

produced estrogens by aromatization. Third generation aromatase inhibitors (AIs) are used as an off-label treatment to improve predicted adult height (PAH) in boys as well as in girls, either as monotherapy or in combination with growth hormone and/or puberty inhibition. They induce reverse binding inhibiting the activity of aromatase (a cytochrome P450 enzyme), which catalyzes the conversion of androstenedione and testosterone to estrone and estradiol, respectively, resulting in a substantial increase of the circulating testosterone concentrations. **Aims:** To compare the traditional treatment of isolated - idiopathic - relative micropenis in boys with testosterone enanthate monotherapy to its combination with anastrozole 1 mg×1 p. o. **Methods:** 164 boys with micropenis (stretched penile length \leq -2 SD) received testosterone enanthate 100 mg/m² I. M. /month either as monotherapy (n=63, mean age 10.8 yrs, group A) or in combination with anastrozole 1 mg/day (n=101, mean age 11 yrs, group B) for 3 months. Stretched penile length, bone maturation and auxological data were analyzed. All measurements were performed by the same examiner. The choice of therapeutic intervention was made randomly. Groups A and B did not differ in terms of age at intervention onset, bone age, target height or predicted adult height. They underwent a 6-month follow-up that included clinical examination, bone age X-ray evaluated by BoneXpert ver. 3.2. 0 (Visiana, Denmark), and laboratory tests at 8:00hrs (LH, FSH, testosterone, estradiol, estrone), prior and under treatment. **Results:** In both groups penile length normalized: for group A gain was +1.9 cm (+2.08 SD) and for group B +2.24 cm (+2.3 SD), with group B attaining a greater length by +18% (p=0.004) due to the higher testosterone concentrations attained by at least 50%. Group A presented a slight acceleration of height velocity with parallel advancement of their bone age maturation while group B with unchanged or lower estradiol and estrone concentrations maintained their height velocity with parallel movement of their bone age maturation. **Conclusions:** Addition of anastrozole 1 mg/day p. o. in testosterone enanthate treatment for idiopathic-isolated-relative micropenis at the beginning of puberty significantly improves penile length by almost 20% while the tempo of height velocity and bone maturation continue their previous track.

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The Addition Of Anastrozole To Standard Testosterone Enanthate Treatment Significantly Improves Penile Size In Adolescent Boys With Micropenis

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Background: Micropenis is treated preferably in infancy (\leq 2 yrs) or at the onset of puberty, usually with 3 (2-4) monthly testosterone enanthate I. M. injections at the dose of 100 mg/m². This short-term therapy may temporarily advance bone maturation but with a concomitant increase in height velocity and no apparent change in predicted adult height. Bone maturation depends on locally