Corticosteroids

Done by: Assistant lecturer

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CORTICOSTEROIDS

- The adrenal cortex normally secretes hydrocortisone **(cortisol)** which has glucocorticoid activity and weak mineralocorticoid activity.

Drug classification:

- Prednisolone
- Betamethasone
- Cortisone acetate
- Deflazacort
- Dexamethasone
- Hydrocortisone
- Methylprednisolone
- Triamcinolone

Clinical Use of corticosteroids

- Dosages of corticosteroids vary widely in different diseases and in different patients. If the use of a corticosteroid can save or prolong life, as in exfoliative dermatitis , pemphigus, acute leukaemia or acute transplant rejection, high doses may need to be given, because the complications of therapy are likely to be less serious than the effects of the disease itself.
- When long-term corticosteroid therapy is used in some chronic diseases, the adverse effects of treatment may become greater than the disabilities caused by the disease. To minimise side-effects the maintenance dose should be kept as low as possible.
- Corticosteroids are used topically for the treatment of inflammatory conditions of the skin , ulcerative colitis and Crohn's disease, haemorrhoids , best avoided in psoriasis .
- Fludrocortisone to treat postural hypotension in autonomic neuropathy,there is evidence that administration of lower doses for septic shock.

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- Betamethasone and dexamethasone are also appropriate for conditions where water retention would be a disadvantage.
- corticosteroid may be used in the management of raised intracranial pressure or cerebral oedema that occurs as a result of malignancy ; high doses of betamethasone or dexamethasone are generally used.
- In acute hypersensitivity reactions such as angioedema of the upper respiratory tract and anaphylactic shock, corticosteroids are indicated as an adjunct to emergency treatment with adrenaline (epinephrine).
- Corticosteroids are preferably used by inhalation in the management of asthma but systemic therapy in association with bronchodilators is required for the emergency treatment of severe acute asthma .
- Corticosteroids may also be useful in conditions such as autoimmune hepatitis, rheumatoid arthritis and sarcoidosis; they may also lead to remissions of acquired haemolytic anaemia , and some cases of the nephrotic syndrome (particularly in children) and thrombocytopenic purpura .
- Corticosteroids can improve the prognosis of serious conditions such as systemic lupus erythematosus, temporal arteritis, and polyarteritis nodosa.

Cautions and Contra-indications

- Abrupt withdrawal after a prolonged period can lead to acute adrenal insufficiency, hypotension or death. Withdrawal can also be associated with fever, myalgia, arthralgia, rhinitis, conjunctivitis, painful itchy skin nodules and weight loss.
- Prolonged courses of corticosteroids increase susceptibility to infections and severity of infections. Fungal or viral ocular infections may also be exacerbated .
- There is no convincing evidence that systemic corticosteroids increase the incidence of congenital abnormalities during pregnancy.
- Other cautions include: children and adolescents (growth restriction possibly irreversible), elderly (close supervision required particularly on long-term treatment); frequent monitoring required if history of tuberculosis (or X-ray changes), hypertension, recent myocardial infarction , congestive heart failure, hepatic impairment , renal impairment, diabetes mellitus including family history, osteoporosis , glaucoma (including family history), ocular herpes simplex—risk of corneal perforation, severe affective disorders (particularly if history of steroid-induced psychosis), epilepsy, peptic ulcer, hypothyroidism, history of steroid myopathy, ulcerative colitis, diverticulitis, recent intestinal anastomoses, thromboembolic disorders; myasthenia gravis; avoid live virus vaccines in those receiving immunosuppressive doses (serum antibody response diminished).

Side-effects of Corticosteroids

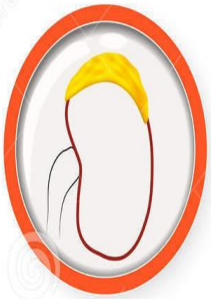
- Over dosage or prolonged use can exaggerate some of the normal physiological actions of corticosteroids leading to mineralocorticoid and glucocorticoid side-effects.

- Mineralocorticoid side-effects include hypertension, sodium and water retention, and potassium and calcium loss. They are most marked with fludrocortisone, but are significant with cortisone, hydrocortisone. Mineralocorticoid actions are negligible with the high potency glucocorticoids, betamethasone and dexamethasone, and occur only slightly with methylprednisolone, prednisolone, and triamcinolone.

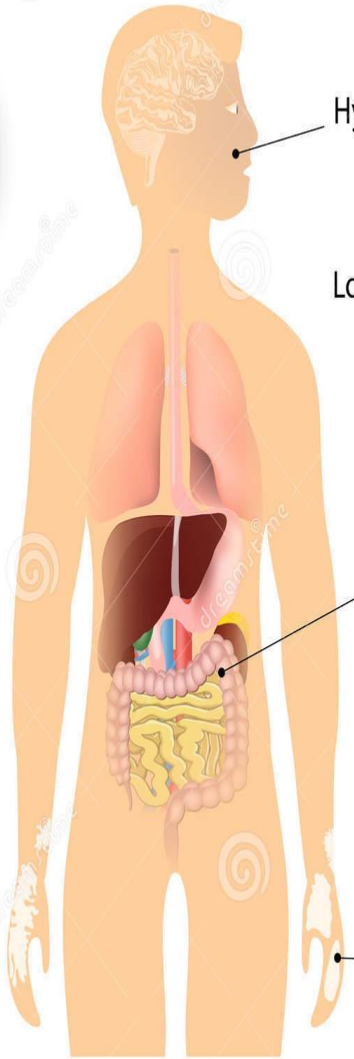
Side-effects of Corticosteroids

- Glucocorticoid side-effects include diabetes and osteoporosis , which is a danger, particularly in the elderly, as it can result in osteoporotic fractures for example of the hip or vertebrae; in addition high doses are associated with avascular necrosis of the femoral head. Muscle wasting (proximal myopathy) can also occur. Corticosteroid therapy is also linked with peptic ulceration and perforation. psychatric reaction may also occur
- High doses of corticosteroids can cause Cushing's syndrome, with moon face, striae, and acne; it is usually reversible on withdrawal of treatment, but this must always be gradually tapered to avoid symptoms of acute adrenal insufficiency .
- In children, administration of corticosteroids may result in suppression of growth.
- Side-effects can be minimized by using lowest effective dose for minimum period possible.

