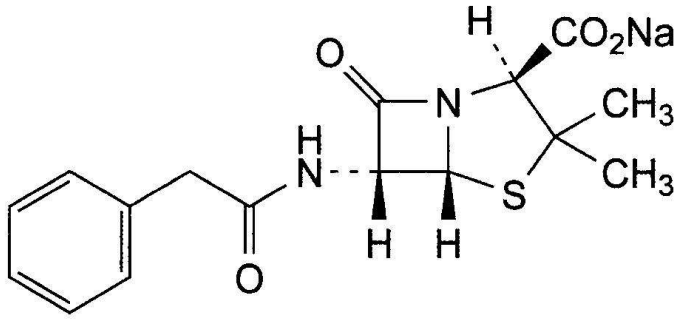
2-Quality and Quantitative Composition :

2.1 Qualitative Declaration
The active substance of the Crystalline Penicillin G. Injection is Benzylpenicillin sodium.

Benzylpenicillin sodium： White or almost white, crystalline powder.Very soluble in water, practically insoluble in fatty oils and in powder paraffin.

The molecular formula of Benzylpenicillin Sodium: $C_{16}H_{17}N_2NaO_4S$

The structural formula of Benzylpenicillin Sodium :



The molecular weight of Benzylpenicillin Sodium : 356.4
The CAS number of Benzylpenicillin Sodium : 69-57-8

2.2 Quantitative Declaration
Crystalline Penicillin G. Injection 1mega
Dosage form： powder for injection
Concentration： 1mega

Product description： 1mega of white or almost white, crystalline powder is filled in the glass vial.

Ingredients	Quantity per vial	Function of ingredients
Benzylpenicillin Sodium	1mega	Active substance

3-Pharmaceutical Form ：

Dosage form： powder for injection
1mega of white, crystalline powder is filled in the glass vial.

4-Clinical Particulars

4.1 Therapeutic indications

Penicillin is suitable for all kinds of infections caused by sensitive bacteria, such as abscesses, bacteremia, pneumonia and endocarditis. Among them, penicillin is the preferred drug for the following infections:
1) Hemolytic streptococcal infections, such as pharyngitis, tonsillitis, scarlet fever, erysipelas, cellulitis, and puerperal fever.
2) Streptococcus pneumoniae infections such as pneumonia, otitis media, meningitis, and bacteremia.
3) Staphylococcus infection without producing penicillin enzyme.
4) Anthrax.
5) Clostridium infection such as tetanus and gas gangrene.
6) Syphilis (including congenital syphilis).
7) Leptospirosis.
8) Recurrent fever.
9) Diphtheria.
10)Penicillin and aminoglycosides are used together to treat grass green streptococcal endocarditis.
Penicillin can also be used for treatment:
1) Epidemic cerebrospinal meningitis.
2) Actinomycosis.
3) Gonorrhea.
4) Fensen pharyngitis.
5) Lyme disease.
6) Rat bite fever.
7) Listeria infection.
8) Many anaerobic bacterial infections other than Bacteroides fragilis.
Penicillin can be used to prevent infective endocarditis in patients with rheumatic heart disease or congenital heart disease before oral, dental, gastrointestinal or urogenital surgery and operation.

4.2 Posology and method of administration

- Recommended doses :

Penicillin is administered by intramuscular injection or intravenous drip.

1)Adults: Intramuscular injection, 800000-2 million units per day, administered in 3-4 doses; Intravenous infusion, 2 to 20 million units per day, administered in 2-4 times.

2) Children: intramuscular injection, administered at a weight of 25000 units/kg, once every 12 hours; Intravenous infusion: Administer 2-4 times daily based on a body weight of 50000 to 200000 units/kg.

3) Newborns (full term delivery): administered by intramuscular injection or intravenous drip at a weight of 50000 units/kg each time; Once every 12 hours in the first week of birth, once every 8 hours for those over a week, and once every 6 hours for severe infections.

4) Premature infants: weighing 30000 units/kg each time, once every 12 hours in the first week of birth, and once every 8 hours in 2-4 weeks of age; Once every 6 hours thereafter.

5) Patients with renal dysfunction: Patients with mild to moderate renal dysfunction do not need to reduce the conventional dosage. Patients with severe renal dysfunction should extend the dosing interval or adjust the dosage. When the clearance rate of endogenous creatinine is 10-50ml/min, the administration interval is extended from 8 hours to 8-12 hours, or the administration interval remains unchanged and the dosage is reduced by 25%; When the clearance rate of endogenous creatinine is less than 10ml/min, the administration interval is extended to 12-18 hours or each dose is reduced to 25-50% of the normal dose, while the administration interval remains unchanged.

