

HPA Axis Dysregulation Case Assignments (Answers)

CASE #1 ANSWER:

High total cortisol production with high free cortisol at all time points. Particularly high cortisol on waking is consistent with his severely altered circadian rhythm and poor sleep, though melatonin is within the normal range.

Treatment plan: The major focus here is on addressing the circadian disruption and reviewing sleep hygiene (though this is of course incredibly difficult with someone who suffers from depression). Of equal importance is decreasing inflammation. Supplements here might include HPA Balance, 5-HTP, Acetyl-CH, curcumin, and boswellia. In this case, I might also consider low-dose naltrexone (LDN) to bring the immune system into better balance and CBD oil to address likely neuroinflammation. In the 2016 LDN conference, Dr. Chopra discussed his experience with LDN and CBD and feels these are a beneficial combination, as CBD contains cell repair properties. Please note that treatment with both LDN and CBD is still relatively new and we are continuing to learn, but this may warrant discussion with this patient given the nature of his debilitating symptoms.

CASE #2 ANSWER:

While the free cortisol and free cortisone curves are fairly normal with the exception of low afternoon free cortisol and free cortisone, total cortisol production is elevated. We expected to see low cortisol throughout, and while she does note a significant energy crash in the afternoon, her fatigue throughout the day feels limiting.

Treatment plan: Mercury detoxification is of primary consideration for her given the inflammation and known mercury toxicity. While working through detox, additional support can include HPA balance, Acetyl-CH, Stress Manager (herbal adaptogens to regulate cortisol balance without licorice to raise free cortisol), curcumin, boswellia, EVCLO, and additional vitamin D drops to increase her vitamin D (then just EVCLO for maintenance).

CASE #3 ANSWER:

The prior year she went through a difficult divorce and felt she was still recovering from this emotional trauma. Along with the gut issues and findings of early metabolic syndrome, this fits with the low total cortisol production. She is overweight and likely has early insulin resistance, which contributes to keeping free cortisol and free cortisone high relative to the low total cortisol production. Additionally she has inflammation, and anti-inflammatory supplements should be included as part of the treatment protocol.

Given her relatively high free cortisol despite low total cortisol production consistent with sluggish metabolism, thyroid function needs to be considered. She does have a history of hypothyroidism but currently takes NatureThroid and has a TSH of 0.7.

Treatment plan: Treat the gut, introduce mindfulness practice, Vital Adapt, curcumin, boswellia, EVCLO, Acetyl-CH, and adrenal glandulars.

CASE #4 ANSWER:

Total cortisol production is high, but free cortisol is low, with a low cortisol-to-cortisone ratio. This is consistent with insulin resistance, overweight, and metabolic dysfunction. Although her melatonin is normal, HPA axis dysfunction is likely to blame for her sleep disturbance. Note that both high and low cortisol can contribute to sleep problems. One of cortisol's roles is to raise blood sugar if it drops too low overnight. If cortisol is low and unable to perform that role, then epinephrine (aka adrenaline) will be secreted to restore normal blood sugar. These patients will wake suddenly in the middle of the night with a pounding heart and other symptoms of "alarm response."

Treatment plan: Treat SIBO, dietary approaches to address her metabolic dysfunction, and consider supplements such as GlucoSupreme and Metabolic Synergy to support healthier blood glucose and insulin sensitivity; curcumin, EVCLO, and boswellia to decrease inflammation; and most importantly with this patient, regular stress management. Since her free cortisol is low and metabolized cortisol is high, treatment can be tricky. Some anecdotal evidence suggests that adaptogenic herbs may increase free cortisol without affecting metabolites, so a trial of Vital Adapt or HPA Balance may be worthwhile here. If you do choose to use Vital Adapt in a situation like this, make sure to monitor blood pressure on a weekly or bi-weekly basis. Although the dose of licorice in Vital Adapt is unlikely to provoke hypertension in someone that doesn't already suffer from it, since this patient is overweight and has pre-diabetes, caution is warranted.

CASE #5 ANSWER:

Total cortisol production is incredibly high, nearly twice the upper limit of normal. This level raises the possibility of referral out for further evaluation, but given the number of findings adversely affecting her health, initial treatment is a reasonable approach prior to referral to an endocrinologist for concern of Cushing's.

Initial treatment: Treat the gut, replete iron, mindfulness practices with particular attention to decreasing anxiety, Stress Manager (herbal adaptogens to regulate cortisol balance without licorice to raise free cortisol, which may worsen anxiety in some patients), dietary approaches to support weight loss and improve insulin sensitivity (may also consider GlucoSupreme and Metabolic Synergy, but this particular patient preferred to limit supplements), curcumin and/or boswellia to decrease inflammation, HPA Balance and Kavinace more specifically for reducing cortisol levels and anxiety and enhancing sleep.