Addison's disease



Adrenal glands not produce sufficient steroid hormones



Skin
Hyperpigmentation

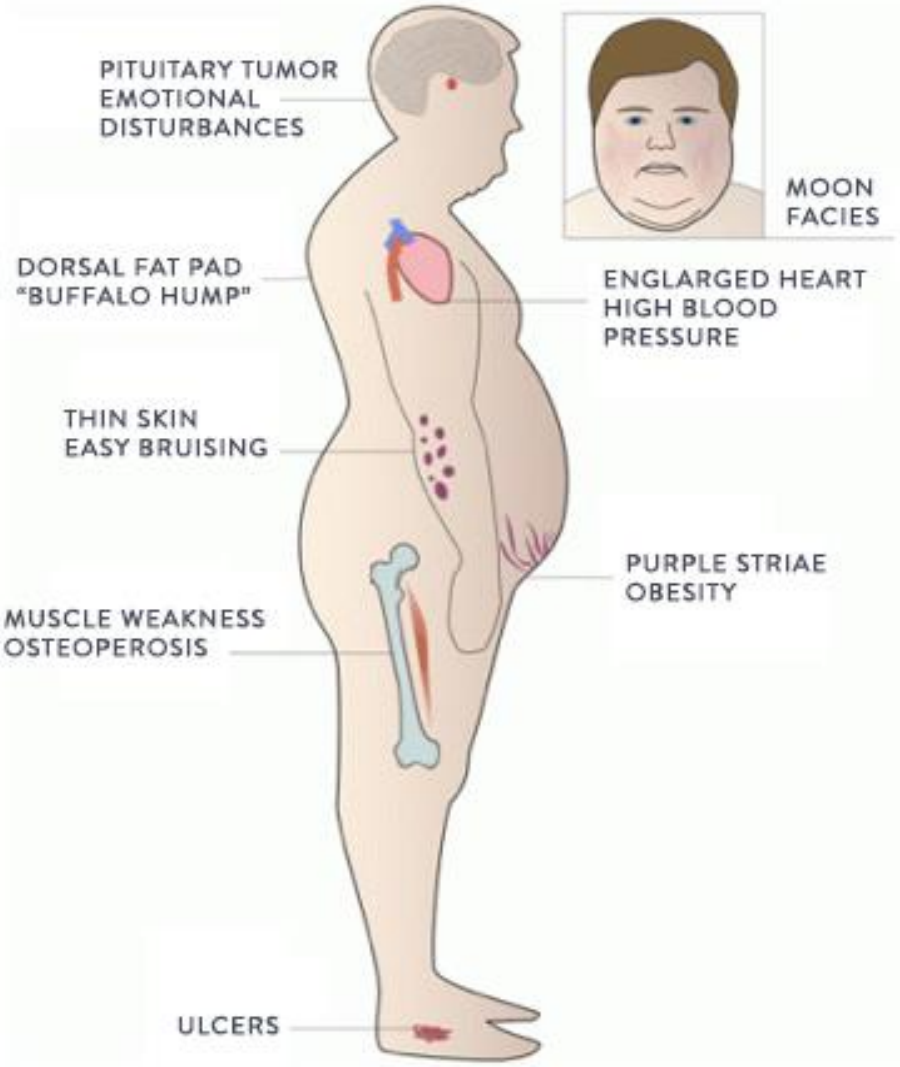
Low blood pressure
Weakness
Weight loss

Gastrointestinal
Nausea
Diarrhea
Vomiting
Constipation
Abdominal pain

Skin
Vitiligo

Adrenal crisis:
- fever;
- syncope;
- convulsions;
- hypoglycemia;
- hyponatremia;
- severe vomiting and diarrhea.

CUSHINGS SYNDROME



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1.Endocrine effects: menstrual irregularities and amenorrhoea, hirsutism, weight gain, negative nitrogen and calcium balance, increased appetite;

2.Increased susceptibility to and severity of infection, reactivation of dormant tuberculosis;

3.Neuropsychiatric effects: psychological dependence, insomnia, increased intracranial pressure with papilloedema in children (usually after withdrawal), aggravation of schizophrenia, aggravation of epilepsy;

4.Ophthalmic effects: glaucoma, papilloedema, posterior subcapsular cataracts, corneal or scleral thinning and exacerbation of ophthalmic viral or fungal disease, increased intra-ocular pressure, exophthalmos;

5.Impaired healing, petechiae, ecchymoses, facial erythema, suppression of skin test reactions, urticaria, hyperhidrosis, skin atrophy, bruising, telangiectasia, myocardial rupture following recent myocardial infarction, congestive heart failure, leucocytosis, hyperglycaemia, hypersensitivity reactions (including anaphylaxis), thromboembolism, nausea, malaise, hiccups, headache, vertigo.

Other side-effects include:

- Gastro-intestinal effects: dyspepsia, abdominal distension, acute pancreatitis, oesophageal ulceration and candidiasis.
- Musculoskeletal effects: muscle weakness, vertebral and long bone fractures, tendon rupture.

IMPORTANT SAFETY INFORMATION

- MHRA/CHM ADVICE: CORTICOSTEROIDS: RARE RISK OF CENTRAL SEROUS CHORIORETINOPATHY WITH LOCAL AS WELL AS SYSTEMIC ADMINISTRATION (AUGUST 2017): Central serous chorioretinopathy is a retinal disorderthat has been linked to the systemic use of corticosteroids. Recently, it has also been reported after local administration of corticosteroids via inhaled and intranasal, epidural, intra-articular, topical dermal, and periocular routes. The MHRA recommends that patients should be advised to report any blurred vision or other visual disturbances with corticosteroid treatment given by any route; consider referral to an ophthalmologist for evaluation of possible causes if a patient presents with vision problems.

Withdrawal of corticosteroids

1.Gradual withdrawal of systemic corticosteroids should be considered in those whose disease is unlikely to relapse and have:

- Recently received repeated courses (particularly if taken for longer than 3 weeks);
- Taken a short course within 1 year of stopping long-term therapy.
- Received more than 40 mg daily prednisolone (or equivalent); given repeat doses in the evening; received more than 3 weeks' treatment.

2.Systemic corticosteroids may be stopped abruptly in those whose disease is unlikely to relapse and who have received treatment for 3 weeks or less and who are not included in the patient groups described above. Assessment of the disease may be needed during withdrawal to ensure that relapse does not occur. Patients on long-term corticosteroid treatment should carry a Steroid Treatment Card which gives guidance on minimising risk and provides details of prescriber, drug, dosage and duration of treatment.

Corticosteroids

- PREGNANCY: The benefit of treatment with corticosteroids during pregnancy outweighs the risk.
- BREAST FEEDING: The benefit of treatment with corticosteroids during breast-feeding outweighs the risk.
- HEPATIC IMPAIRMENT: caution
- RENAL IMPAIRMENT: caution

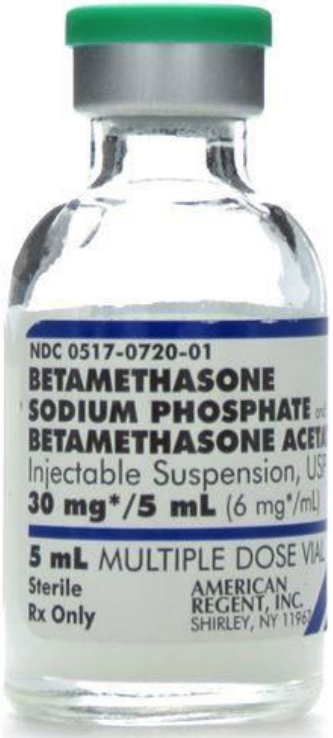
Betamethasone

- INDICATIONS AND DOSE
- Suppression of inflammatory and allergic disorders |Congenital adrenal hyperplasia
- ▶ BY MOUTH
- ▶ Adult: Usual dose 0.5–5 mg daily
- ▶ BY INTRAMUSCULAR INJECTION, OR BY SLOW INTRAVENOUS INJECTION, OR BY INTRAVENOUS INFUSION
- ▶ Adult: 4–20 mg, repeated up to 4 times in 24 hours

Betamethasone

- ***MEDICINAL FORMS***
- Soluble tablet: CAUTIONARY AND ADVISORY LABELS 10, 13, 21 (not for use as mouthwash for oral ulceration) Betamethasone (as Betamethasone sodium phosphate) 500 microgram.

- Solution for injection CAUTIONARY AND ADVISORY LABELS 10
- ▶ Betamethasone (as Betamethasone sodium phosphate) 4 mg per 1 ml solution for injection ampoules.



