

8028120-9093

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

# DEFLAZEN

(Deflazacort Tablets 6 mg & 30 mg)

## COMPOSITION:

### DEFLAZEN 6

Each uncoated tablet contains :

Deflazacort 6 mg

Excipients q.s.

### DEFLAZEN 30

Each uncoated tablet contains :

Deflazacort 30 mg

Excipients q.s.

## DESCRIPTION:

Deflazacort is an oxaline derivative of prednisolone. Chemically it is described as 11β, 21-Di-hydroxy-2'methyl-5'β H-pregna-1, 4-dieno [17,16-d] oxazole-3, 20-dione-21-acetate with a molecular weight 441.5.

## CLINICAL PHARMACOLOGY:

### Mechanism of Action:

Deflazacort is a glucocorticoid, its anti-inflammatory and immunosuppressive effects are used in treating a variety of diseases and are comparable to other anti-inflammatory steroids. The oxaline substitution of prednisolone reduces lipid solubility. This change in structure may be the basis for its reduced adverse effect profile.

### Pharmacokinetics:

Orally administered deflazacort appears to be well absorbed and is immediately converted by plasma esterases to the pharmacologically active metabolite (D21-OH), which achieves peak plasma concentrations in 1.5 to 2 hours. It is 40% protein-bound and has no affinity for corticosteroid binding globulin (transcortin). Its elimination plasma half-life is 1.1 to 1.9 hours. Elimination takes place primarily through the kidneys; 70% of the administered dose is excreted in the urine. The remaining 30% is eliminated in the faeces. Metabolism of D 21-OH is extensive; only 18%of urinary excretion represents D 21-OH. The metabolite of D21-OH, deflazacort 6-beta-OH, represents one third of the urinary elimination.

### INDICATIONS:

For the treatment of severe asthma, rheumatoid arthritis when glucocorticoid therapy is warranted.

### DOSAGE AND ADMINISTRATION:

Deflazacort is a glucocorticoid derived from prednisolone and 6 mg of deflazacort has approximately the same anti-inflammatory potency as 5 mg prednisolone or prednisone. Doses vary widely in different diseases and different patients. In more serious and life-threatening conditions, high doses of deflazacort may need to be given. When deflazacort is used long term in relatively benign chronic diseases, the maintenance dose should be kept as low as possible. Dosage may need to be increased during periods of stress or in exacerbation of illness. The dosage should be individually titrated according to diagnosis, severity of disease and patient response and tolerance. The lowest dose that will produce an acceptable response should be used.

**Adults:** For acute disorders, up to 120 mg/day deflazacort may need to be given initially. Maintenance doses in most conditions are within the range 3-18 mg/day. The following regimens are for guidance only. Rheumatoid arthritis : The maintenance dose is usually within the range 3-18 mg/day. The smallest effective dose should be used and increased if necessary.

Bronchial asthma : In the treatment of an acute attack, high doses of 48-72 mg/day may be needed depending on severity and gradually reduced once the attack has been controlled. For maintenance in chronic asthma, doses should be titrated to the lowest dose that controls symptoms.

**Hepatic Impairment:** In patients with hepatic impairment, blood levels of deflazacort may be increased.

Therefore the dose of deflazacort should be carefully monitored and adjusted to the minimum effective dose.

**Renal Impairment :** In renally impaired patients, no special precautions other than those usually adopted in patients receiving glucocorticoid therapy are necessary.

**Elderly:** In elderly patients, no special precautions other than those usually adopted in patients receiving glucocorticoid therapy are necessary. The common adverse effects of systemic corticosteroids may be associated with more serious consequences in old age.

**Children:** There has been limited exposure of children to deflazacort in clinical trials. In children, the indications for glucocorticoids are the same as for adults, but it is important that the lowest effective dosage is used. Alternate day administration may be appropriate. Doses of deflazacort usually lie in the range 0.25-1.5 mg/kg/day.

The following ranges provide general guidance:

*Juvenile chronic arthritis:* The usual maintenance dose is between 0.25-1.0 mg/kg/day.

