Systemic and topical corticosteroids

Oral corticosteroids

Corticosteroids vary in their glucocorticoid and mineralocorticoid properties. Table D.18 provides information on relative potencies and equivalent doses of systemic corticosteroids.

Oral budesonide is not included in the table because it is used in inflammatory bowel disease for local gastrointestinal effects. Systemic absorption of budesonide is reduced by high first-pass metabolism, but some systemic effects can occur.

Tapering doses

Prolonged therapy with high-dose corticosteroids may cause adrenal suppression. Treatment with doses greater than prednis(ol)one 5 mg (or equivalent) for longer than two to three weeks may require tapering of the dose to avoid adrenal insufficiency and disease relapse. The rate of tapering is dependent on the dose, duration of treatment and underlying disease state. Studies have shown that acute treatment with courses of corticosteroids of up to 10 days' duration do not routinely require tapering.

Inhaled corticosteroids

Corticosteroids used for inhalation (beclomethasone, budesonide, ciclesonide and fluticasone) have high topical potency; any swallowed dose is subject to considerable hepatic first-pass metabolism. However, systemic effects can also occur. The following table shows dose equivalence.

Table D.19 Approximate dose equivalence of inhaled corticosteroids

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Inhaled corticosteroid	Dose (microgram)
Beclomethasone CFC-free	100
Fluticasone	100
Budesonide	200
Ciclesonide	80

Topical corticosteroids

General principles of use

Topical corticosteroids play an important role in the management of dermatological conditions, in particular inflammatory diseases. When used correctly, they are quite safe; prolonged therapy with mild or moderately potent preparations rarely leads to complications. Adverse effects may manifest locally (skin effects) as well as systemically, including adrenal suppression and Cushing's syndrome.

Table D.18 Systemic corticosteroids: potencies and equivalent doses

Compound	Anti-inflammatory potency (glucocorticoid activity)	Sodium-retaining potency (mineralo-corticoid activity)	Duration of action*	Approximate equivalent dose (mg)†
Hydrocortisone (cortisol)	1	1	S	20
Cortisone	0.8	0.8	S	25
Prednisone	3.5	0.8	I	5
Prednisolone	4	0.8	I	5
Methylprednisolone	5	0.5	I	4
Triamcinolone	5	0	I	4
Fludrocortisone	10	125	S	–
Betamethasone	25	0	L	0.6
Dexamethasone	30	0	L	0.75

* Duration of action: S – short or 8–12 hour biological half-life; I – intermediate or 12–36 hour biological half-life; L – long or 36–72 hour biological half-life

† These dose relationships apply only to oral or intravenous administration; relative glucocorticoid potencies may differ greatly when injected intramuscularly or into joint spaces. Fludrocortisone is not used for glucocorticoid effects.