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Dexamethasone

- **INDICATIONS AND DOSE**
- **Suppression of inflammatory and allergic disorders:**
- ▸ BY MOUTH
- ▸ Adult: 0.5–10 mg daily

- **Mild croup**
- ▸ BY MOUTH
- ▸ Child: 150 micrograms/kg for 1 dose

- **Severe croup (or mild croup that might cause**
- **complications)**
- ▸ INITIALLY BY MOUTH
- ▸ Child: Initially 150 micrograms/kg for 1 dose, to be
- given before transfer to hospital, then (by mouth or by
- intravenous injection) 150 micrograms/kg, then (by
- mouth or by intravenous injection) 150 micrograms/kg
- after 12 hours if required

Dexamethasone

- Congenital adrenal hyperplasia (under expert supervision) ▶Consult specialist for advice on dosing.
- **Overnight dexamethasone suppression test**

▶ BY MOUTH:

▶ Adult: 1 mg for 1 dose, to be given at night

Dexamethasone

- Adjunctive treatment of bacterial meningitis (starting before or with first dose of antibacterial)
- BY INTRAVENOUS INJECTION
- Adult: 8.3 mg every 6 hours for 4 days

- **Symptom control of anorexia (in palliative care)**
- Adult: 2–4 mg daily

- **Obstruction due to tumour(dysphagia in palliative care)**
- Adult: 8 mg daily

Dexamethasone

- **Bronchospasm or partial obstruction (dyspnoea in palliative care)**
  - Adult: 4–8 mg daily

- **Nausea and vomiting (adjunct in palliative care)**
  - BY MOUTH
  - Adult: 8–16 mg daily

Dexamethasone

- **Headaches due to raised intracranial pressure (in palliative care)**

▶ Adult: 16 mg daily for 4–5 days, then reduced to 4–6 mg daily, reduce dose if possible. To be given before 6pm to reduce the risk of insomnia

- **Pain due to nerve compression (in palliative care**) ▶ Adult: 8 mg daily

Dexamethasone

- **Cerebral oedema associated with malignancy:**

▶ BY MOUTH

▶ Adult: 0.5–10 mg daily

- **Cerebral oedema:**

▶ INITIALLY BY INTRAVENOUS INJECTION

▶ Adult: Initially 8–16 mg for 1 dose, then (by intramuscular injection or by intravenous injection) 5 mg every 6 hours until adequate response achieved then taper-off gradually, use the 3.8 mg/mL injection preparation for this dose.

Dexamethasone

- **Cerebral oedema associated with malignancy**

▶ INITIALLY BY INTRAVENOUS INJECTION

▶ Adult: Initially 8.3 mg for 1 dose, then (by intramuscular injection) 3.3 mg every 6 hours as required for 2–4 days, subsequently, reduce dose gradually and stop over 5–7 days, use the 3.3 mg/mL injection preparation for this dose

Dexamethasone

- MEDICINAL FORMS:
- **Soluble tablet**

▶ Dexamethasone(as Dexamethasone sodium phosphate) 2,4,8 mg .

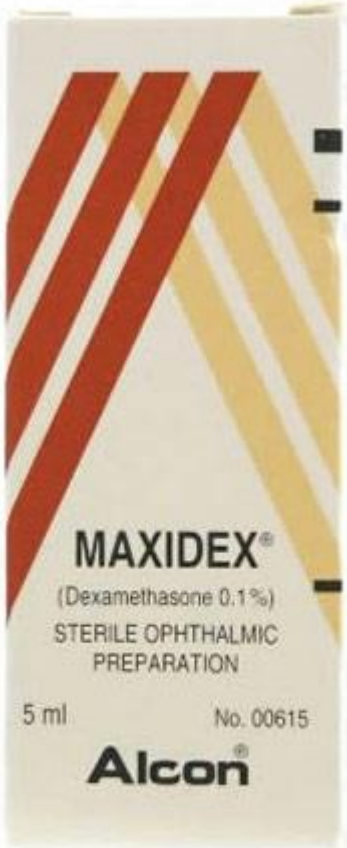
- **Tablet** CAUTIONARY AND ADVISORY LABELS 10, 21
- Dexamethasone 500 microgram, 2 ,4,40mg

Dexamethasone

- ***Solution for injection***
- CAUTIONARY AND ADVISORY LABELS 10
- Dexamethasone (as Dexamethasone sodium phosphate) 3.3 mg per 1 ml
- Dexamethasone (as Dexamethasone sodium phosphate) 3.8 mg per 1 ml
- ***Oral solution***
- CAUTIONARY AND ADVISORY LABELS 10, 21
- ▶Dexamethasone (as Dexamethasone sodium phosphate) 400 microgram per 1 ml

Dexamethasone

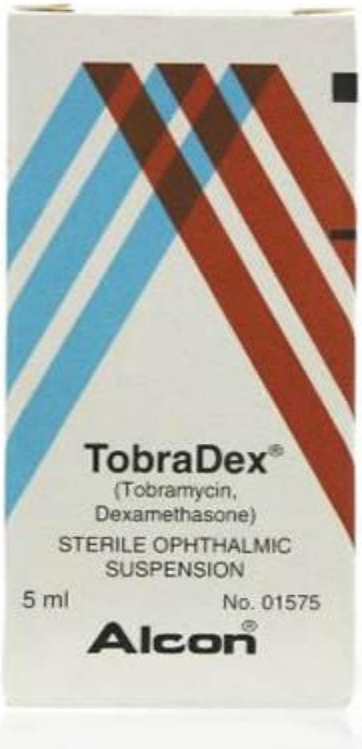
- Dexamethasone (as Dexamethasone sodium phosphate) 2 mg per 1 ml
- Dexamethasone (as Dexamethasone sodium phosphate) 4 mg per 1 ml


MAXIDEX®
(Dexamethasone 0.1%)
STERILE OPHTHALMIC
PREPARATION
5 ml
No. 00615
Alcon®


Dexamethasone
Injection 2 mg/mL
Dexamethasone Sterile Injection
Veterinary
FOR ANIMAL USE ONLY
Multiple Dose Vial
Net Contents: 100 mL
PHOENIX


NDC 0054-4179-25
DEXAMETHASON
Tablets, USP
0.5 mg
Each tablet contains
0.5 mg dexamethasone.
℞ only
Boehringer Ingelheim
Roxane Laboratories
NDC 0054-4184-25
100 Tablets
DEXAMETHASONE
Tablets, USP
4 mg
Each tablet contains
4 mg dexamethasone.
℞ only
Boehringer Ingelheim
Roxane Laboratories


Dexamethasone
Sodium Phosphate
USP 27
3 ampoules of 2 ml
Each ampoule contains :
Dexamethasone (as sodium phosphate) .... 8 mg.
محتوى


TobraDex®
(Tobramycin,
Dexamethasone)
STERILE OPHTHALMIC
SUSPENSION
5 ml
No. 01575
Alcon®


NDC 55150-239-30
Dexamethasone
Sodium Phosphate
Injection USP
120 mg per 30 mL
(4 mg/mL)*
For I.V., I.M., Intra-Articular,
Soft Tissue or Intralesional Use
30 mL
Multiple-Dose Vial
Rx only
AUROMEDICS
NDC 55150-238-05
Dexamethasone
Sodium Phosphate
Injection USP
20 mg per 5 mL
(4 mg/mL)*
For I.V. or I.M. Use#
5 mL Multiple-Dose Vial
Rx only
NDC 55150-237-01
Dexamethasone
Sodium Phosphate
Injection USP
4 mg per mL
For I.V. or I.M. Use
1 mL Single-Dose Vial
Rx only