*Bronchial asthma:* On the basis of the potency ratio, the initial dose should be between 0.25-1.0 mg/kg deflazacort on alternate days.

**Deflazacort withdrawal** : In patients who have received more than physiological doses of systemic corticosteroids (approximately 9 mg per day or equivalent) for greater than 3 weeks, withdrawal should not be abrupt. How dose reduction should be carried out depends largely on whether the disease is likely to relapse as the dose of systemic corticosteroids is reduced. Clinical assessment of disease activity may be needed during withdrawal. If the disease is unlikely to relapse on withdrawal of systemic corticosteroids but there is uncertainty about HPA suppression, the dose of systemic corticosteroids may be reduced rapidly to physiological doses. Once a daily dose equivalent to 9 mg deflazacort is reached, dose reduction should be slower to allow the HPA-axis to recover. Abrupt withdrawal of systemic corticosteroid treatment, which has continued up to 3 weeks, is appropriate if it is considered that the disease is unlikely to relapse. Abrupt withdrawal of doses up to 48 mg daily of deflazacort, or equivalent for 3 weeks is unlikely to lead to clinically relevant HPA-axis suppression, in the majority of patients. In the following patient groups, gradual withdrawal of systemic corticosteroid therapy should be considered even after courses lasting 3 weeks or less:

- Patients who have had repeated courses of systemic corticosteroids, particularly if taken for greater than 3 weeks.
- When a short course has been prescribed within one year of cessation of long term therapy (months or years).
- Patients who may have reasons for adrenocortical insufficiency other than exogenous corticosteroid therapy.
- Patients receiving doses of systemic corticosteroid greater than 48 mg daily of deflazacort (or equivalent).
- Patients repeatedly taking doses in the evening.

### CONTRAINDICATIONS:

Hypersensitivity to deflazacort or any of the ingredients, systemic infection unless specific anti-infective Therapy is employed, patients receiving live virus immunisation.

### WARNINGS AND PRECAUTIONS:

**Drug Interactions:** The same precautions should be exercised as for other glucocorticoids. Deflazacort is metabolised in the liver. It is recommended to increase the maintenance dose of deflazacort if drugs, which are liver enzyme inducers, are co-administered. e.g. rifampicin, rifabutin, carbamazepine, phenobarbitone, phenytoin, primidone and aminoglutethimide. For drugs, which inhibit liver enzymes, e.g. ketoconazole it may be possible to reduce the maintenance dose of deflazacort. In patients taking estrogens, corticosteroid requirements may be reduced. The desired effects of hypoglycaemic agents (including insulin), antihypertensives and diuretics are antagonised by corticosteroids and the hypokalaemic effects of acetazolamide, loop diuretics, thiazide diuretics and carbenoxolone are enhanced. The efficacy of coumarin anticoagulants may be enhanced by concurrent corticosteroid therapy and close monitoring of the INR or prothrombin time is required to avoid spontaneous bleeding. In patients treated with systemic corticosteroids, use of non-depolarising muscle relaxants can result in prolonged relaxation and acute myopathy. Risk factors for this include prolonged and high dose corticosteroid treatment, and prolonged duration of muscle paralysis. This interaction is more likely following prolonged ventilation (such as in the ITU setting). The renal clearance of salicylates is increased by corticosteroids and steroid withdrawal may result in salicylate intoxication. As glucocorticoids can suppress the normal responses of the body to attack by microorganisms, it is important to ensure that any anti-infective therapy is effective and it is recommended to monitor patients closely. Concurrent use of glucocorticoids and oral contraceptives should be closely monitored as plasma levels of glucocorticoids may be increased. This effect may be due to a change in metabolism or binding to serum proteins. Antacids may reduce bio availability; leave at least 2 hours between administration of deflazacort and antacids.

Patients with rare hereditary problems of galactose intolerance, the Lapp lactose deficiency or glucose galactose malabsorption should not take this medicine. Undesirable effects may be minimised by using the lowest effective dose for the minimum period, and by administering the daily requirement as a single morning dose or when ever possible as a single morning dose on alternate days. Frequent patient review is required to appropriately titrate the dose against disease activity (see Dosage & Administration section).

