

For the use only of Registered Medical Practitioners or a Hospital or a Laboratory

NEOSPORIN ANTIBIOTIC POWDER

Neomycin Sulphate, Polymyxin B Sulfate and Bacitracin Zinc Powder

QUALITATIVE AND QUANTITATIVE COMPOSITION

Each gram contains:

Polymyxin B Sulfate USP equivalent to Polymyxin B 5000 units

Bacitracin Zinc IP equivalent to Bacitracin 400 units

Neomycin Sulphate IP equivalent to Neomycin 3400 units

PHARMACEUTICAL FORM

Powder for topical use.

CLINICAL PARTICULARS

Therapeutic Indications

NEOSPORIN ANTIBIOTIC POWDER is indicated in conditions where superficial bacterial skin infection is present or likely to occur. These include:

- Prophylaxis in graft donor sites, the suturing of lacerations, accidental cuts, scratches and abrasions.
- Treatment of infected ulcers, accidental cuts, scratches and abrasions and superficial skin infections following surgical procedures and minor burns, impetigo and secondarily infected skin conditions.

The use of *NEOSPORIN ANTIBIOTIC POWDER* does not exclude concomitant systemic therapy with antibiotics where appropriate (*see Special Warnings and Special Precautions for Use*).

Posology and Method of Administration

Topical powder:

NEOSPORIN ANTIBIOTIC POWDER is for topical skin administration only.

Populations

Adults

Following any necessary removal of debris, such as pus, crusts, etc. from the affected area, a thin layer of powder should be applied one to three times daily, depending on the clinical condition.

Treatment should not be continued for more than seven days without medical supervision.

- ***Children***

NEOSPORIN ANTIBIOTIC POWDER is suitable for use in children (two years and over) at the same dose as adults. A possibility of increased absorption exists in very young children, thus the product is not recommended for use in neonates and infants (less than two years) (*see Contraindications and Special Warnings and Special Precautions for Use*).

- ***Elderly***

NEOSPORIN ANTIBIOTIC POWDER is suitable for use in the elderly. Caution should be exercised in cases where a decrease in renal function exists and significant systemic absorption of neomycin sulphate may occur (*see Special Warnings and Special Precautions for Use*).

- ***Renal Impairment***

Dosage should be reduced in patients with reduced renal function (*see Special Warnings and Special Precautions for Use*).

Contraindications

- The use of *NEOSPORIN ANTIBIOTIC POWDER* is contraindicated in patients who have demonstrated allergic hypersensitivity to any of the ingredients of the product or to cross-sensitising substances such as framycetin, kanamycin, gentamycin and other related antibiotics.
- Due to the known ototoxic and nephrotoxic potential of neomycin sulphate the use of *NEOSPORIN ANTIBIOTIC POWDER* in large quantities or on large areas for prolonged periods of time is not recommended in circumstances where significant systemic absorption may occur.
- A possibility of increased absorption exists in very young children, thus *NEOSPORIN ANTIBIOTIC POWDER* is not recommended for use in neonates and infants (less than 2 years). In neonates and infants, absorption by immature skin may be enhanced and renal function may be immature.
- The presence of pre-existing nerve deafness is a contraindication to the use of *NEOSPORIN ANTIBIOTIC POWDER* or any topical aminoglycoside in circumstances where significant systemic absorption could occur.

- *NEOSPORIN ANTIBIOTIC POWDER* should not be used to treat otitis externa in the presence of a perforated tympanic membrane because of the risk of ototoxicity.

Special Warnings And Special Precautions For Use

As with other antibacterial preparations, prolonged use may result in the overgrowth of non-susceptible organisms, including fungi.

Pseudomembranous colitis has been reported with the use of antibiotics and may range in severity from mild to life-threatening. Therefore, it is important to consider its diagnosis in patients who develop diarrhoea during or after antibiotic use. Although this is unlikely to occur with topically applied antibiotics, if prolonged or significant diarrhoea occurs or the patient experiences abdominal cramps, treatment should be discontinued immediately and the patient investigated further.

Following significant systemic absorption, aminoglycosides such as neomycin can cause irreversible ototoxicity; neomycin sulphate, polymyxin B sulphate and bacitracin zinc have nephrotoxic potential and polymyxin B sulphate has neurotoxic potential.

In renal impairment the plasma clearance of neomycin is reduced (*see Posology and Method of Administration*).

The concurrent use of other aminoglycoside antibiotics is not recommended in circumstances where significant systemic absorption of neomycin sulphate could occur following topical application.

Avoid introduction of *NEOSPORIN ANTIBIOTIC POWDER* into the eyes. If *NEOSPORIN ANTIBIOTIC POWDER* is accidentally introduced into the eye, the eye should be rinsed thoroughly with cold water.

NEOSPORIN ANTIBIOTIC POWDER should be kept out of reach of children.

Interaction with Other Medicaments and Other Forms of Interaction

Following significant systemic absorption, both neomycin sulphate and polymyxin B sulphate can intensify and prolong the respiratory depressant effects of neuromuscular blocking agents.