Hydrocortisone

- INDICATIONS AND DOSE
- Thyrotoxic crisis (thyroid storm)
- ▶ BY INTRAVENOUS INJECTION
- ▶ Adult: 100 mg every 6 hours, to be administered as
- sodium succinate
- Adrenocortical insufficiency resulting from septic shock
- ▶ BY INTRAVENOUS INJECTION
- ▶ Adult: 50 mg every 6 hours, given in combination with
- fludrocortisone

Hydrocortisone

- Acute hypersensitivity reactions such as angioedema of
- the upper respiratory tract and anaphylaxis (adjunct to
- adrenaline)
- ▶ BY INTRAVENOUS INJECTION
- ▶ Adult: 100–300 mg, to be administered as sodium
- succinate
- Corticosteroid replacement, in patients who have taken
- more than 10 mg prednisolone daily (or equivalent)
- within 3 months of minor surgery under general
- anaesthesia
- ▶ BY INTRAVENOUS INJECTION, OR BY INTRAVENOUS INFUSION
- ▶ Adult: Initially 25–50 mg, to be administered at
- induction of surgery, the patient’s usual oral
- corticosteroid dose is recommenced after surgery

Hydrocortisone

- Corticosteroid replacement, in patients who have taken
- more than 10 mg prednisolone daily (or equivalent)
- within 3 months of moderate or major surgery
- ▶ INITIALLY BY INTRAVENOUS INJECTION, OR BY INTRAVENOUS
- INFUSION
- ▶ Adult: Initially 25–50 mg, to be administered at
- induction of surgery (following usual oral
- corticosteroid dose on the morning of surgery),
- followed by (by intravenous injection) 25–50 mg
- 3 times a day for 24 hours after moderate surgery and
- for 48–72 hours after major surgery

Hydrocortisone

- Adrenocortical insufficiency in Addison's disease or
- following adrenalectomy
- ▶ BY MOUTH USING IMMEDIATE-RELEASE MEDICINES
- ▶ Adult: 20–30 mg daily in 2 divided doses, the larger
- dose to be given in the morning and the smaller in the
- evening, mimicking the normal diurnal rhythm of
- cortisol secretion, the optimum daily dose is
- determined on the basis of clinical response
- Adrenocortical insufficiency
- ▶ BY INTRAMUSCULAR INJECTION, OR BY SLOW INTRAVENOUS
- INJECTION, OR BY INTRAVENOUS INFUSION
- ▶ Adult: 100–500 mg 3–4 times a day or when required

Hydrocortisone

- Replacement in adrenocortical insufficiency
- ▶ BY MOUTH USING MODIFIED-RELEASE MEDICINES
- ▶ Adult: 20–30 mg once daily, adjusted according to
- response, dose to be taken in the morning
- ▶ BY MOUTH USING IMMEDIATE-RELEASE MEDICINES
- ▶ Adult: 20–30 mg daily in divided doses, adjusted
- according to response
- Ulcerative colitis | Proctitis | Proctosigmoiditis
- ▶ BY RECTUM USING RECTAL FOAM
- ▶ Adult: Initially 1 metered application 1–2 times a day
- for 2–3 weeks, then reduced to 1 metered application
- once daily on alternate days, to be inserted into the
- rectum

Hydrocortisone

- Acute hypersensitivity reactions | Angioedema
- ▶ BY INTRAMUSCULAR INJECTION, OR BY INTRAVENOUS
- INJECTION
- ▶ Child 1–5 months: Initially 25 mg 3 times a day, adjusted
- according to response
- ▶ Child 6 months–5 years: Initially 50 mg 3 times a day,
- adjusted according to response
- ▶ Child 6–11 years: Initially 100 mg 3 times a day, adjusted
- according to response
- ▶ Child 12–17 years: Initially 200 mg 3 times a day,
- adjusted according to response

Hydrocortisone

- Severe acute asthma | Life-threatening acute asthma
- ▶ BY INTRAVENOUS INJECTION
- ▶ Child 1 month–1 year: 4 mg/kg every 6 hours (max. per
- dose 100 mg), alternatively 25 mg every 6 hours until
- conversion to oral prednisolone is possible, dose given,
- preferably, as sodium succinate
- ▶ Child 2–4 years: 4 mg/kg every 6 hours (max. per dose
- 100 mg), alternatively 50 mg every 6 hours until
- conversion to oral prednisolone is possible, dose given,
- preferably, as sodium succinate

Hydrocortisone

- ▶ Child 5–11 years: 4 mg/kg every 6 hours (max. per dose
- 100 mg), alternatively 100 mg every 6 hours until
- conversion to oral prednisolone is possible, dose given,
- preferably, as sodium succinate
- ▶ Child 12–17 years: 4 mg/kg every 6 hours (max. per dose
- 100 mg), alternatively 100 mg every 6 hours until
- conversion to oral prednisolone is possible, dose given,
- preferably, as sodium succinate
- ▶ Adult: 100 mg every 6 hours until conversion to oral
- prednisolone is possible, dose given, preferably, as
- sodium succinate

Hydrocortisone

- DOSE EQUIVALENCE AND CONVERSION
- ▶ With oral use
- ▶ When switching from immediate-release
- hydrocortisone tablets to modified release Plenadren ®
- use same total daily dose. Bioavailability of Plenadren ®
- lower than immediate release tablets—monitor clinical
- response.

Hydrocortisone

- DIRECTIONS FOR ADMINISTRATION
- ▶ With intravenous use in children For intravenous
- administration, dilute with Glucose 5% or Sodium Chloride
- 0.9%. For intermittent infusion give over 20–30 minutes.
- ▶ With intravenous use in adults For intravenous infusion
- (SoluCortef ® or Efcortesol ®), give continuously or
- intermittently or via drip tubing in Glucose 5% or Sodium
- chloride 0.9%.

Hydrocortisone

- MEDICINAL FORMS:
- ***Modified-release tablet***
- CAUTIONARY AND ADVISORY LABELS 10, 22, 25
- Hydrocortisone 5mg modified-release tablet
- Hydrocortisone 20 mg modified-release tablet

Hydrocortisone

- ***Tablet:***
- CAUTIONARY AND ADVISORY LABELS 10, 21
- Hydrocortisone 10 mg tablets
- Hydrocortisone 20 mg tablets
- ***Powder for solution for injection:***
- Hydrocortisone (as Hydrocortisone sodium succinate) 100 mg powder for solution for injection

Hydrocortisone

- ***Suspension for injection:***
- Hydrocortisone acetate 25 mg per 1 ml suspension for injection ampoules

