

STRESS DOSE STEROIDS

Supplemental Steroid Dosing in Tertiary (Iatrogenic) Adrenal Insufficiency*

(*All patients with Addison's Disease or ACTH deficiency (i.e., pituitary surgery) require stress-dose steroids!)

1. Who needs supplemental steroids?

HPA axis status	Glucocorticoid exposure	Management
NOT suppressed	<ul style="list-style-type: none"> • <3 weeks • Every-other-day therapy • AM dose of <5mg prednisone or equivalent* 	Take usual AM dose of glucocorticoid.
MAY be suppressed	<ul style="list-style-type: none"> • Intermediate dose glucocorticoid use (5-20 mg prednisone or equivalent/day) • Inhaled steroid use • Class I topical glucocorticoid use • Significant glucocorticoid use in the past year 	ACTH stimulation test** vs empiric supplemental steroids without testing.
IS suppressed.	<ul style="list-style-type: none"> • >20mg/day of prednisone or equivalent for > 3 wks • Clinically Cushingoid appearance 	Supplemental steroids.

*Steroid equivalents: 5 mg prednisone = 4mg methylprednisolone =0.75 mg dexamethasone = 20mg hydrocortisone

2. Dosing Recommendations (based upon expert opinion, not randomized trials):

Surgical risk	Examples	Recommendation
Minor surgery	inguinal hernia repair colonoscopy	Take usual AM steroid dose
Moderate surgery	open cholecystectomy TKA	Take usual AM steroid dose plus: 50mg hydrocortisone IV prior to surgery followed by 25mg q8h x24h, then resume usual dose
Major surgery	esophagectomy total colectomy Whipple liver resection	Take usual AM steroid dose plus: 100mg hydrocortisone prior to surgery followed by 50mg q8h x24h, then taper dose by 1/2 per day until maintenance dose reached.

3. Watch for complications! Glucocorticoid Therapy can cause:

- HPA axis suppression
- Impaired wound healing
- Skin thinning and easy bruising
- Reduced bone mass, leading to fracture
- Increased susceptibility to infections
- Insomnia, mania, psychosis
- Ulcer/GI hemorrhage
- Insulin resistance
- Fluid retention/worsened BP control
- Subcapsular cataract formation
- Myopathy/proximal muscle weakness

References:

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4. Salem M, Tainsh RE, Bromberg J, et al. Perioperative glucocorticoid coverage: a reassessment 42 years after emergence of a problem. Ann Surg 1994; 219:416-425.
5. Welsh GA, Manzullo EF, Nieman LK. The Surgical Patient Taking Glucocorticoids. UpToDate version 14.2; www.uptodate.com, printed 7/10/2006.