METHYLPREDNISOLONE

Indications/Uses

Listed in Dosage.

Dosage/Direction for Use

Adult : PO Anti-inflammatory or immunosuppressive Initial: 2-60 mg/day, depending on the disease being treated. Allergic conditions 24 mg on day 1; 20 mg on day 2; 16 mg on day 3; 12 mg on day 4; 8 mg on day 5; 4 mg on day 6. All doses to be given as a single or in divided doses. IV As methylprednisolone Na succinate: Anti-inflammatory or immunosuppressive 10-500 mg/day. Acute allograft rejection in organ transplant recipients 0.5-1 g/day. Status asthmaticus 40 mg, repeated according to patient's response. IM Anti-inflammatory or immunosuppressive As methyprednisolone Na succinate: 10-80 mg once daily. As methylprednisolone acetate: 10-80 mg every 1-2 wk. Intra-articular Anti-inflammatory or immunosuppressive As methylprednisolone acetate: 4-10 mg (small joints); 10-40 mg (medium joints); 20-80 mg (large joints). May be repeated every 1-5 wk. Intralesional Anti-inflammatory or immunosuppressive As methylprednisolone acetate: 20-60 mg every 1-5 wk. Corticosteroid-responsive dermatoses As methylprednisolone acetate: 20-60 mg, may repeat up to 4 inj at intervals depending on the type of lesion and patient's response to the initial inj. Topical Corticosteroid-responsive dermatoses As 0.1% methylprednisolone aceponate oint, cream or lotion: Apply thinly to affected area once daily for up to 12 wk.

Dosage Details

Intra-articular

Anti-inflammatory or immunosuppressive

Adult: As methylprednisolone acetate: 4-10 mg (small joints); 10-40 mg (medium joints); 20-80 mg (large joints). May be repeated every 1-5 wk depending on patient's response.

Intralesional

Corticosteroid-responsive dermatoses

Adult: As methylprednisolone acetate: 20-60 mg; 1-4 inj may be given at intervals depending on the type of lesion and the duration of improvement from the initial inj.

Intralesional

Anti-inflammatory or immunosuppressive

Adult: As methylprednisolone acetate: 20-60 mg every 1-5 wk depending on patient's response.

Intramuscular

Anti-inflammatory or immunosuppressive

Adult: As methyprednisolone Na succinate: 10-80 mg once daily. As methylprednisolone acetate: 10-80 mg every 1-2 wk.

Child: As methylprednisolone Na succinate: 0.5-1.7 mg/kg daily or 5-25 mg/m2 daily in divided doses 6-12 hrly. "Pulse" therapy: 15-30 mg/kg/dose over ≥30 min given once daily for 3 days.

Intravenous

Anti-inflammatory or immunosuppressive

Adult: As methylprednisolone Na succinate: 10-500 mg daily. Doses ≤250 mg are given by inj over at least 5 min while doses >250 mg are given slowly over at least 30 min.

Child: As methylprednisolone Na succinate: 0.5-1.7 mg/kg daily or 5-25 mg/m2 daily in divided doses 6-12 hrly. “Pulse” therapy: 15-30 mg/kg/dose over ≥30 min given once daily for 3 days.

Intravenous

Status asthmaticus

Adult: As methylprednisolone Na succinate: 40 mg, repeated according to patient’s response.

Child: As methylprednisolone Na succinate: 1-4 mg/kg daily for 1-3 days.

Intravenous

Acute allograft rejection in organ transplant recipients

Adult: As methylprednisolone Na succinate: 0.5-1 g daily; continue until the patient has stabilised, usually not beyond 48-72 hr.

Child: As methylprednisolone Na succinate: 10-20 mg/kg daily for up to 3 days. Max: 1,000 mg daily.

Oral

Allergic conditions

Adult: 24 mg on day 1 (8 mg before breakfast, 4 mg after lunch, 4 mg after supper, and 8 mg at bedtime) or 24 mg as a single or in 2-3 divided doses upon initiation (regardless of time of day); 20 mg on day 2 (4 mg before breakfast, 4 mg after lunch, 4 mg after supper, and 8 mg at bedtime); 16 mg on day 3 (4 mg before breakfast, 4 mg after lunch, 4 mg after supper, and 4 mg at bedtime); 12 mg on day 4 (4 mg before breakfast, 4 mg after lunch, and 4 mg at bedtime); 8 mg on day 5 (4 mg before breakfast and 4 mg at bedtime); 4 mg on day 6, given before breakfast.

Oral

Anti-inflammatory or immunosuppressive

Adult: Initially, 2-60 mg daily in 1-4 divided doses, depending on the disease being treated.

Child: As methylprednisolone Na succinate: 0.5-1.7 mg/kg daily or 5-25 mg/m2 daily in divided doses 6-12 hrly. "Pulse" therapy: 15-30 mg/kg/dose over ≥30 min given once daily for 3 days.

