Endocrine Society experts issue clinical practice guideline on hypopituitarism

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The Endocrine Society today issued a Clinical Practice Guideline that recommends treating insufficient hormone levels in individuals with hypopituitarism by replacing hormones at levels as close to the body's natural patterns as possible.

The guideline, titled "Hormonal Replacement in Hypopituitarism in Adults: An Endocrine Society Clinical Practice Guideline," was published online and will appear in the November 2016 print issue of *The Journal of Clinical Endocrinology & Metabolism* (*JCEM*), a publication of the Endocrine Society.

Hypopituitarism, or pituitary insufficiency, occurs when the pituitary gland does not produce sufficient amounts of hormones—the chemical signals that regulate respiration, reproduction, growth, metabolism, sexual function and other important biological functions. The pituitary gland is often called the master gland because the hormones it produces impact many bodily functions. As a result, hypopituitarism can cause a range of symptoms, according to the Hormone Health Network.

The rare disorder can occur due to abnormal development or later in life as a result of a tumor, traumatic brain injury, hemorrhage or autoimmune condition, according to the Society's Endocrine Facts and Figures Report. Hypopituitarism affects about 45 people in every 100,000, according to the guideline.

"Hypopituitarism can manifest as low levels of a variety of hormones,

including cortisol, thyroid hormone, estrogen, testosterone and growth hormone," said Maria Fleseriu, MD, FACE, of Oregon Health & Science University in Portland, OR. Fleseriu chaired the task force that developed the guideline. "The goal of treatment should be to restore hormone levels as close to healthy levels as possible The interactions between these hormones also are very important, and patients might require dose changes of one or more of the replacement hormones after starting or discontinuing another one."

In recommending treatment options, the guideline task force followed the overriding principle of using hormone replacement therapy dose size and timing to mimic the body's natural functioning as closely as possible.

Accurate and reliable measurements of hormones play a central role in diagnosing hypopituitarism and monitoring the effectiveness of treatments, Fleseriu said. Healthcare providers need to keep in mind technical considerations to ensure the testing procedure is as accurate as possible.

The guideline addresses special circumstances that may affect the treatment of patients with hypopituitarism, including pregnancy care, post-surgical care following pituitary or other operations, treatment in combination with anti-epilepsy medication, and care following pituitary apoplexy—a serious condition that occurs when there is bleeding into the gland or blood flow to it is blocked.

Recommendations from the guideline include:

- Measurements of both free thyroxine and thyroid-stimulating hormone are needed to evaluate central hypothyroidism, a condition where the thyroid gland does not produce enough hormones because it isn't stimulated by the pituitary gland.
- People who have central hypothyroidism should be treated with

levothyroxine in doses sufficient to raise levels of the thyroid hormone free thyroxine to the upper half of the reference range.

- Growth hormone stimulation testing should be used to diagnose patients with suspected growth hormone deficiency.
- People who have proven cases of growth hormone deficiency and no contraindications should be offered growth hormone replacement as a treatment option.
- Premenopausal women who have central hypogonadism, a condition where the sex glands produce minimal amounts or no hormones, can undergo hormone treatment, provided there are no contraindications.
- People producing abnormally large volumes of dilute urine should be tested for central diabetes insipidus—a rare condition that leads to frequent urination—by analyzing the concentration of their blood and urine.
- For patients who have low levels of glucocorticoid hormones, hydrocortisone can be given in a daily single or divided dose.
- All hypopituitarism patients should be instructed to obtain an emergency card, bracelet or necklace warning about the possibility of adrenal insufficiency.
- Patients who are suspected of having an adrenal crisis due to secondary adrenal insufficiency should receive an immediate injection of 50 to 100 milligrams of hydrocortisone.
- People who have central adrenal insufficiency should receive the lowest tolerable dose of hydrocortisone replacement on a long-term basis to reduce the risk of metabolic and cardiovascular disease.

The Hormone Health Network offers resources on hypopituitarism at http://www.hormone.org/diseases-and-conditions/pituitary/hypopituitarism.

Other members of the Endocrine Society task force that developed this

guideline include: Ibrahim A. Hashim of UT Southwestern Medical Center in Dallas, TX; Niki Karavitaki of the University of Birmingham and Birmingham Health Partners in Birmingham, U.K.; Shlomo Melmed of Cedars-Sinai Medical Center in Los Angeles, CA; M. Hassan Murad of the Mayo Clinic in Rochester, MN; Roberto Salvatori of Johns Hopkins University School of Medicine in Baltimore, MD; and Mary H. Samuels of Oregon Health & Science University in Portland, OR.

The Society established the Clinical Practice Guideline Program to provide endocrinologists and other clinicians with evidence-based recommendations in the diagnosis, treatment, and management of endocrine-related conditions. Each guideline is created by a task force of topic-related experts in the field. Task forces rely on evidence-based reviews of the literature in the development of guideline recommendations. The Endocrine Society does not solicit or accept corporate support for its guidelines. All Clinical Practice Guidelines are supported entirely by Society funds.

The Clinical Practice Guideline was co-sponsored by the American Association for Clinical Chemistry, The Pituitary Society and the European Society of Endocrinology.

The guideline will be published online at http://press.endocrine.org/doi/10.1210/jc.2016-2118, ahead of print.

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