Adrenal suppression: Adrenal cortical atrophy develops during prolonged therapy and may persist for years after

stopping treatment. Withdrawal of corticosteroids after prolonged therapy must therefore always be gradual to avoid acute adrenal insufficiency, being tapered off over weeks or months according to the dose and duration of treatment. During prolonged therapy, any intercurrent illness, trauma or surgical procedure will require a temporary increase in dosage; if corticosteroids have been stopped following prolonged therapy, they may need to be temporarily re-introduced.

Anti-inflammatory/immunosuppressive effects and infection: Suppression of the inflammatory response and immune function increases the susceptibility to infections and their severity. The clinical presentation may often be atypical and serious infections such as septicaemia and tuberculosis may be masked and may reach an advanced stage before being recognised.

Chickenpox is of particular concern since this normally minor illness may be fatal in immuno suppressed patients. Patients (or parents of children) without a definite history of chicken pox should be advised to avoid close personal contact with chickenpox or herpes zoster and, if exposed, they 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 3 months; this should be given within 10 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.

Patients should be advised to take particular care to avoid exposure to measles and to seek immediate medical advice if exposure occurs. Prophylaxis with intramuscular normal immunoglobulin may be needed. Live vaccines should not be given to individuals with impaired responsiveness. The antibody response to other vaccines may be diminished.

Prolonged use of glucocorticoids may produce posterior sub capsular cataracts, glaucoma with possible damage to the optic nerves and may enhance the establishment of secondary ocular infections due to fungi or viruses. Use in active tuberculosis should be restricted to those cases of fulminating and disseminated tuberculosis in which deflazacort is used for management with appropriate antituberculosis regimen. If glucocorticoids are indicated in patients with latent tuberculosis or tuberculin reactivity, close observation is necessary as reactivation of the disease may occur. During prolonged glucocorticoid therapy, these patients should receive chemoprophylaxis.

**Special precautions** : The following clinical conditions require special caution and frequent patient monitoring is necessary:

- Cardiac disease or congestive heart failure (except in the presence of active rheumatic carditis), hypertension, thromboembolic disorders. Glucocorticoids can cause salt and water retention and increased excretion of potassium. Dietary salt restriction and potassium supplementation may be necessary.
- Gastritis or oesophagitis, diverticulitis, ulcerative colitis if there is probability of impending perforation, abscess or pyogenic infections, fresh intestinal anastomosis. active or latent peptic ulcer.
- Diabetes mellitus or a family history, osteoporosis, myasthenia gravis, renal insufficiency.
- Emotional instability or psychotic tendency, epilepsy.
- Previous corticosteroid-induced myopathy.
- Liver failure.
- Hypothyroidism and cirrhosis, which may increase glucocorticoid effect.
- Ocular herpes simplex because of possible corneal perforation.

**Use in Children:** Corticosteroids cause dose-related growth retardation in infancy, childhood and adolescence, which may be irreversible.

**Use in Elderly:** The common adverse effects of systemic corticosteroids may be associated with more serious consequences in old age, especially osteoporosis, hypertension, hypokalaemia, diabetes, susceptibility to infection and thinning of the skin. Close clinical supervision is required to avoid life threatening reactions. Since complications of glucocorticoid therapy are dependent on dose and duration of therapy, the lowest possible dose must be given and a risk/benefit decision must be made as to whether intermittent therapy should be used.

**Pregnancy:** The ability of corticosteroids to cross the placenta varies between individual drugs, however, deflazacort does cross the placenta. Administration of corticosteroids to pregnant animals can cause abnormalities of foetal development including cleft palate, intra-uterine growth retardation and effects on brain growth and development. There is no evidence that corticosteroids result in an increased incidence of congenital abnormalities, such as cleft palate/lip in man. However, when administered for prolonged periods or repeatedly during pregnancy, corticosteroids may

increase the risk of intra-uterine growth retardation. Hypoadrenalism may, in theory, occur in the neonate following prenatal exposure to corticosteroids but usually resolves spontaneously following birth and is rarely clinically important. As with all drugs, corticosteroids should only be prescribed when the benefits to the mother and child outweigh the risks. When corticosteroids are essential however, patients with normal pregnancies may be treated as though they were in the non-gravid state.

