

 REPRODUCTIVE ENDOCRINOLOGY

# New treatment protocol for hypogonadotropic hypogonadism

Testosterone treatment in boys with hypogonadotropic hypogonadism induces linear growth, virility and psychosexual maturation, but does not stimulate testicular enlargement or spermatogenesis. However, in a new study, investigators have developed a protocol using human chorionic gonadotropin (hCG) and recombinant follicle-stimulating hormone (rFSH) to induce testicular growth, spermatogenesis and enhanced quality of life.

The team recruited boys with hypogonadotropic hypogonadism who were prepubescent or with early arrested puberty (group A;  $n = 27$ ); or adolescents who had

previously received testosterone therapy (group B;  $n = 27$ ). Patients first received hCG before moving to a combination of hCG and rFSH.

The investigators found that hCG and rFSH increased testicular volume from  $5 \pm 5$  ml to  $34 \pm 3$  ml in group A and  $5 \pm 3$  ml to  $32 \pm 3$  ml in group B. Sperm was found in 91% and 95%, with normal sperm concentration ( $\geq 15$  million sperm per ml) seen in 61% and 34% of patients in group A and B, respectively. Health-related quality of life scores also increased from baseline in both groups of patients. Importantly, these results were achieved regardless of any previous treatment with testosterone.

The investigators hope that hCG and rFSH administration can reduce the costs and duration of treatment, as well as the anxiety that is associated with late onset of fertility. Importantly, the protocol the team developed provides an alternative treatment to simple testosterone for endocrinologists treating hypogonadotropic hypogonadism in boys.

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**ORIGINAL ARTICLE** Rohayem, J. *et al.* Testicular growth and spermatogenesis: new goals for pubertal hormone replacement in boys with hypogonadotropic hypogonadism? A multicentre prospective study of hCG/rFSH treatment outcomes during adolescence. *Clin. Endocrinol. (Oxf.)* <http://dx.doi.org/10.1111/cen.13164> (2016)