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Transdermal Testosterone

A Viewpoint by A. Wayne Meikle

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A general principle when using hormone replacement therapy is to mimic normal physiology, which avoids unnaturally high or low blood levels of a hormone. However, with short-acting hormones such as testosterone that have active metabolites and a circadian variation in secretion, mimicking normal physiology has been a challenge with currently available therapies.

The nonscrotal testosterone patch has overcome many limitations of previous androgen therapies. When the patch is applied in the evening to the back, abdomen, upper arm or thigh, serum testosterone concentrations mimic patterns observed in younger men. In addition, supraphysiological levels of testosterone observed with intramuscular injections are avoided. Dihydrotestosterone and estradiol are potent metabolites of testosterone; after nonscrotal testosterone delivery they exhibit patterns similar to those of healthy men (which contrasts with the elevated dihydrotestosterone levels observed after application of the scrotal testosterone patch).

The nonscrotal system corrects hypogonadal symptoms and erectile dysfunction without adversely influencing prostate growth or lipid profiles beyond those expected in men of comparable age. However, skin irritation and itching requiring management occur in about 10% of patients. Pretreatment of the application site with a 0.1% triamcinolone acetonide cream has recently been shown to reduce skin irritation and to allow continued use of the systems without the threat of affecting the hypothalamic-pituitary-adrenal axis.

In summary, the nonscrotal transdermal testosterone patch is a well tolerated system which produces near physiological testosterone levels in hypogonadal men. ▲