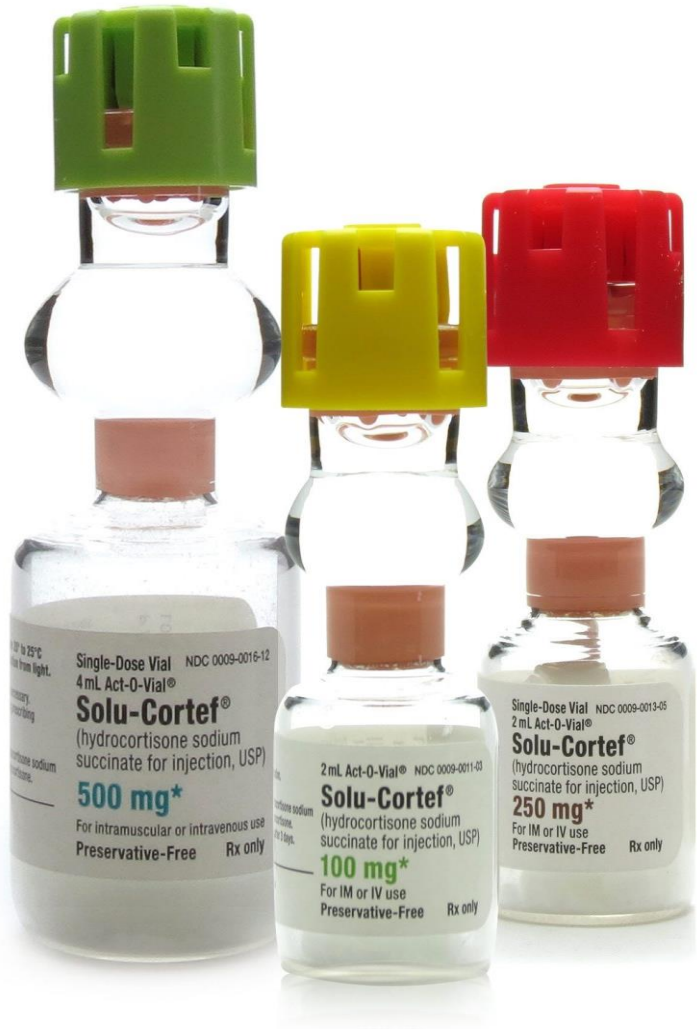
- ***Powder and solvent for solution for injection:***
- CAUTIONARY AND ADVISORY LABELS 10
- Hydrocortisone (as Hydrocortisone sodium succinate)
- 100 mg powder and solvent for solution for injection vials

Hydrocortisone

- ***Solution for injection:***
- CAUTIONARY AND ADVISORY LABELS 10
- Hydrocortisone (as Hydrocortisone sodium phosphate) 100 mg per 1 ml solution for injection ampoules

- ***Foam:***
- EXCIPIENTS: May contain Cetostearyl alcohol (including cetyl and stearyl alcohol), hydroxybenzoates (parabens), propylene glycol
- ▶ Colifoam (Meda Pharmaceuticals Ltd)
- Hydrocortisone acetate 100 mg per 1 gram


actavis
Hydrocortisone
Cream USP 2.5%
NDC 0472-0337-30
actavis
Hydrocortisone
Cream USP 2.5%
℞ Only
For External Use Only
Not for Ophthalmic Use
30g (1.1oz)
cream


Single-Dose Vial NDC 0009-0016-12
4 mL Act-O-Vial®
Solu-Cortef®
(hydrocortisone sodium
succinate for injection, USP)
500 mg*
For intramuscular or intravenous use
Preservative-Free Rx only
2 mL Act-O-Vial® NDC 0009-0011-03
Solu-Cortef®
(hydrocortisone sodium
succinate for injection, USP)
100 mg*
For IM or IV use
Preservative-Free Rx only
Single-Dose Vial NDC 0009-0013-05
2 mL Act-O-Vial®
Solu-Cortef®
(hydrocortisone sodium
succinate for injection, USP)
250 mg*
For IM or IV use
Preservative-Free Rx only


Hydrocortisone 10 mg
Tablets
30 Tablets
Hydrocortisone 20 mg
Tablets
30 Tablets

Methylprednisolone

- **INDICATIONS AND DOSE**
- Suppression of inflammatory and allergic disorders /Cerebral oedema associated with malignancy
- ▶ BY MOUTH
- ▶ Adult: Initially 2–40 mg daily
- ▶ BY INTRAMUSCULAR INJECTION, OR BY SLOW INTRAVENOUS
- INJECTION, OR BY INTRAVENOUS INFUSION
- ▶ Adult: Initially 10–500 mg

Methylprednisolone

- **Treatment of graft rejection reactions**
- ▶ BY INTRAVENOUS INFUSION
- ▶ Adult: Up to 1 g daily for up to 3 days

- **Treatment of relapse in multiple sclerosis**
- ▶ BY MOUTH
- ▶ Adult: 500 mg once daily for 5 days
- **Treatment of relapse in multiple sclerosis (when oral**
- **steroids have failed or have not been tolerated, or in**
- **those who require hospital admission)**
- ▶ BY INTRAVENOUS INFUSION
- ▶ Adult: 1 g once daily for 3–5 days

Methylprednisolone

- DEPO-MEDRONE ®
- Suppression of inflammatory and allergic disorders
- ▶ BY DEEP INTRAMUSCULAR INJECTION
- ▶ Adult: 40–120 mg, then 40–120 mg after 2–3 weeks if
- required, to be injected into the gluteal muscle

Methylprednisolone

- **IMPORTANT SAFETY INFORMATION**
- MHRA/CHM ADVICE: METHYLPREDNISOLONE INJECTABLE
- MEDICINE CONTAINING LACTOSE (SOLU-MEDRONE ® 40 MG): DO
- NOT USE IN PATIENTS WITH COWS' MILK ALLERGY (OCTOBER
- 2017)
- ▸ With intramuscular use or intravenous use
- An EU-wide review has concluded that Solu-Medrone ®
- 40mg may contain trace amounts of milk proteins and
- should not be used in patients with a known or
- suspected allergy to cows' milk. Serious allergic
- reactions, including bronchospasm and anaphylaxis,
- have been reported in patients allergic to cows' milk
- proteins. If a patient's symptoms worsen or new allergic
- symptoms occur, administration should be stopped and
- the patient treated accordingly.

Methylprednisolone

- ***CAUTIONS:*** Rapid intravenous administration of large
- doses associated with cardiovascular collapse.

- ***DIRECTIONS FOR ADMINISTRATION:*** For intravenous infusion
- (as sodium succinate) (Solu-Medrone ®), give continuously
- or intermittently or via drip tubing in Glucose 5% or
- Sodium chloride 0.9%. Reconstitute initially with water for
- injections; doses up to 250mg should be given over at least
- 5 minutes, high doses over at least 30 minutes.

- ***PATIENT AND CARER ADVICE :*** Patient counselling is advised
- for methylprednisolone tablets and injections (steroid
- card).

