

 THERAPY

# Once-weekly growth hormone

A modified form of growth hormone that can be administered once a week is safe and effective in adults with growth hormone deficiency, according to the results of a phase II trial.

Currently, growth hormone replacement therapy consists of daily subcutaneous injections of recombinant human growth hormone. However, this regimen has poor compliance, which has a negative effect on the overall health of patients with growth hormone deficiency. A key focus of research in this area, therefore, is the development of longer-acting forms of growth hormone that do not require daily injection.

An international team of researchers has developed a C-terminal peptide-modified growth hormone (MOD-4023). The C-terminal

peptide moiety is derived from a natural peptide — the C terminus of human chorionic gonadotropin — so should be less immunogenic than other moieties. Previous work in animal models showed that MOD-4023 has a longer half-life than recombinant human growth hormone and a phase I study demonstrated that it has a good safety profile.

In the phase II trial, 54 adults with growth hormone deficiency were randomly assigned to receive four weekly doses of MOD-4023 equivalent to 18.5%, 37%, 55.5% or 123.4% of their own optimized, weekly cumulative molar recombinant human growth hormone dose. The researchers report that MOD-4023 was clinically effective, well tolerated and had a favourable safety profile. Indeed, all reported

adverse effects were similar to those that are known to occur with growth hormone therapy.

“MOD-4023 is a long-acting growth hormone that works and can be effective and safe as a weekly drug,” concludes corresponding author Gili Hart. “We have just completed a phase III study, and analysis is ongoing.” The investigators hope that weekly injections will improve compliance and overall outcomes.

Claire Greenhill

**ORIGINAL ARTICLE** Strasburger, C. J. *et al.* MOD-4023, a long-acting carboxy-terminal peptide (CTP)-modified human growth hormone: results of a phase 2 study in growth hormone-deficient adults. *Eur. J. Endocrinol.* <http://dx.doi.org/10.1530/EJE-16-0748> (2016)

**FURTHER READING** Kargi, A. Y. & Merriam, G. R. Diagnosis and treatment of growth hormone deficiency in adults. *Nat. Rev. Endocrinol.* **9**, 335–345 (2013)