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INVITED COMMENTARY

Male Fertility

The importance of understanding baseline reproductive function prior to the administration of exogenous testosterone

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Recent increases in the awareness of hypogonadism as a clinical condition have led to more men being managed with testosterone supplementation therapy (TST). While highly effective at raising serum testosterone levels and controlling the symptoms of hypogonadism such as fatigue and low energy,¹ the resultant suppression of the hypothalamic-pituitary-gonadal axis can lead to an inhibition of gonadotropins, including follicle-stimulating hormone (FSH) and luteinizing hormone (LH) and subsequent azoospermia.

In the article of McBride and Coward,² they review the physiology behind this phenomenon and describe numerous clinical approaches on how to restore spermatogenesis following TST. Given that 12.4% of all testosterone prescriptions occur in men under 40 years of age,³ an awareness of this potential negative side effect cannot be overemphasized. Indeed, physicians need to be made aware that other options exist to treat hypogonadism in men who concurrently desire fertility. These options include oral medications such as clomiphene citrate and Arimidex as well as injectable options such as human chorionic gonadotropin. Combinations of these medications can also be used and titrated to attain optimized serum hormone levels. If physicians are uncomfortable using these medications, then referral could be considered to an andrologist well versed in the administration of each.

If a clinical decision has been made to commence exogenous TST in a male of reproductive age, then current and future fertility should

be discussed prior to dispensation. At present, no standards exist on how to best manage this type of a situation clinically.

It is advised that prior to initiation of TST, baseline reproductive function should be assessed. All men should be given the option of obtaining a semen analysis and serum FSH level before starting exogenous testosterone. Coupled with a focused genital examination and documentation of testicular size, this approach has numerous potential benefits. First, it acts as a reference point for reproductive potential and may uncover unsuspected occult azoospermia or compromised reproductive capacity before the potential side effects of testosterone are manifested. Physical examination can also identify other potential causes for hypogonadism including varicocele and resultant testicular atrophy.⁴ While controversial, varicocele repair could then be offered as a “natural” way to improve native testosterone levels and prevent further testicular damage. Pretreatment semen analysis values can also serve as target levels for the resolution of post-TST spermatogenic dysfunction.

This approach offers a combination of vigilance, physical examination, and laboratory monitoring that virtually eliminates the uncertainty of determining whether a man’s compromised testicular function was innate, or due to exogenous testosterone supplementation.

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