6) During intramuscular injection, every 500000 units of penicillin sodium should be dissolved in 1ml of sterile injection water. If it exceeds 500000 units, 2ml of sterile injection water should be added, and sodium chloride injection should not be used as a solvent; The administration rate during intravenous infusion should not exceed 500000 units per minute to avoid central nervous system toxicity reactions.

4.3 Contraindications

Patients with a history of allergic reactions to penicillin drugs or positive skin tests for penicillin are prohibited.

4.4 Special warnings and precautions for use

1) Before using this product, it is necessary to inquire about the drug allergy history in detail and carry out penicillin skin test. The skin test solution contains 500 units of penicillin per 1ml. intradermal injection is 0.05-0.1ml. After 20 minutes, observe the skin test results. Those with positive reactions are prohibited. Users must be desensitized before use, and emergency preparedness for allergic reactions should be prepared at all times.
2) Individuals who are allergic to one type of penicillin may be allergic to other penicillin drugs or penicillamine. Patients with allergic diseases such as asthma, eczema, hay fever, urticaria, etc. should use this product with caution.
3) Penicillin aqueous solution is unstable at room temperature. The potency of 20 units/ml penicillin solution decreases by 56% after being placed at 30 ℃ for 24 hours, and the content of penicillic acid increases by 200 times. Therefore, this product must be freshly prepared for use.
4)When using this product in large doses, electrolytes should be regularly tested;
5) Interference with diagnosis:
During the application of penicillin, false positives may appear when using the copper sulfate method to determine urine sugar, while the glucose enzyme method is not affected.
Intravenous infusion of this product can cause an increase in the blood sodium measurement value.
This product can increase serum alanine aminotransferase or aspartate aminotransferase.

4.5 Interaction with other medicinal products and other forms of interaction

1)Chloramphenicol, erythromycin, tetracyclines, and sulfonamides can interfere with the activity of this product, so this product should not be used in combination with these drugs.
2. Propofol, aspirin, indomethacin, fentanyl, and sulfonamide drugs reduce the secretion of penicillin in the renal tubules and prolong the serum half-life of this product. Penicillin can enhance the anticoagulant effect of warfarin.
3. This product is incompatible with heavy metals, especially copper, zinc, and mercury.
4. When lincomycin, tetracycline, vancomycin, erythromycin ethylsuccinate, amphotericin B, norepinephrine, m-hydroxylamine, phenytoin sodium, hydroxyzine hydrochloride, prochlorazine, promethazine, vitamin B, vitamin C, etc. are added into penicillin intravenous infusion, turbidity will appear.
5. The same bottle infusion of this product and aminoglycoside antibiotics can lead to a decrease in their antibacterial activity, so they cannot be administered in

the same container.

4.6 Pregnancy and lactation

Animal reproductive tests did not detect any fetal damage caused by this product. However, strict controlled trials have not yet been conducted in pregnant women to exclude the adverse effects of these drugs on the fetus, so pregnant women should only use this product when necessary. A small amount of this product is secreted from milk, and lactating women should pause breastfeeding when taking medication.

4.7 Effects on ability to drive and use machines

N.A.

4.8 Undesirable effects

1)Allergic reactions: Penicillin allergic reactions are more common, including various types of rashes such as urticaria, leukopenia, interstitial nephritis, asthma attacks, and serum disease type reactions; Allergic shock is occasionally seen, and once it occurs, it must be rescued on site, with treatment measures such as maintaining airway patency, oxygen inhalation, and the use of adrenaline and glucocorticoids.

2)Toxic reactions: Rare, but when high-dose intravenous infusion or intrathecal administration of this product, seizures, muscle clonus, coma, and serious mental symptoms can be caused by high concentration of cerebrospinal fluid drugs (penicillin encephalopathy). This reaction is commonly seen in infants, elderly people, and patients with renal insufficiency.

3)Hester's reaction and treatment contradiction: When penicillin is used to treat diseases such as syphilis and leptospirosis, the symptoms may worsen due to the death of the pathogen, which is called Hester's reaction; Contradictions in treatment can also be seen in syphilis patients, due to the rapid disappearance of syphilis lesions after treatment, relatively slow tissue repair, or the contraction of fibrous tissue at the lesion site, which hinders organ function.

4) Double infection: Double infections such as penicillin resistant Staphylococcus aureus, Gram negative bacilli, or Candida can occur.

5) The use of high-dose penicillin sodium can lead to heart failure due to ingestion of large amounts of sodium salts.

4.9 Overdose

The main manifestation of drug overdose is adverse reactions in the central nervous system, which should be stopped in a timely manner and given symptomatic and supportive treatment. Hemodialysis can clear penicillin.

