HOW TO REPLACE CORTISOL

CHAPTER 8
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BRINGING A NEW DIMENSION TO PAIN CARE

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Hormones & Pain Care Information Network

Precis: Low serum cortisol levels almost always return to normal range by low dose administration of hydrocortisone.

INDICATION FOR REPLACEMENT

Any chronic pain patient with a low serum cortisol level.

PROTOCOL
➢ **Begin with 5 mg of hydrocortisone 1 to 2 times a day.**
➢ **Do not use prednisone, methylprednisolone, dexamethasone, or triamcinolone.**
➢ **Retest within 2 to 4 weeks to determine if the serum level has increased. Raise hydrocortisone by no more than 5 mg a week.**
➢ **Continue raising the hydrocortisone dosage until the serum cortisol is in normal range.**
➢ **Once good pain control is achieved, the hydrocortisone dosage can be reduced and even stopped if the patient maintains a normal serum cortisol level.**
➢ **Some patients keep their pain better controlled and use fewer opioids if they maintain on a low, sub-replacement dosage of 5 to 15 mg a day.**

DON'T FEAR COMPLICATIONS

Most practitioners fear corticoid prescribing because they are aware that adrenal suppression and/or Cushing's Syndrome may result.[1,2] Be it clearly known that the average adult produces about 30 mg of hydrocortisone equivalent a day.[1] When administered, the liver rapidly converts hydrocortisone to cortisol.[1] Therefore, a dosage below 30 mg is actually sub-replacement. Pituitary and adrenal suppression only occurs with supra-physiologic dosages of hydrocortisone or its analogues are chronically administered. The synthetic corticoids, prednisone, methylprednisolone, dexamethasone, and triamcinolone, can easily exceed physiologic replacement equivalents and cause pituitary-adrenal

suppression, osteoporosis, and other complications typical of Cushing's Syndrome.[1,2] Stick with plain sub-replacement dosage of hydrocortisone.

BE PREPARED FOR FIRST WEEK REACTOINS

Some pain patients biologically adjust to low serum levels of cortisol and they may have endured this state for a considerable time period. Consequently, the administration of even a low dosage of hydrocortisone may be a "jolt" to the system. Fundamentally, the administration of hydrocortisone may awaken and stimulate a number of dormant biologic systems. Warn the patient that the "awakening" can cause these temporary, unpleasant symptoms:

HEADACHE, EDEMA, NAUSEA, DIZZINESS, INSOMNIA, MENSTRUAL BLEEDING

These nuisance symptoms fade within a few days, but you may have to temporarily lower the initiating dose of hydrocortisone to 2.5 to 5 mg a day before raising it to sufficient levels to achieve a normal serum range..

SIMULTANEOUS ADMINISTRATION OF MEDICATION

You can simultaneously initiate hydrocortisone and other medications, including antidepressants, anti-inflammatories, neuropathic agents, and opioids. If possible, our recommendation is to hold off on opioids until you see how much pain relief you can obtain with hydrocortisone and raising the serum cortisol levels. Practitioners are starting to report that they often don't have to start opioids or elevate opioid dosages if normal serum cortisol levels are attained.

OPIOID SUPPRESSION OF CORTISOL

Although less well known and infrequent than testosterone suppression, opioids may suppress serum cortisol.[3-5] Long-acting and intrathecal as opposed to short-acting opioids commonly cause hormone suppression.[6,7] Short-acting opioids let the hormone system function normally during periods when little or no opioid is in the serum.

DELAY OPIOIDS UNTIL HYDROCORTISONE HAS TIME TO RAISE SERUM CORTISOL

CHECK SERUM CORTISOL IF OPIOIDS LOSE EFFECTIVENESS OR "HYPERALGESIA" IS PRESENT

Practitioners commonly express concern about opioid "hyperalgesia" which has become a "catch-all" term whenever opioids lose effectiveness. Before rotating or reducing an opioid, first check the serum cortisol. A low serum cortisol may render opioids ineffectual as adrenal corticoids are necessary for opioid receptor binding, maintenance of the blood brain barrier, and physiologic nerve conduction.[8-12]

URGENCY REPLACEMENT

Life is not sustainable without a minimal level of serum cortisol. Little is known, however, as to what the minimal, sustainable level must be. Patients who have died from adrenal failure (Addison's Disease) have characteristically exhibited an illness over a 1 to 2 year period of increasing fatigue, depression, weight loss, apathy, reclusiveness, hypotension, and a bed or house bound state.[13,14] Two of the 11 cases of death described by Dr. Addison in 1855 were patients with chronic pain.[14] Cortisol serum testing was not invented until about 1960, and we cannot find any literary references on death-related levels. In lieu of this lack of published information, we recommend that serum levels under 1.0 mcg/dl be considered an urgency. In this situation hydrocortisone replacement should be urgently initiated and maintained until pain is well controlled and cortisol serum levels elevate to normal.

CONSIDER A CORTISOL LEVEL UNDER 1.0 mcg/dl AN URGENT MATTER

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