Corticosteroids

(prednisone, methylprednisolone, dexamethasone, etc.)

Corticosteroids are adrenocortical steroids are used as replacement therapy in adrenocortical deficiency states, and can be both naturally occurring (hydrocortisone and cortisone) or synthetic (prednisone, prednisolone, methylprednisolone, dexamethasone, etc.) Synthetic analogs are primarily used for their potent anti-inflammatory effects, however also suppress the immune system and suppress adrenal function at high doses.

Indications and Dosing in Rheumatology

Corticosteroids may be indicated as adjunctive therapy for short-term administration during an acute episode or exacerbation of an inflammatory condition, such as rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, acute gouty arthritis, uveitis, giant cell arteritis, etc.

Dosing

Oral: Dose and duration dependent on indication and patient response

- Prednisone: most commonly 5-60 mg/day
- Methylprednisolone: most commonly 16 – 64 mg/day
- Prednisolone: most commonly 10-60 mg/day

Intramuscular:

- Methylprednisolone acetate or succinate 40-60 mg as a single dose

Intra-articular:

- Methylprednisolone acetate as a single dose with dose depending on joint size (i.e. 4-10 mg in small joint, 10-40 mg in medium joint, 20-80 mg in large joint).
- Triamcinolone acetonide or hexacetonide 2.5 mg – 40 mg depending upon joint size
- Betamethasone 3-12 mg as a single dose with dose depending on joint size

Topical (i.e. psoriatic arthritis):

- Super potent: clobetasol propionate, fluocinonide, halobetasol propionate, etc.
- High potency: betamethasone dipropionate, desoximetasone >0.05%, mometasone, etc.
- Medium potency: betamethasone valerate, desoximetasone, fluocinolone acetonide, etc.
- Low potency: desonide, hydrocortisone

Ophthalmic (i.e. uveitis):

- Prednisolone acetate 1% 1-2 drops 2-4 times daily
- Difluprednate 0.05% (Durezol): 1 drop up to 4 times daily
- Dexamethasone (Ozurdex) intravitreal injection: 0.7mg implant injected in affected eye

Contraindications

- Hypersensitivity to any component of the formulation
- Administration of live vaccines with immunosuppressive doses
- Use during systemic fungal infection

Warnings and Precautions

- Gastrointestinal adverse effects – gastritis, peptic ulcer disease, dyspepsia
- Osteoporosis, osteonecrosis, and increased risk of fractures
- Fluid and electrolyte disturbances: sodium retention, fluid retention, edema, hypertension, and congestive heart failure in susceptible patients
- Endocrine effects: adrenal suppression with long duration
  - ❑ Decreased carbohydrate and glucose tolerance, hyperglycemia
  - ❑ Weight gain
- Cushingoid features
- Dermatologic: skin atrophy and thinning, ecchymoses and petechiae, and poor wound healing
- Mood changes and psychiatric disturbances
- Cataracts and glaucoma
- Immunosuppression

Adverse Reactions

Common (may be dose and duration dependent):

- Sleep disturbance and mood changes
- Fluid retention and hypertension
- Hyperglycemia
- Gastritis and peptic ulcers
- Glaucoma
- Cutaneous effects including ecchymosis and skin thinning.

continued

ACR/ARP Medication Guide

American College of Rheumatology
Empowering Rheumatology Professionals

Association of Rheumatology Professionals
The Interprofessional Division of the American College of Rheumatology

Medication Strength and Preparations

Prednisone is available as:

- Oral tablets: 1 mg, 2.5 mg, 5 mg, 10 mg, 20 mg, and 50 mg
- Oral solution: 5 mg/5 mL
- 5 mg oral taper dose-pack of day 1: 30 mg (6 tablets), day 2: 25 mg (5 tablets), day 3: 20 mg (4 tablets), day 4: 15 mg (3 tablets), day 5: 10 mg (2 tablets), and day 6: 5 mg (1 tablet)

Methylprednisolone is available as:

- Oral tablets: 4 mg, 8 mg, 16 mg, and 32 mg
- 4 mg oral taper dose-pack of day 1: 24 mg (6 tablets), day 2: 20 mg (5 tablets), day 3: 16 mg (4 tablets), day 4: 12 mg (3 tablets), day 5: 8 mg (2 tablets), and day 6: 4 mg (1 tablet)
- Acetate suspension for injection (Depo-Medrol): 40 mg/mL, 80 mg/mL
- Sodium succinate solution for infection (Solu-Medrol): 40 mg, 125 mg, 500 mg, 1,000 mg

Medication Administration and Monitoring

- Exogenous corticosteroids suppress adrenocorticoid activity the least when given at the time of maximal activity (2-8 am), therefore recommended to administer corticosteroids once daily in the morning, however higher doses can be divided throughout the day if needed.
- Administration with food or milk to decrease GI side effects. Consider antacids to help prevent peptic ulcer disease when large doses of corticosteroids are given.
- Do to adrenal insufficiency with long term use, avoid abrupt withdrawal of therapy and taper dosing with discontinuation.

Updated June 2023–ARP Practice Committee