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

BETNESOL

1. GENERIC NAME

Betamethasone Sodium Phosphate Injection IP

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:
Betamethasone Sodium Phosphate IP equivalent to Betamethasone 4 mg
Phenol IP (Preservative) 0.5 % w/v

List of Excipients

Phenol, Disodium Edetate, Sodium Metabisulphite, Sodium Chloride, Sodium Hydroxide, Water for Injection.

3. DOSAGE FORM AND STRENGTH

Solution for injection.

For information on strength(s) refer *2. Qualitative and Quantitative Composition* above.

4. CLINICAL PARTICULARS

4.1 Therapeutic Indication

BETNESOL Injection is indicated for the following conditions:

- Status asthmaticus.*
- Acute allergic reactions, including anaphylactic reaction to drugs.**
- Severe shock arising from surgical or accidental trauma or overwhelming infection.*
- Acute adrenal crisis caused by abnormal stress in Addison's disease, Simmond's disease, hypopituitarism following adrenalectomy, and when adrenocortical function has been suppressed by prolonged corticosteroid therapy.
- Soft tissue lesions such as tennis elbow, tenosynovitis and bursitis.

* *BETNESOL* injection does not replace other forms of therapy for the treatment of shock and status asthmaticus
** *BETNESOL* injection supplements the action of adrenaline.

4.2 Posology and Method of Administration

Populations

Systemic therapy in adults

4 to 20 mg betamethasone (1 to 5 mL) administered by i.v. injection over half to one minute. This dose can be repeated three or four times in 24 hours, or as required, depending upon the condition being treated and the patient's response. Alternatively, betamethasone sodium phosphate injection may be given in an i.v. infusion. The same dose can be given by i.m. injection, but the response is likely to be less rapid, especially in shock. This dose can be repeated three or four times in 24 hours, depending upon the condition being treated and the patient's response.

Systemic therapy in children

Infants up to 1 year may be given 1 mg betamethasone intravenously; children aged 1 to 5 years, 2 mg; 6 to 12 years, 4 mg (1 mL). This dose can be repeated three or four times in 24 hours, depending upon the condition being treated and the patient's response.

Other Routes

Local injections of 4 to 8 mg betamethasone sodium phosphate injection may be used when treating soft tissue lesions in adults; children may require smaller doses.

This dose can be repeated on two or three occasions depending on the patient's response.

Betamethasone sodium phosphate injection has also been administered sub-conjunctivally as a single injection of 0.5 to 1 mL.

Intrathecal use is not recommended.

4.3 Contraindications

- Systemic infections unless specific anti-infective therapy is employed.
- Live virus immunisation.
- *BETNESOL* Injection contains sodium metabisulphite (0.1% w/v) as a preservative and therefore should not be used to treat patients with known hypersensitivity to bisulphite, metabisulphite or any other component of the injection.
- *BETNESOL* Injection should not be injected directly into tendons.

4.4 Special Warnings and Precautions for Use

Visual disturbance has been reported by patients using systemic and /or topical corticosteroids. If a patient has blurred vision or other visual disturbances, consider evaluation of possible causes which may include cataract, glaucoma or central serous chorioretinopathy.

Administration of corticosteroids may impair the ability to resist and counteract infection e.g., where there is a previous history of tuberculosis; in addition clinical signs and symptoms of infection are suppressed.

Chickenpox is of particular concern since this normally minor illness may be fatal in immunosuppressed patients. Patients without a definite history of chickenpox should be advised to avoid close contact with chickenpox or herpes zoster and, if exposed, they (or the parents of such children) should seek urgent medical attention. Passive immunisation with varicella/ zoster immunoglobulin (VZIG) is needed by exposed non-immune patients who are receiving systemic corticosteroids or who have used them within the previous three months. This should be given within ten days of exposure to chickenpox. If a diagnosis of chickenpox is confirmed, the illness warrants specialist care and urgent treatment. Corticosteroids should not be stopped and the dose may need to be increased.

