THE GLANDULAR CORNER: HYPOTHALAMUS

Linda Isaacs, MD, Discusses Hypothalamus Glandular Therapy, Including a Review of The Physiology of the Hypothalamus and Current Clinical Applications of Its Glandular

The hypothalamus makes up only 4 g of the 1,400 g of the adult human brain.[1] Despite its tiny size, it coordinates a remarkable number of physiologic activities: energy metabolism and expenditure, appetite and digestion, temperature control, fluid and electrolyte balance, sleep-wake cycles, and the various functions of the autonomic nervous system. It has two-way connecting pathways with all parts of the limbic system, the neuronal circuitry in the brain that controls emotional behavior and motivational drive.[2]

In addition to its interactions with the nervous system via the limbic pathways and the autonomic nervous system, the hypothalamus manages the endocrine response to stress via the hypothalamic-pituitary-adrenal-thyroid axis. The hypothalamus secretes hormones such as thyrotropin-releasing hormone (TRH) and corticotropin-releasing hormone (CRH), which then cause the pituitary to release thyroid-stimulating hormone (TSH) and adrenocorticotropic hormone (ACTH). These in turn cause the release of thyroxine from the thyroid, or cortisol from the adrenals.

As is common with the endocrine system, the functions of the hypothalamus were determined by study of humans whose hypothalamuses had been damaged by tumors or trauma, and by surgical procedures in animals. A 1940 book, *The Hypothalamus and Central Levels of Autonomic Function*, describes numerous cases of patients with hypothalamic tumors whose personalities had changed, or of intraoperative trauma to the base of the skull resulting in "outbursts of emotional activity and expression."[3] Other investigators found that when the hypothalamus of an animal was destroyed, "full expression of the patterns of emotional behavior did not occur."[3]

Given the hypothalamus' interactions with the limbic system; the autonomic nervous system; and the pituitary, adrenals, and thyroid, it is not surprising that the hypothalamus is believed to be involved when patients suffer from depression or anxiety.[4] For more than 20 years, I have been recommending the use of oral hypothalamus glandular products to patients with these conditions. In addition to finding the glandular beneficial in and of itself, patients tell me that adding it has led to other modalities, such as meditation or psychotherapy, becoming more effective. Taken at dinner or bedtime, hypothalamus glandular products can be helpful for occasional sleeplessness.

In my experience, most patients eventually no longer need the glandular, and it can cause headaches if taken when not needed.

How might it work? One possibility is oral tolerance: the damping down of autoimmunity by the ingestion of similar materials.[5] In a 2021 article, patients with chronic fatigue were tested for anti-hypothalamus antibodies.[6] The antibodies were found in 33% of the patients, and those with higher titers had

more severe symptoms than those without such autoantibodies. Those with higher titers of antibodies also had depressed levels of ACTH and cortisol. My clinical experience is that hypothalamus and adrenal glandulars are helpful for patients with chronic fatigue.

Hypothalamus glandular products are typically from a bovine source, since tissue collection would not be feasible from smaller animals. Because nervous tissue raw materials could contain the prions that cause bovine spongiform encephalopathy (BSE), it is critically important to use high-quality materials. Australia and New Zealand have had strict restrictions on the importation of animals and animal products for many years, including prior to the discovery of BSE.[7] There have been no cases of BSE in Australia or New Zealand, and their governments are vigilant in the defense of their meat industries.[8]

Another theoretical concern is that TRH from oral hypothalamus product could produce hyperthyroidism. In a study of oral absorption of a synthetic TRH, 40 mg produced a measurable increase in TSH and triiodothyronine (T3), but no symptoms associated with hyperthyroidism.[9] The concentration of TRH in hypothalamic tissue is extremely small, around 126 pg/mg.[10] The amount of TRH in a capsule of hypothalamus glandular product is orders of magnitude less than what would be needed to produce hyperthyroidism.

Overall, I have found hypothalamus glandular products to be invaluable in my practice—they are well tolerated, and especially helpful for my patients needing support around chronic fatigue and mood concerns. ■

SEE P. 19 FOR REFERENCES

The hypothalamus makes up only 4 g of the 1,400 g of the adult human brain. Despite its tiny size, it coordinates a remarkable number of physiologic activities.

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