WHO TO TEST FOR LOW CORTISOL LEVELS

CHAPTER 7
MAY, 2013

BRINGING A NEW DIMENSION TO PAIN CARE

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Hormones & Pain Care **Information Network**

Precis: Severe chronic pain patients have a very high prevalence of low serum cortisol levels and at least temporary replacement is required.

HOW COMMON IS LOW CORTISOL IN SEVERE PAIN PATIENTS?

Very common. Current evidence suggests that about any cause of severe pain that becomes centralized will produce low cortisol. A good list of references on low serum cortisol which date back several years is attached to document the veracity of this statement.[1-24] Two new studies are confirmatory.[25,26] In one, chronic low back pain patients almost universally showed low 24 hour cortisol levels.[26] In another 38% of Chronic Regional Pain Syndrome (CRPS) patients had low baseline serum cortisol levels. Further testing found that the primary metabolic defect was in the hypothalamus which has been found in several other studies of pain patients.[3,4,8,11,14,15]

OPIOID SUPPRESSION

Although testosterone suppression is the most common deficiency caused by opioids, cortisol ranks second. About 5 to 15% of patients on intrathecal or long-acting opioids will have low serum cortisol levels and require replacement.[27,28] Even weak opioids can occasionally suppress cortisol.[29]

WHO SHOULD BE TESTED?	CLINICAL CRITERIA FOR DIAGNOSIS OF CENTRALIZED PAIN
• **ALL CENTRALIZED PAIN PATIENTS** • **PATIENTS WHO TAKE LONG-ACTING OR MULTIPLE SHORT-ACTING OPIOIDS**	✓ **Pain constant for over a year** ✓ **Little of no response to peripheral treatments*** ✓ **Severe insomnia** ✓ **Excess Sympathetic Discharge (3 or more of 6)** • **Mydriasis** • **Hyperhydrosis** • **Vasoconstriction (cold hands or feet)** • **Hyperreflexia** • **Hypertension** • **Tachycardia** ***Examples are corticoid injections, acupuncture, topical lidocaine, prolotherapy, and electromagnetic measures**

WHO SHOULD NOT BE TESTED?

Patients with mild to moderate pain problems and who don't require opioids are not candidates for testing.

ROOT CAUSEOF LOW CORTISOL

Although serum cortisol rises in the early phases of severe chronic pain, they lower in long term chronic pain patients.[22] The root cause primarily appears to be hypo-function of the hypothalamus with depressed release of corticotropin releasing hormone (CRH) and adrenocorticotropin hormone (ACTH).[3,14,15,26] Severe uncontrolled, chronic pain is the root cause of hypothalamic hypo-function, and centralized pain is usually present when this occurs. Some studies suggest that a permanent dysfunction of CRH may even result in severe centralized pain patients.[4,11] Autoimmune manifestations which commonly accompany centralized pain may play a role in some cases.

OTHER PATIENTS TO TEST

Besides the two categories of patients shown above, it is safe to test any pain patient who displays a number of signs and symptoms of adrenal insufficiency which are listed in the Table below. The need for vigilance is expressed well in a review paper on "Addison's Disease: 2001." *"Adrenal insufficiency can present as a life-threatening crises, because it is frequently unrecognized in its early stages. Thus physicians are advised to keep a high index of suspicion of adrenal insufficiency in unexpected illness. Adrenal insufficiency can present with ill-defined fatigue and weakness. It can mimic a gastrointestinal disorder or a psychiatric disease, especially depression. Adrenal insufficiency may cause persistent vomiting, anorexia, hypoglycemia, weight loss, malaise, fatigue, muscular weakness, unexplained dehydration, hypotension, and "muddy" hyperpigmentation."* [28]

ADRENAL INSUFFICIENCY IS SO COMMON IN SEVERE CENTRALIZED PAIN PATIENTS THAT PAIN PRACTITIONERS MUST CONSTANTLY BE ALERT TO THIS POSSIBILITY.

TABLE ONE

SIGNS AND SYMPTOMS OF LOW CORTISOL

Hypoglycemia	**Weakness**	**Dehydration**
Tiredness	**Weight Loss**	**Dizziness**
Disorientation	**Hypotension**	**Myalgia**
Diarrhea	**Nausea**	**Inability to Concentrate**
Vomiting	**Memory Loss**	**Depression**
Poor Analgesic Response	**Muscle Wasting**	**"Muddy" Pigmentation**
Tachycardia		

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