Methylprednisolone

- MEDICINAL FORMS:
- **Powder and solvent for solution for injection**
- CAUTIONARY AND ADVISORY LABELS 10
- ▶ Methylprednisolone 500 mg Methylprednisolone sodium succinate 500mg powder and solvent for solution for injection vials

- Methylprednisolone 1 gram Methylprednisolone sodium succinate powder and solvent for solution for injection vials

- Methylprednisolone (as Methylprednisolone sodium succinate) 40mg powder and solvent for solution for injection vials

Methylprednisolone

- Methylprednisolone (as Methylprednisolone sodium succinate)
- **125 mg** powder and solvent for solution for injection vials

- Methylprednisolone (as Methylprednisolone sodium succinate)
- 500 mg powder and solvent for solution for injection vials

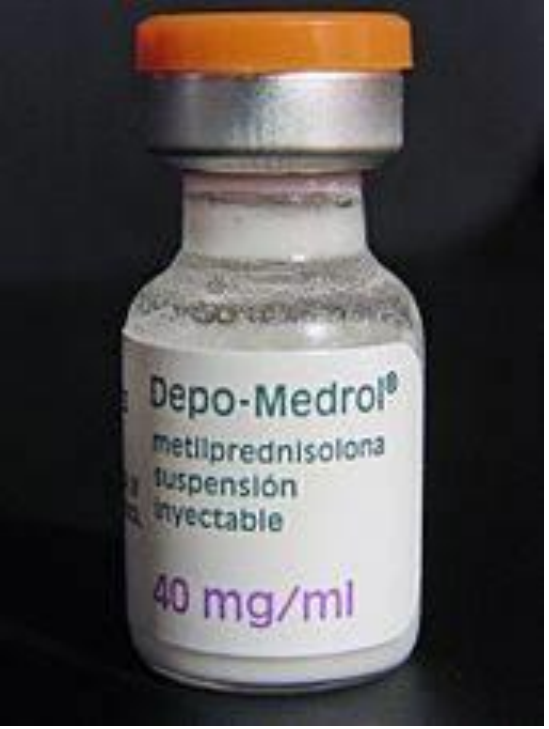
- Methylprednisolone (as Methylprednisolone sodium succinate)
- 1 gram powder and solvent for solution for injection vials

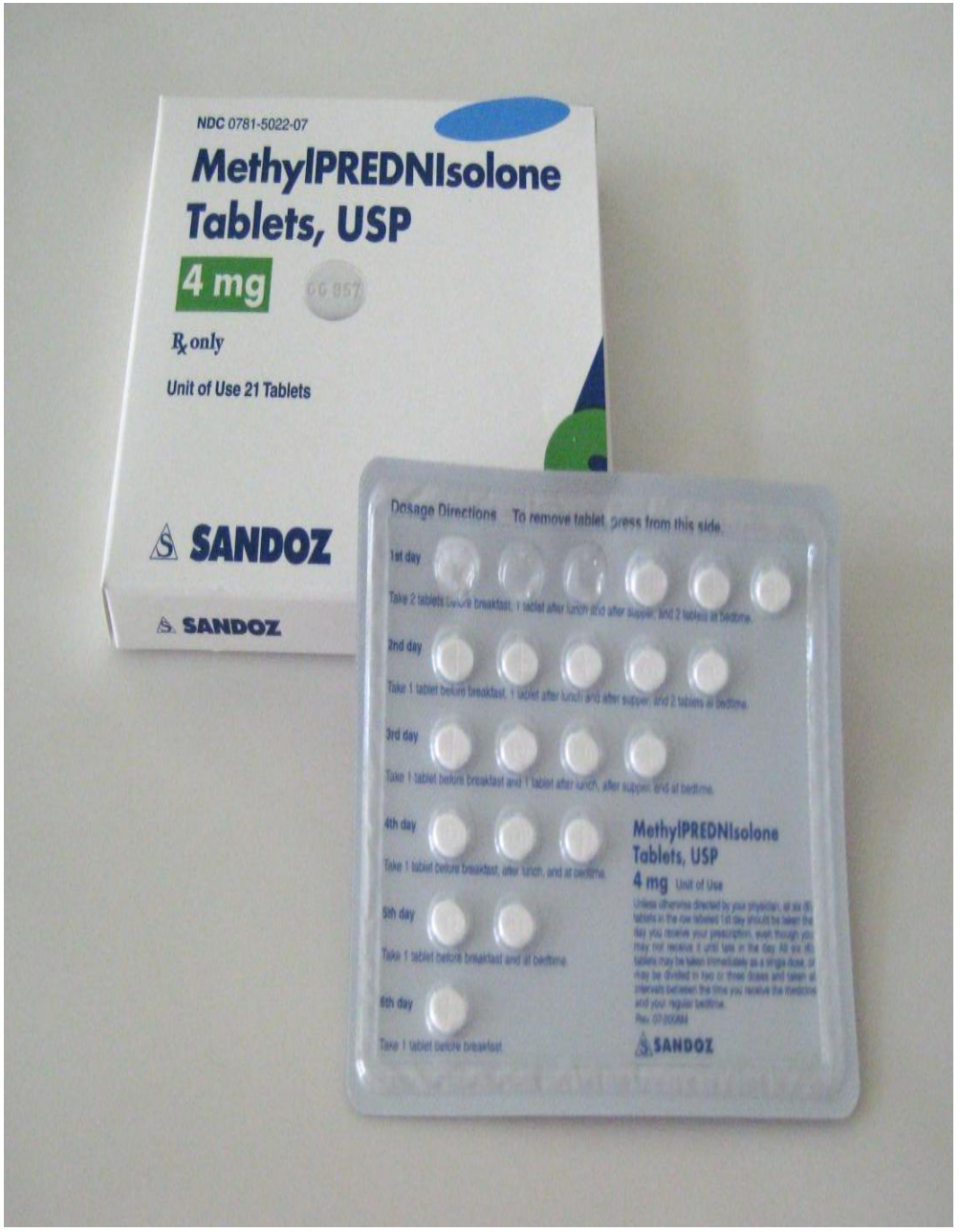
- Methylprednisolone (as Methylprednisolone sodium succinate)
- 2 gram powder and solvent for solution for injection vials

Methylprednisolone

- **Tablet**
- CAUTIONARY AND ADVISORY LABELS 10, 21
- ▶ Medrone (Pfizer Ltd)
- Methylprednisolone 2 mg Medrone 2mg tablets
- Methylprednisolone 4 mg Medrone 4mg tablets
- Methylprednisolone 16 mg Medrone 16mg tablets
- Methylprednisolone 100 mg Medrone 100mg tablets

- **Suspension for injection**
- CAUTIONARY AND ADVISORY LABELS 10
- ▶ Depo-Medrone (Pfizer Ltd)
- Methylprednisolone acetate 40 mg per 1 ml Depo-Medrone 40mg/1ml suspension for injection vials


Depo-Medrol®
metilprednisolona
suspensión
inyectable
40 mg/ml


NDC 0781-5022-07
MethylPREDNIsolone
Tablets, USP
4 mg
Rx only
Unit of Use 21 Tablets
SANDOZ
SANDOZ
Dosage Directions To remove tablet, press from this side.
1st day
2nd day
3rd day
4th day
5th day
6th day
MethylPREDNIsolone
Tablets, USP
4 mg Unit of Use
SANDOZ


5 mL
Multidose Vial
NDC 0009-0306-02
Depo-Medrol®
(methylprednisolone
acetate injectable
suspension, USP)
80 mg/mL
For intramuscular,
intrasynovial and
soft tissue injection only
NOT for IV use
Contains Benzyl Alcohol
as a Preservative
Rx only
Pfizer Injectables
Depo-Medrol®
(methylprednisolone acetate
injectable suspension, USP)
80 mg/mL

Prednisolone

- INDICATIONS AND DOSE
- **Acute exacerbation of chronic obstructive pulmonary disease (if increased breathlessness interferes with daily activities)**
- ▶ BY MOUTH
- ▶ Adult: 30 mg daily for 7–14 days

- **Severe croup (before transfer to hospital) | Mild croup that might cause complications (before transfer to hospital**)
- ▶ BY MOUTH
- ▶ Child: 1–2 mg/kg

Prednisolone

- **Mild to moderate acute asthma (when oral corticosteroid taken for more than a few days) | Severe or life threatening acute asthma (when oral corticosteroid taken for more than a few days)**
- ▶ BY MOUTH
- ▶ Child 1 month–11 years: 2 mg/kg once daily (max. per
- dose 60 mg) for up to 3 days, longer if necessary