Corticosteroid treatment is likely to reduce the response of the pituitary-adrenal axis to stress, and relative insufficiency may persist for up to a year after withdrawal of prolonged therapy.

Because of the possibility of fluid retention, care must be taken when corticosteroids are administered to patients with congestive heart failure.

Corticosteroids may worsen diabetes mellitus, osteoporosis, hypertension, glaucoma and epilepsy.

Care should be taken when there is a history of severe affective disorders (especially a previous history of steroid psychosis), previous steroid myopathy or peptic ulceration.

In patients with liver failure blood levels of corticosteroid may be increased, as with other drugs which are metabolised in the liver.

Systemic corticosteroids may cause growth retardation in infancy, childhood and adolescence. Treatment should be limited to the minimum dosage for the shortest possible time. In order to minimise suppression of the HPA axis and growth retardation consideration should be given to administration of a single dose on alternate days.

Treatment of elderly patients, particularly if long term, should be planned bearing in mind the more serious consequences of the common adverse reactions of corticosteroids in old age, especially osteoporosis, diabetes, hypertension, susceptibility to infection and thinning of the skin.

When treatment is to be discontinued, the dose should be reduced gradually over a period of several weeks or months depending on the dosage and duration of the therapy.

4.5 Drug Interactions

Corticosteroids may reduce the effects of anticholinesterases in myasthenia gravis, cholecystographic x-ray media, salicylates and non-steroidal anti-inflammatory agents.

The effect of corticosteroids may be reduced by phenytoin, phenobarbitone, ephedrine and rifampicin.

The dosage of concomitantly administered anti-coagulants may have to be altered (usually decreased).

Oestrogens may potentiate the effects of glucocorticoids and dosage adjustments may be required if oestrogens are added to or withdrawn from a stable dosage regimen.

Betamethasone is metabolised by CYP3A4 and co-administration with CYP3A inhibitors (e.g. ritonavir, cobicistat, itraconazole) is expected to increase the systemic concentration of betamethasone.

4.6 Use in Special Populations

Pregnancy and Lactation

The use of corticosteroids during human pregnancy and lactation requires that the benefits be weighed against the possible risks associated with the product or with any alternative therapy.

Pregnancy

There is insufficient evidence of safety in human pregnancy.

Administration of corticosteroids to pregnant animals can cause abnormalities of foetal development including cleft palate and intrauterine growth retardation. The relevance of this finding to human beings has not been established, however, patients should avoid extensive use in pregnancy.

Hypoadrenalism may occur in the neonate.

Lactation

Corticosteroids are excreted in small amounts in breast milk and infants of mothers taking pharmacological doses of corticosteroids should be monitored carefully for signs of adrenal suppression.

4.7 Effects on Ability to Drive and Use Machines

None identified.

4.8 Undesirable Effects

Adverse drug reactions (ADRs) are listed below by MedDRA system organ class and by frequency. Frequencies are defined as: very common (≥1/10), common (>1/100 and <1/10), uncommon (>1/1,000 and <1/100), rare (>1/10,000 and <1/1,000), very rare (<1/10,000), and not known (cannot be estimated from the available data).

System Organ Class	Adverse reaction(s)	Frequency
Endocrine disorders	Prolonged treatment with corticosteroids in high dosage is associated with any of the features of hypercortisolism, such as suppression of the HPA axis.	Not known

System Organ Class	Adverse reaction(s)	Frequency
	In children, prolonged therapy may retard growth.	Not Known
Metabolism and nutrition disorders	Hypokalemia, hypokalemic paralysis. Altered fluid and electrolyte balance.	Very rare Not Known
Psychiatric disorders	Psychic instability.	Rare
Nervous system disorders	Benign intracranial hypertension.	Rare
Eye disorders	Prolonged treatment with corticosteroids in high dosage is associated with subcapsular cataract and glaucoma.	Not known
Gastrointestinal disorders	Peptic ulceration may develop, or be aggravated.	Not known
Skin and subcutaneous tissue disorders	Prolonged treatment with corticosteroids in high dosage is associated with skin thinning.	Not known
Musculoskeletal and connective tissue disorders	Prolonged treatment with corticosteroids in high dosage is associated with osteoporosis. Aseptic osteonecrosis, particularly of the femoral head, may occur after prolonged corticosteroid therapy or after repeated short courses involving high dosage.	Not known Not known