However, the neuromuscular blocking activity of neomycin sulphate and polymyxin B sulphate is unlikely to present a hazard during use of *NEOSPORIN ANTIBIOTIC POWDER*.

Pregnancy and Lactation

There is little information to demonstrate the possible effect of topically applied neomycin in pregnancy and lactation. However, neomycin present in maternal blood can cross the placenta and may give rise to a theoretical risk of foetal toxicity, thus use of *NEOSPORIN ANTIBIOTIC POWDER* is not recommended in pregnancy and lactation.

Effects on Ability to Drive and Use Machines

None reported.

Undesirable Effects

The incidence of allergic hypersensitivity reactions to neomycin sulphate in the general population is low. There is, however, an increased incidence of hypersensitivity to neomycin in certain selected groups of patients in dermatological practice particularly those with venous stasis eczema and ulceration.

Allergic hypersensitivity to neomycin sulphate following topical application may manifest itself as a reddening and scaling of the affected skin, as an eczematous exacerbation of the lesion or as a failure of the lesion to heal.

Allergic hypersensitivity reactions following topical application of polymyxin B sulphate and bacitracin zinc are rare events but have been reported.

Anaphylactic reactions following the topical administration of bacitracin zinc have been reported; but these are rare occurrences.

Post marketing Data (with Neomycin-polymyxin B- bacitracin skin ointment)

Immune System Disorder

Rare: Application site hypersensitivity

General Disorders and Administration Site Conditions

Rare: Application site reactions including pain, erythema, oedema, pruritis and exacerbation of underlying skin conditions.

Overdose

Symptoms and Signs

Following accidental ingestion of *NEOSPORIN ANTIBIOTIC POWDER*, minimal absorption is expected.

No specific symptoms or signs have been associated with excessive use of *NEOSPORIN ANTIBIOTIC POWDER*. However, consideration should be given to significant systemic absorption (*see Special Warnings and Special Precautions for Use*).

Treatment

Use of the product should be stopped and the patient's general status, hearing acuity, renal and neuromuscular functions should be monitored.

Blood levels of neomycin sulphate, polymyxin B sulphate and bacitracin zinc should also be determined, and haemodialysis may reduce the serum level of neomycin sulphate.

PHARMACOLOGICAL PROPERTIES

Pharmacodynamic Properties

Mechanism of action

Polymyxin B sulphate : Polymyxin B is thought to damage the bacterial cytoplasmic membrane, which subsequently causes leakage of the intracellular components. The drug interferes with the structure and function of outer and cytoplasmic membranes in gram-negative bacteria. The polymyxins interact with lipopolysaccharides and phospholipids of the outer membrane. They also interact electrostatically by displacing calcium and magnesium from negatively charged phosphate groups of membrane lipids.

Neomycin sulphate : Neomycin is an aminoglycoside antibiotic which acts by binding to a specific protein on the 30S subunit of the microbial ribosome, leading to faulty alignment or recognition with respect to messenger RNA and probably t-RNA during initiation of microbial peptide chain formation. The messenger RNA is misread on the recognition region of the ribosome, resulting in the wrong amino acid being inserted into the peptide. The affected ribosomes are released and may be able to re-initiate and repeat the process, leading to increased proportions of nonfunctional peptide chains.

Bacitracin Zinc: Bacitracin is a mixture of polypeptides derived from *Bacillus subtilis*. It inhibits growth of bacteria primarily by preventing the formation of peptidoglycan chains needed for cell wall synthesis and by altering membrane permeability

Pharmacodynamic Effects

NEOSPORIN ANTIBIOTIC POWDER is active *in vitro* against a wide range of bacterial pathogens found in superficial dermatological infections. Susceptible organisms include:

Gram-positive:

- *Staphylococcus* spp. including *Staphylococcus aureus*
- *Streptococcus* spp. including *Streptococcus pyogenes*.

Gram-negative:

- *Enterobacter* spp.
- *Escherichia* spp.
- *Haemophilus* spp.
- *Klebsiella* spp.
- *Neisseria* spp.
- *Proteus* spp.
- *Pseudomonas* spp. including *Pseudomonas aeruginosa*.

Pharmacokinetic Properties

Neomycin sulphate : Absorption through skin is limited. Topical application of neomycin in petrolatum does not result in detectable drug concentrations in either serum or urine.

Preclinical Safety Data

No relevant data.

PHARMACEUTICAL PARTICULARS

List of Excipients

Starch (Sanitised), Polysan [Idophor with Tamed Iodine (Iodine 1.6% w/v containing Alkyl phenoxy polyethoxy Ethanol in water)}

Incompatibilities

No incompatibilities have been identified.

Shelf-Life

The expiry date is indicated on the label and packaging.

Special Precautions for Storage

Store at a temperature not exceeding 30°C, in a dry place.

Keep out of reach of children.

Nature and Specification of Container

HDPE bottle.

Instructions for Use / Handling

FOR EXTERNAL USE ONLY.

Keep container tightly closed.

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