**Lactation:** Corticosteroids are excreted in breast milk, although no data are available for deflazacort.

Doses of up to 50 mg daily of deflazacort are unlikely to cause systemic effects in the infant. Infants of mothers taking higher doses than this may have a degree of adrenal suppression but the benefits of breast-feeding are likely to outweigh any theoretical risk.

### SIDE EFFECTS:

The incidence of predictable undesirable effects, including hypothalamic-pituitary-adrenal suppression correlates with the relative potency of the drug, dosage, timing of administration and the duration of treatment.

**Endocrine/metabolic:** Suppression of the hypothalamic-pituitary-adrenal axis, growth suppression in infancy, childhood and adolescence, menstrual irregularity and amenorrhoea. Cushingoid facies, hirsutism, weight gain, impaired carbohydrate tolerance with increased requirement for anti-diabetic therapy.Negative protein and calcium balance, increased appetite.

**Anti-inflammatory and immunosuppressive effects:** Increased susceptibility and severity of infections with suppression of clinical symptoms and signs, opportunistic infections, recurrence of dormant tuberculosis.

**Musculoskeletal:** Osteoporosis, vertebral and long bone fractures, avascular osteonecrosis, tendon rupture. Muscle wasting or myopathy, negative nitrogen balance.

**Fluid and electrolyte disturbance:** Sodium and water retention with hypertension, oedema and heart failure, potassium loss, hypokalaemic alkalosis.

**Neuropsychiatric:** Headache, vertigo, euphoria, psychological dependence, hypomania or depression, insomnia, restlessness and aggravation of schizophrenia. Increased intra-cranial pressure with papilloedema in children (pseudotumour cerebri), usually after treatment withdrawal. Aggravation of epilepsy.

A wide range of psychiatric reactions including affective disorders (such as irritable, euphoric, depressed and labile mood, and suicidal thoughts), psychotic reactions (including mania, delusions, hallucinations, and aggravation of schizophrenia), behavioural disturbances, irritability, anxiety, sleep disturbances, and cognitive dysfunction including confusion and amnesia have been reported. Reactions are common and may occur in both adults and children. Psychological effects have been reported on withdrawal of corticosteroids; the frequency is unknown. **Ophthalmic:** Increased intra-ocular pressure, glaucoma, papilloedema, posterior subcapsular cataracts especially in children, corneal or scleral thinning, and exacerbation of ophthalmic viral or fungal diseases.

**Gastrointestinal:** Dyspepsia, peptic ulceration with perforation and haemorrhage, acute pancreatitis (especially in children), candidiasis, nausea.

**Dermatological:** Impaired healing, skin atrophy, bruising, telangiectasia, striae, acne.

**General:** Hypersensitivity including anaphylaxis has been reported. Leucocytosis. Thromboembolism.

Rare incidence of benign intracranial hypertension.

**Withdrawal symptoms and signs:** Too rapid a reduction of corticosteroid dosage following prolonged treatment can lead to acute adrenal insufficiency, hypotension and death. A 'withdrawal syndrome' may also occur including fever, myalgia, arthralgia, rhinitis, conjunctivitis, painful itchy skin nodules and loss of weight. This may occur in patients even without evidence of adrenal insufficiency.

### OVERDOSAGE:

It is unlikely that treatment is needed in cases of acute overdosage. The LD<sub>50</sub> for the oral dose is greater than 4000 mg/kg in laboratory animals.

### EXPIRY DATE:

Do not use after the date of expiry.

### STORAGE:

Store in a cool & dry place

Keep all medicines out of reach of children

### PRESENTATION

Deflazzen 6 & 30 are available in strip pack of 6 tablets.



Marketed by :  
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