- **Mild to moderate acute asthma | Severe or life-threatening**
- **acute asthma**
- ▶ BY MOUTH
- ▶ Child 1 month–11 years: 1–2 mg/kg once daily (max. per
- dose 40 mg) for up to 3 days, longer if necessary
- ▶ Child 12–17 years: 40–50 mg daily for at least 5 days
- ▶ Adult: 40–50 mg daily for at least 5 days

Prednisolone

- **Suppression of inflammatory and allergic disorders**
- ▶ BY MOUTH
- ▶ Adult: Initially 10–20 mg daily, dose preferably taken
- in the morning after breakfast, can often be reduced
- within a few days but may need to be continued for
- several weeks or months; maintenance 2.5–15 mg
- daily, higher doses may be needed; cushingoid side effects
- increasingly likely with doses above 7.5mg daily
- ▶ BY INTRAMUSCULAR INJECTION
- ▶ Adult: 25–100 mg 1–2 times a week, as prednisolone
- acetate

Prednisolone

- **Suppression of inflammatory and allergic disorders**
- **(initial dose in severe disease)**
- ▶ BY MOUTH
- ▶ Adult: Initially up to 60 mg daily, dose preferably taken in the morning after breakfast, can often be reduced within a few days but may need to be continued for several weeks or months

- **Idiopathic thrombocytopenic purpura**
- ▶ BY MOUTH
- ▶ Adult: 1 mg/kg daily, gradually reduce dose over several weeks.

Prednisolone

- **Ulcerative colitis | Crohn's disease**
- ▶ BY MOUTH
- ▶ Adult: Initially 20–40 mg daily until remission occurs, followed by reducing doses, up to 60 mg daily, may be used in some cases, doses preferably taken in the morning after breakfast
- **Neuritic pain or weakness heralding rapid onset of permanent nerve damage (during reversal reactions multibacillary leprosy)**
- ▶ BY MOUTH
- ▶ Adult: Initially 40–60 mg daily, dose to be instituted at once

Prednisolone

- **Generalised myasthenia gravis (when given on alternate days)**
- ▶ BY MOUTH
- ▶ Adult: Initially 10 mg once daily on alternate days, then increased in steps of 10 mg once daily on alternate days, increased to 1–1.5 mg/kg once daily on alternate days (max. per dose 100 mg).

- **Generalised myasthenia gravis in ventilated patients (when given on alternate days)**
- ▶ BY MOUTH
- ▶ Adult: Initially 1.5 mg/kg once daily on alternate days
- (max. per dose 100 mg)

Prednisolone

- **Generalised myasthenia gravis (when giving daily)**
- ▶ BY MOUTH
- ▶ Adult: Initially 5 mg daily, increased in steps of 5 mg daily. maintenance 60–80 mg daily, alternatively maintenance 0.75–1 mg/kg daily, ventilated patients may be started on 1.5 mg/kg (max. 100 mg) on alternate days

- **Ocular myasthenia**
- ▶ BY MOUTH
- ▶ Adult: Usual dose 10–40 mg once daily on alternate days, reduce to minimum effective dose

Prednisolone

- **Reduction in rate of joint destruction in moderate to severe rheumatoid arthritis of less than 2 years' duration**
- ▶ BY MOUTH
- ▶ Adult: 7.5 mg daily

- **Polymyalgia rheumatica**
- ▶ BY MOUTH
- ▶ Adult: 10–15 mg daily until remission of disease activity; maintenance 7.5–10 mg daily, reduce gradually to maintenance dose. Many patients require treatment for at least 2 years and in some patients it may be necessary to continue long term low-dose corticosteroid treatment.

Prednisolone

- **Giant cell (temporal) arteritis**
- ▶ BY MOUTH
- ▶ Adult: 40–60 mg daily until remission of disease activity, the higher dose being used if visual symptoms occur; maintenance 7.5–10 mg daily, reduce gradually to maintenance dose. Many patients require treatment for at least 2 years and in some patients it may be necessary to continue long term low-dose corticosteroid treatment

Prednisolone

- **Polyarteritis nodosa | Polymyositis | Systemic lupus erythematosus**
- ▶ BY MOUTH
- ▶ Adult: Initially 60 mg daily, to be reduced gradually; maintenance 10–15 mg daily

- **Anorexia (symptom control in palliative care)**
- ▶ BY MOUTH
- ▶ Adult: 15–30 mg daily

Prednisolone

- **Pneumocystis pneumonia in moderate to severe infections associated with HIV infection**
- ▶ BY MOUTH
- ▶ Adult: 50–80 mg daily for 5 days, the dose is then reduced to complete 21 days of treatment, corticosteroid treatment should ideally be started at the same time as the anti-pneumocystis therapy and certainly no later than 24–72 hours afterwards.The corticosteroid should be withdrawn before antipneumocystis treatment is complete

Prednisolone

- **Short-term prophylaxis of episodic cluster headache as monotherapy or in combination with verapamil during verapamil titration**
- ▶ BY MOUTH
- ▶ Adult: 60–100 mg once daily for 2–5 days, then reduced in steps of 10 mg every 2–3 days until prednisolone is discontinued

- **Proctitis**
- ▶ BY RECTUM USING RECTAL FOAM
- ▶ Adult: 1 metered application 1–2 times a day for 2 weeks, continued for further 2 weeks if good response, to be inserted into the rectum, 1 metered application contains 20 mg prednisolone
- ▶ BY RECTUM USING SUPPOSITORIES
- ▶ Adult: 5 mg twice daily, to be inserted in to the rectum morning and night, after a bowel movement

Prednisolone

- **Distal ulcerative colitis**
- ▶ BY RECTUM USING RECTAL FOAM
- ▶ Adult: 1 metered application 1–2 times a day for 2 weeks, continued for further 2 weeks if good response, to be inserted into the rectum, 1 metered application contains 20 mg prednisolone

- **Rectal complications of Crohn's disease**
- ▶ BY RECTUM USING SUPPOSITORIES
- ▶ Adult: 5 mg twice daily, to be inserted in to the rectum morning and night, after a bowel movement

- **Rectal and rectosigmoidal ulcerative colitis | Rectal and rectosigmoidal Crohn's disease**
- ▶ BY RECTUM USING ENEMA
- ▶ Adult: 20 mg daily for 2–4 weeks, continued if response
- good, to be used at bedtime

Prednisolone

- **IMPORTANT SAFETY INFORMATION**
- SAFE PRACTICE: **Prednisolone** has been confused with **propranolol**; care must be taken to ensure the correct drug is prescribed and dispensed.