5-Pharmacological properties

5.1 Pharmacology and toxicology

Penicillin has good antibacterial effect on hemolytic streptococcus and other

Streptococcus, streptococcus pneumoniae and staphylococcus that do not produce penicillin enzyme. It has moderate antibacterial effect on Enterococcus. Neisseria gonorrhoeae, Neisseria meningitidis, Corynebacterium diphtheriae, Bacillus anthracis, Actinomyces bovis, Streptobacillus moniliformis, Listeria, Leptospira and Treponema pallidum are sensitive to this product. This product also has certain antibacterial activity against Haemophilus influenzae and Bordetella pertussis, while other Gram negative aerobic or facultative anaerobic bacteria have poor sensitivity to this product. This product has good antibacterial effect on Clostridium, Peptostreptococcus anaerobes and Bacteroides melanogenes, but poor antibacterial effect on Bacteroides fragilis.
Penicillin exerts bactericidal effects by inhibiting bacterial cell wall synthesis.

5.2 Pharmacokinetics

After intramuscular injection, the peak blood concentration (Cmax) was reached at 0.5 hours, and the peak concentration of 1 million units (600mg) intramuscular injection was 20000 units/L (12mg/L). Newborns receive intramuscular injection of 25000 units/kg (15mg/kg) of penicillin according to their body weight. After 0.5 to 1 hour, the average blood concentration is about 22mg/L, and after 12 hours, it drops to 9.6 to 19.2mg/L. Adults inject 2 million units of this product intravenously every 2 hours or 3 million units every 3 hours, with an average blood concentration of approximately 19.2mg/L. Within 5 minutes of intravenous injection of 5 million units (3g) of penicillin, the average blood drug concentrations were 400mg/L and 273mg/L at 5 and 10 minutes after administration, which decreased to 45mg/L at 1 hour and only 3.0mg/L at 4 hours.
This product is widely distributed in tissues and body fluids. The concentration in the chest, abdominal cavity, and joint cavity fluids is approximately 50% of the serum concentration. This product is not easy to penetrate into the eyes, bone tissue, non blood supply areas, and pus cavity, and is easy to penetrate into inflamed tissues. Penicillin can pass through the placenta. Except for the low concentration of penicillin in amniotic fluid during the first three months of pregnancy, effective therapeutic concentrations can generally be obtained in both the fetus and amniotic fluid. This product is difficult to penetrate the blood cerebrospinal fluid barrier, and its concentration in non inflammatory cerebrospinal fluid is only 1% to 3% of the blood drug concentration. The concentration in the inflammatory cerebrospinal fluid can reach 5% to 30% of the blood drug concentration during the same period. Milk can contain a small amount of penicillin, with a concentration of 5% to 20% of the blood drug concentration.
The plasma protein binding rate of this product is between 45% and 65%. Blood elimination half-life (t1/2 β) It takes about 30 minutes, and can be extended to

2.5-10 hours for those with decreased renal function, as well as for the elderly and

newborns. T1/2 of newborns β Related to weight and age, t1/2 of newborns born on the 7th and 8-14 days of age with a weight below 2 kilograms β 4.9 and 2.6 hours respectively; For individuals weighing more than 2 kilograms, t1/2 at 7 days and 8-14 days of age β It is 2.6 hours and 2.1 hours respectively.
About 19% of this product is metabolized in the liver. Under normal renal function, approximately 75% of the dosage is excreted from the kidneys within 6 hours. Penicillin is mainly excreted through the secretion of renal tubules, with only about 10% of healthy adults excreted through glomerular filtration; However, in newborns, penicillin is mainly excreted through glomerular filtration. A small amount of penicillin is also excreted through the bile duct. After intramuscular injection of 600mg penicillin, the concentration in the bile reaches a peak of 10-20mg/L. Due to the destruction of penicillin by penicillinase produced by intestinal bacteria, feces do not contain or only contain a small amount of penicillin. Hemodialysis can clear this product, while peritoneal dialysis cannot.

5.3 Preclinical safety data

N.A

6-Pharmaceutical Particulars :

6.1 List of excipients

There is no excipients used in the Crystalline Penicillin G. Injectionn manufacturing.

6.2 Incompatibilities
The stability of the drug product demonstrated that there was no compatibility problem between drug substance and packaging materials.

6.3 Shelf life
36 months.

6.4 Special precautions for storage
The sealed container should be stored at a temperature not exceeding 30°.

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

A mode sodium-calcium glass molded injection bottle.

6.6 Special precautions for disposal

N.A.

7-Name Of Manufacturer&Marketing Authorization Holder :

7.1 Manufacturer:

Anhui Chengshi Phamaceutical Co., Ltd.
No. 5068 Huaishang road,Bengbu,Anhui province, China
E-mail:csyy2827111@163.com

7.2 Marketing Authorization Holder:

GLOBAL YOUNG PHARMA LIMITED
AGARA BABA PUPA, ROAD 5 (HOUSE NO.3) OFF ODO-ONA ELEWVE, NEW GARAGE, IBADAN OYO STATE.
E-mail: