

Mild Growth Hormone Deficiency Versus Mild Cortisol Deficiency - Which One Should You Treat?

The pituitary makes several hormones, and if the pituitary is damaged, such as in cases of surgery, radiation, a pituitary tumor, or if the pituitary is small from conditions like Sheehan's syndrome and empty sella syndrome, hormone deficiencies occur. There is a set order of these hormone deficiencies, and growth hormone is the first hormone deficiency to occur in cases of hypopituitarism. The second one is usually LH and FSH, which leads to low estrogen and testosterone. The third hormone to be affected is TSH, which leads to low thyroid hormones (central hypothyroidism), and the last hormone to become deficient, which requires extensive damage to the pituitary, is ACTH, and when that is affected, low cortisol occurs.

Dr. Friedman is very interested in optimizing hormone replacements in hypopituitarism and is surprised at the recent guidelines and articles that state that only severe cases of growth hormone deficiency should be treated. There was an article in the *Journal of Clinical Endocrinology and Metabolism* in June 2013 that suggested that idiopathic (without a clear cut cause) growth hormone deficiency does not exist. This article suggested that growth hormone deficiency should only be treated if it is severe and if the patient has other pituitary hormone deficiencies. In fact, many insurance companies require that the patient has at least 2 to 3 other pituitary hormone deficiencies before treatment. To me, this makes no sense because the growth hormone deficiency is the first pituitary deficiency to occur. So the question is why is it recommended that mild growth hormone deficiency not be treated.

On the other hand, almost everybody treats mild cortisol deficiency. In medicine, we look at the benefits and risks of treatment, and the treatment for cortisol deficiency is giving hydrocortisone or Cortef. Certainly, if hydrocortisone is needed it should be given, but in many borderline cases it is unclear whether hydrocortisone needs to be given. Giving exogenous cortisol shuts down the adrenal glands from making its own cortisol and therefore, once you start cortisol, it is very hard to stop it. Additionally excess cortisol, and it can be very hard to give the right amount of cortisol, leads to weight gain, diabetes, infections, and osteoporosis (thin bones). Many endocrinologists erroneously feel that patients can die suddenly from cortisol deficiency. This is based on old literature and occurred only in patients with severe cortisol deficiency. More recent literature suggests that patients with mild cortisol deficiency do not die suddenly, do not necessarily need to be treated with hydrocortisone, and the benefits of treating with exogenous hydrocortisone most likely outweigh the risk unless the cortisol deficiency is severe. Additionally, hormonal replacement should be guided by symptoms. Patients with low cortisol have nausea, vomiting, diarrhea, abdominal pain, joint pains, and weight loss. Most patients who fail their cortisol stimulation test and are told they have mild cortisol deficiency do not have those symptoms. In fact, many patients with hypopituitarism have more symptoms of excess cortisol such as weight gain, than cortisol deficiency.

In contrast, patients with growth hormone deficiency do have weight gain. They have trouble sleeping. They have psychological and psychiatric problems including depression, mood swings and irritability. Their quality of life and functionality is much lower. All these symptoms are improved with growth hormone replacement. Growth hormone replacement has very few side effects. The main side effects are joint pain and edema. Some patients on growth hormone

replacement can get worsening glucose control, but in general the patients feel so much better on growth hormone replacement, they exercise more and feel better and their blood sugar improves.

Dr. Friedman has found that patients with mild growth hormone deficiency do just as well on growth hormone replacement as those with severe. He is in the process of trying to study this, but he has found that growth hormone deficiency in patients that have a growth hormone stimulation test such as a glucagon stimulation test that peaked between 3 and 8 benefit from growth hormone replacement, just as the ones that would have severe growth hormone insufficiency such as those that have a growth hormone peak after a stimulation test of less than 3.

Dr. Friedman suspects that the real reason why mild growth hormone deficiency is not treated while mild cortisol deficiency is treated has to do with cost and insurances. Growth hormone replacement is quite expensive and can cost over \$1000 a month while cortisol replacement is quite inexpensive. Because of the cost of growth hormone replacement, most people need their insurances to pay for it, and insurance companies are getting more and more reluctant to cover growth hormone replacement, possibly because of the cost. Because Dr. Friedman is very interested in improving the patients' quality of life, especially those with hypopituitarism, he tries to fight to have patients with mild growth hormone deficiency covered by their insurance and so those patients could benefit from growth hormone replacement.

For more information about Dr. Friedman's practice or to schedule an appointment, go to www.goodhormonehealth.com.