4.9 Overdose

Symptoms and Signs

Acute overdosage is very unlikely to occur, however in the case of chronic overdosage or misuse the features of hypercortisolism (see *section 4.8 Undesirable Effects*), may appear and in this situation the product should be discontinued slowly (see *section 4.4 Special Warnings and Precautions for Use*).

Treatment

There is no specific treatment for an overdose of betamethasone sodium phosphate. If overdose occurs, the patient is to be treated supportively with appropriate monitoring as necessary.
Further management should be as clinically indicated or as recommended by the national poisons centre, where available.

5. PHARMACOLOGICAL PROPERTIES

ATC Code
H02AB01 Corticosteroids for systemic use, plain, Glucocorticoids.

5.1 Mechanism of Action

Corticosteroids exhibit anti-inflammatory, antipruritic, and vasoconstrictive properties. At the cellular level, corticosteroids induce peptides called lipocortins. Lipocortins antagonize phospholipase A2, an enzyme which causes the breakdown of leukocyte lysosomal membranes to release arachidonic acid. This action decreases the subsequent formation and release of endogenous inflammatory mediators including prostaglandins, kinins, histamine, liposomal enzymes and the complement system.

Early anti-inflammatory effects of topical corticosteroids include the inhibition of macrophage and leukocyte movement and activity in the inflamed area by reversing vascular dilation and permeability. Later inflammatory processes such as capillary production, collagen deposition, keloid (scar) formation also are inhibited by corticosteroids. Clinically, these actions correspond to decreased edema, erythema, pruritus, plaque formation and scaling of the affected skin.

5.2 Pharmacodynamic Properties

See above.

5.3 Pharmacokinetic Properties

No relevant text.

6. NONCLINICAL PROPERTIES

No relevant text.

7. DESCRIPTION

Solution for injection

Each ml contains:
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List of Excipients

Phenol, Disodium Edetate, Sodium Metabisulphite, Sodium Chloride, Sodium Hydroxide, Water for Injection.

8. PHARMACEUTICAL PARTICULARS

8.1 Incompatibilities

There are no relevant data available.

8.2 Shelf Life

The expiry date is indicated on the label and packaging.

8.3 Packaging Information

Ampoules in blister pack in a carton.

8.4 Storage and Handling Instructions

Store protected from light at a temperature not exceeding 30°C.
Keep out of reach of children.

9. PATIENT COUNSELLING INFORMATION

Registered Medical Practitioners may counsel their patients (and/or patients' caregiver as applicable) about the special warnings and precautions for use, drug interactions, undesirable effects, and any relevant contraindications of *BETNESOL*. Patients (and/or patients' caregiver) may also be informed about posology, method of administration and storage/handling information as applicable.

10. DETAILS OF MANUFACTURER

The Manufacturing Site details are mentioned on the label and packaging.

For further information please contact:
GlaxoSmithKline Pharmaceuticals Limited.
Registered Office:
Dr. Annie Besant Road, Worli
Mumbai 400 030.

11. DETAILS OF PERMISSION OR LICENCE NUMBER WITH DATE

Manufacturing License number is indicated on the label and packaging.

12. DATE OF REVISION

07-FEB-2025

Version: BET-INJ/PI/IN/2025/01

Adapted from:

- *Betamethasone sodium phosphate GDS Version 09 dated 9 December 2024.*
- *Clinical Pharmacology - Betamethasone Monograph available from:* https://www.clinicalkey.com/pharmacology/monograph/64