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PITUITARY DISEASE

Inflammation in patients with Cushing disease

Circulating levels of proinflammatory cytokines are increased in patients with Cushing disease, both during active disease and after remission, according to new data published in *Clinical Endocrinology*.

Glucocorticoids (which are elevated in patients with Cushing disease) are known to have anti-inflammatory properties. Despite these effects, patients with Cushing disease often have obesity, insulin resistance and cardiovascular disease, which are all associated with inflammation. Furthermore, patients with Cushing disease have an increased risk of cardiovascular-related death, even after remission. Previous studies investigating these phenomena have been inconclusive. This study, led by Eliza Geer from the Icahn School of Medicine at Mount Sinai, USA, was designed to investigate inflammation in patients with Cushing disease.

Geer and colleagues enrolled 31 patients with Cushing disease and 18 control individuals who were matched for BMI. Plasma levels of the proinflammatory cytokines IL-6, IL-1β, TNF, IL-8, IL-17 and IL-10 were measured at enrolment and 19.5 ± 12.9 months after surgical remission. At baseline, patients with Cushing disease had higher plasma levels of IL-6 and IL-1β than BMI-matched controls. After surgical remission of Cushing disease, patients achieved decreased BMI, insulin resistance and levels of visceral, hepatic and intermuscular fat. Despite these metabolic improvements, plasma levels of IL-6 and IL-1β remained elevated.

These findings demonstrate that cytokine levels are increased in patients after remission of Cushing disease, which could explain the persistent increased risk of cardiovascular-related death. The authors note that more studies are needed to determine why levels of IL-6 and IL-1β remain elevated after remission of Cushing disease.

Claire Greenhill

ORIGINAL ARTICLE Shah, N. *et al.* Pro-inflammatory cytokines remain elevated despite long-term remission in Cushing's disease: a prospective study. *Clin. Endocrinol. (Oxf.)* http://dx.doi.org/10.1111/cen.13230 (2016)