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Endocrinology & Metabolic Syndrome

Commentary

Hypopituitarism: A Higher Rate of Metabolic Syndrome

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DESCRIPTION

Unrelated Growth Hormone (GH) deficiency and insufficient replacement of other hormone deficiencies may be to blame for the unfavourable body composition and metabolic profile associated with hypopituitarism, as well as obesity, visceral adiposity, dyslipidaemia, insulin resistance, and hypertension. Other, less common, causes of hypopituitarism have recently been thoroughly investigated. When there are hormonal shortages (luteinizing hormone and follicle stimulating hormones), GH loss is typically followed by a loss of gonadotropins. The vast majority of hypopituitarism patients have Multiple Pituitary Hormone Deficiencies (MPHDs), typically affecting more than two or three axes.

Hypopituitarism is a dynamic variable that may be permanent and progressive with a sequential pattern of hormone deficiencies or transient with a potential recovery occurring years after the initial event. Retesting, proper replacement, and longitudinal follow-up are critical. The current definition of metabolic syndrome includes a number of cardio metabolic risk factors, such as obesity, a large waist circumference (visceral obesity), dyslipidaemia, arterial hypertension, poor glucose tolerance with insulin resistance, and obesity in the general population, all of which are frequently linked to cardiovascular illnesses, type 2 diabetes, and obesity.

It's worth noting that hypopituitarism is associated with a 20-50 percent higher prevalence of Mets than the general population. Mets was assessed using the NCEP-ATP III criteria, which were published in 2001, in a number of studies looking at the prevalence of MetS in hypopituitarism patients. MetS is defined as having three or more of the following characteristics. Fasting Blood Pressure (BP) >130/85, fasting plasma glucose >6.1 mmoUL, triglycerides >1.69 mmoUL, HDL 1.04 mmol/L in men and 1.29 mmoUL in women, mm Body Mass Index (BMI) >30, and waist circumference (>102 cm in men and >88 cm in women). Hypopituitarism eliminates the natural survival advantage that women have over men.

The most common causes of death in hypopituitarism patients are cardiovascular and cerebrovascular, which are linked to the underlying MetS and treatment methods. The highest mortality rate after cranial irradiation is among younger patients, women, and diabetic patients. It is currently unknown whether cranial irradiation affects central regulation of metabolism, which could theoretically independently affect the metabolic profile of these patients. Previously, conventional sequential radiotherapy was linked to post-irradiation vasculopathy and an increased risk of cerebrovascular complications.

Transcranial surgery, the aetiology, and the presence of diabetes insipidus clinical efforts were made to define and replace GHD in adults as the primary cause of MetS phenotype and increased vascular risk in these patients after the first data on excess mortality from cardio-vascular causes in adult patients with hypopituitarism receiving conventional replacement without GH therapy. Data on cerebrovascular events five years after GH replacement showed that elevated mortality rates persisted 1141 GH replacement appeared to offer protection from myocardial infarction. Adult patients with crania pharyngeoma appeared to respond to GH treatment as well as patients with Non-functioning Pituitary Adenoma (NFPA), but were less likely to lose body fat despite improvements. There is still a lack of information on the prevalence of diabetes mellitus in GH-treated versus untreated patients with adult-onset hypopituitarism.

The findings of long-term safety surveillance studies from large databases are debatable, with reports of improvements, neutral effects, or even adverse effects on glucose tolerance and metabolism with an increase in the prevalence of diabetes in female patients and hypopituitary patients with MetS. Few studies have looked at how alternative replacement therapy with glucocorticoids, thyroxin (T4), and sex steroids affects MetS characteristics and mortality rates in hypopituitarism patients. Until now, some hormone replacement regimens, such as overzealous replacement with hydrocortisone (HC), insufficient replacement of T4, unrelated hypogonadism, or the use of oral contraceptives for female hormone replacement, were thought to be harmful.

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