

Treatment of hypogonadal adolescent boys with long acting subcutaneous testosterone pellets

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Abstract

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AIMS—Long acting subcutaneous testosterone pellets are of proved efficacy for the treatment of hypogonadal men, but have not been reported as a treatment modality in adolescent boys. Pharmacodynamic studies of subcutaneous testosterone release have shown prolonged normalisation of testosterone levels for at least four months. Administration of a long acting, safe, effective, and convenient form of treatment is desirable when life- long treatment is indicated.

PATIENTS AND METHODS—Eighteen boys (aged 13.9-17.5 years at the start of treatment)—seven with primary hypogonadism, nine with secondary hypogonadism, and two boys being treated with testosterone for tall stature—were given testosterone pellets (8-10 mg/kg) every six months for 18months. Height, weight, pubertal status, and psychosocial parameters were assessed and follicle stimulating hormone, luteinising hormone, testosterone, prolactin, and lipids were measured at 0, 1, 3,6, 12, and 18 months. Bone age was measured at 0 and 12months.

RESULTS—In all boys growth velocity continued appropriately for bone age. Puberty continued to progress in all boys and in two boys the amount of virilisation exceeded that seen with previous treatment with intramuscular testosterone. After testosterone administration, follicle stimulating hormone and luteinising hormone suppressed incompletely in the boys with primary hypogonadism. Serum testosterone ranged from 4.3 to 26.7 nmol/l at three months to less than 10nmol/l at six months after implantation. Prolactin and lipid levels were normal throughout the study. By report, there was an improvement in mood and emotional wellbeing. No pellet extrusions occurred in a total of 156 pellet insertions.

CONCLUSIONS—All boys preferred this mode of testosterone administration to intramuscular injections. Long acting subcutaneous testosterone pellets are safe, efficacious, well tolerated, and convenient, and result in normal physical growth and improved psychological outlook in adolescent hypogonadal boys.

- Continued normal progress of growth and pubertal status occurs with subcutaneous testosterone
- Prolonged stable physiological levels of testosterone are maintained for four to six months
- Bone age advance is commensurate with change in chronological age
- Psychological outlook and self image are reported to be improved
- Subcutaneous testosterone is safe, well tolerated, efficacious, and convenient

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