Prednisolone

- MEDICINAL FORMS
- **Foam**
- Prednisolone (as Prednisolone sodium metasulfobenzoate) 20 mg per 1 application Prednisolone 20mg/application foam enema
- **Gastro-resistant tablet**
- CAUTIONARY AND ADVISORY LABELS 5, 10, 25
- Prednisolone 1mg gastro-resistant tablets
- Prednisolone 2.5 mg gastro-resistant tablets
- Prednisolone 5 mg gastro-resistant tablets

Prednisolone

- **Soluble tablet**
- CAUTIONARY AND ADVISORY LABELS 10, 13, 21
- ▶ Prednisolone (as Prednisolone sodium phosphate) 5mg soluble tablets

- **Tablet**
- CAUTIONARY AND ADVISORY LABELS 10, 21
- Prednisolone 1 mg tablets
- Prednisolone 2.5 mg tablets
- Prednisolone 5 mg tablets
- Prednisolone 10 mg tablets
- Prednisolone 20 mg tablets
- Prednisolone 25 mg tablets
- Prednisolone 30 mg tablets

Prednisolone

- **Suppository**
- Prednisolone sodium phosphate 5mg suppositories

- **Suspension for injection**
- Prednisolone acetate 25 mg per 1 ml suspension for injection ampoules

- **Oral solution**
- CAUTIONARY AND ADVISORY LABELS **10**
- Prednisolone 1 mg per 1 ml oral solution
- Prednisolone 10 mg per 1 ml oral solution

- **Enema**
- Prednisolone sodium phosphate 200 microgram per 1 ml enema


actavis
Prednisolone
Tablets
5 mg
28 tablets
alamy stock photo


actavis
Prednisolone
Tablets
5 mg
ENTERIC COATED
28 tablets
For oral use
28 tablets


Prednisolone
Syrup, USP
5 mg per 5 mL
Rx Only
120 mL
ETHEX


Prednisolone
Tablets
5 mg
ENTERIC COATED
28 tablets
For oral use
28 tablets


Prednisolone
Cream
15g


Prednisolone
Cream
15g


NDC 61314-637-05
Prednisolone
Acetate
Ophthalmic
Suspension
USP
1%
℞ only
STERILE
5 mL
SANDOZ
a Novartis company

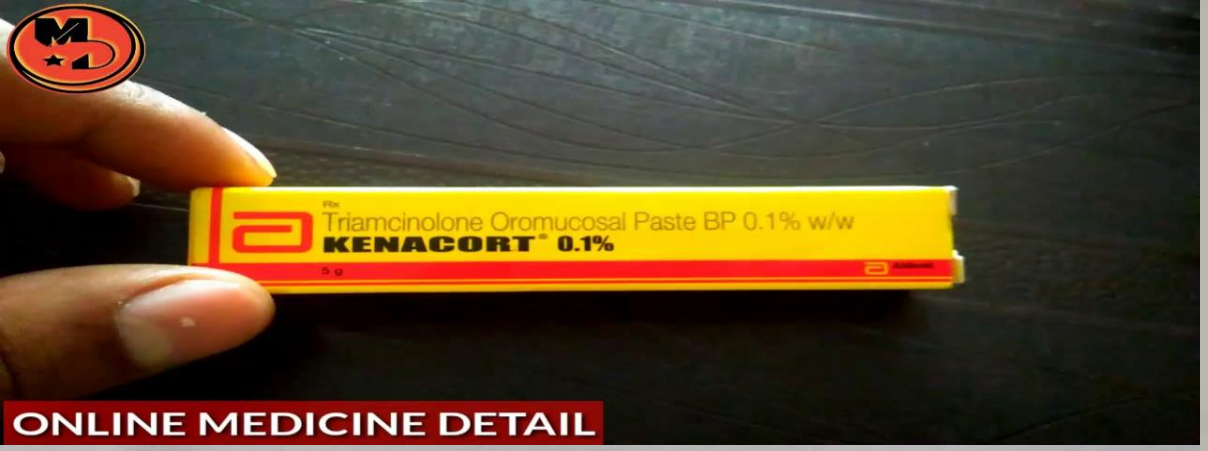
Triamcinolone acetonide

- INDICATIONS AND DOSE
- **Suppression of inflammatory and allergic disorders**
- ▶ BY DEEP INTRAMUSCULAR INJECTION
- ▶ Adult: 40 mg (max. per dose 100 mg), repeated if necessary, dose given for depot effect, to be administered into gluteal muscle; repeated at intervals according to patient's response.
- **CAUTIONS** High dosage (may cause proximal myopathy) avoid in chronic therapy.

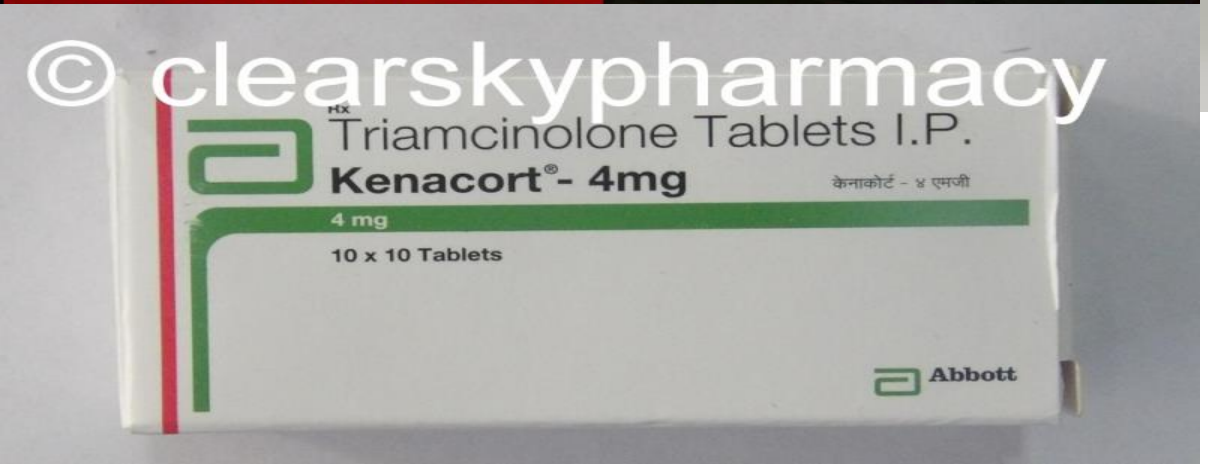
Triamcinolone acetonide

- **MEDICINAL FORM**
- **Suspension for injection**
- CAUTIONARY AND ADVISORY LABELS 10
- EXCIPIENTS: May contain Benzyl alcohol
- Intra-articular / Intradermal Triamcinolone acetonide 10 mg per 1 ml suspension for injection vials
- Intra-articular / Intradermal 10mg/1ml suspension for
- injection ampoules

- Triamcinolone acetonide 40 mg per 1 ml Kenalog® Intra-articular /Intramuscular 40mg/1ml suspension for injection vials


Triamcinolone Oromucosal Paste BP 0.1% w/w
KENACORT® 0.1%
ONLINE MEDICINE DETAIL


TRIAMCINOLONE ACETONIDE
CREAM USP, 0.1%
Rx only
FOR EXTERNAL USE ONLY
NOT FOR OPHTHALMIC USE
NET WT 453.6 g (1 lb)


© clearskypharmacy
Rx
Triamcinolone Tablets I.P.
Kenacort®- 4mg
केनाकोर्ट - ४ एमजी
4 mg
10 x 10 Tablets
Abbott


NDC 70121-1169-1
Triamcinolone Acetonide Injectable Suspension, USP
400 mg per 10 mL
(40 mg per mL)
10 mL Multiple Dose Vial
For intramuscular or intra-articular use only
Rx only


Triamcinolone Acetonide Ointment USP, 0.025%
Perrigo
Rx Only
NDC 45802-054-35
Triamcinolone Acetonide Ointment USP, 0.025%
NET WT 15 g
Perrigo
PERRIGO
Triamcinolone Acetonide Ointment USP, 0.1%
Net Wt. 80 g
Rx Only

Thank you