Topical/Cutaneous

Corticosteroid-responsive dermatoses

Adult: As 0.1% methylprednisolone aceponate oint, cream or lotion: Apply thinly to affected area once daily for up to 12 wk.

Child: As 0.1% methylprednisolone aceponate oint, cream or lotion: Apply thinly to affected area once daily for up to 4 wk.

Administration

Should be taken with food.

Reconstitution

Methyprednisolone Na succinate: IM/IV inj: Add bacteriostatic water for inj containing benzyl alcohol 0.9% according to the manufacturer's instructions. IV infusion: Dilute further w/ dextrose 5%, NaCl 0.9%, dextrose 5% in NaCl 0.9% inj or other compatible IV soln.

Incompatibility

Intravenous:

Y-site: Allopurinol, amsacrine, caspofungin, ciprofloxacin, docetaxel, etoposide phosphate, fenoldopam, filgrastim, gemcitabine, ondansetron, paclitaxel, palonosetron, propofol, sargramostim, tigecycline, vinorelbine.

Contraindications

Systemic fungal infections unless specific anti-infective therapy is employed; IM admin in idiopathic thrombocytopenic purpura. Intrathecal admin. Concurrent admin of live or live, attenuated vaccines (in patients receiving immunosuppressive doses).

Special Precautions

Patient w/ heart failure, HTN, DM, GI disease (e.g. diverticulitis, intestinal anastomoses, peptic ulcer, ulcerative colitis), multiple sclerosis, myasthenia gravis, acute MI, cataracts, glaucoma, osteoporosis, history of seizure disorder, thyroid disease. Avoid abrupt withdrawal. Renal and hepatic impairment (including cirrhosis). Childn. Pregnancy and lactation.

Adverse Reactions

Adrenal suppression, anaphylactoid reactions, immunosuppression, acute myopathy, Kaposi's sarcoma, psychiatric disturbances (e.g. depression, euphoria, insomnia, mood swings, personality changes), increased susceptibility and severity of infections, impaired healing, HTN, Na and fluid retention, CV collapse (high dose), peptic ulcer, cataract subcapsular, skin atrophy, acne, muscular weakness, growth retardation, decreased blood K; dermal/subdermal skin depression at inj site. Topical: Itching, burning erythema, vesiculation; rarely, folliculitis, hypertrichosis, perioral dermatitis, skin discolouration, allergic skin reactions.

MonitoringParameters

Monitor BP, blood glucose, electrolytes, growth in childn.

Drug Interactions

Loss of corticosteroid-induced adrenal suppression w/ aminoglutethimide. Risk of hypokalaemia w/ K-depleting agents (e.g. amphotericin B, diuretics). Decreased clearance w/ macrolide antibiotics. May decrease serum levels of isoniazid. Increased clearance w/ cholestyramine. Risk of convulsions w/ ciclosporin. Increased risk of arrhythmias w/ digitalis glycosides. Decreased metabolism w/ oestrogens, including OCs. Enhanced metabolism w/ CYP3A4 inducers (e.g. rifampicin, barbiturates). Increased plasma concentrations w/ CYP3A4 inhibitors (e.g. ketoconazole, erythromycin). Risk of GI effects w/ aspirin or other NSAIDs. May increase the anticoagulant effect of warfarin. May reduce the therapeutic effect of antidiabetics.

Potentially Fatal: May diminish response to live or live, attenuated vaccines.

Lab Interference

May suppress reactions to skin test.

Action

Description: Methylprednisolone binds to and activates intracellular glucocorticoid receptors. Activated glucocorticoid receptors bind to promoter regions of DNA (which may activate or suppress transcription) and activate transcription factors resulting in inactivation of genes through deacetylation of histones.

Onset: Peak effect: 1-2 hr (oral); 4-8 days (IM); 1 wk (intra-articular).

Duration: 30-36 hr (oral); 1-4 wk (IM); 1-5 wk (intra-articular).

Pharmacokinetics:

Absorption: Rapidly absorbed (oral); absorbed from joints over a wk but is more slowly absorbed following deep IM inj (as acetate); rapidly absorbed after IM inj (Na succinate ester). Time to peak plasma concentration: 2 hr (Na succinate ester).

Distribution: Fairly rapidly distributed (oral). Crosses the placenta. Volume of distribution: 0.7-1.5 L/kg.

Excretion: Plasma half-life: ≥3.5 hr.

Chemical Structure

Click on icon to see table/diagram/image

Storage

Store between 20-25°C.

MIMS Class

Antiasthmatic & COPD Preparations / Corticosteroid Hormones / Supportive Care Therapy / Topical Corticosteroids

ATC Classification

D10AA02 - methylprednisolone ; Belongs to the class of topical corticosteroids used in the treatment of acne.

H02AB04 - methylprednisolone ; Belongs to the class of glucocorticoids. Used in systemic corticosteroid preparations.

D07AA01 - methylprednisolone ; Belongs to the class of weak (group I) corticosteroids. Used in the treatment of dermatological diseases.