

Effect of aromatase inhibitor treatment during adolescence on the final adult height in males with idiopathic short stature

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Background:

Aromatase inhibitors (AIS) can block the conversion of androgens to estrogens, thus can be used to delay bone maturation in males, however, the effect on improvement of final adult height (FAH) is still controversial.

Objective and hypotheses:

A prospective study was performed to evaluate the effect of letrozole used on the FAH in males with idiopathic short stature (ISS).

Methods:

55 boys with ISS and had entered puberty were separated into 3 groups: group 1 (N=22), received letrozole 1.5~2mg/m².d, for (2.11±0.66) yrs. Group 2 (N=20), GnRHa for (2.00±0.54) yrs. Group 3 (N=15), without interventions.

Results:

1. Height velocity (HV) in the first 6 months, second 6 months, third 6 months separately during therapy were (8.35±1.70)cm/y, (7.42±1.92)cm/y, (6.23±2.08)cm/y, respectively in group 1, significantly more than that in group 2: (7.20±1.77)cm/y, (4.75±1.42)cm/y, (4.37±1.01)cm/y, (p=0.04, p<0.01, p<0.01).
2. Δ BA/ Δ CA during the first year and the second year were (0.67±0.09) and (0.50±0.15) in group 1 respectively, more than that in group 2: (0.61±0.16) and (0.44±0.33) respectively, (p=0.04, p=0.05). But no significant differences of Δ HtSDSBA were found between group 1 and group 2, (0.96±0.48) vs (0.62±0.61) (p>0.05).
3. FAH in group 1 and group 2 had no differences: (170.27±4.28)cm vs (168.55±5.60)cm (p>0.05), but higher than predicted AH before treatment (161.25±2.50cm, 162.33±3.33cm) and FAH in group 3 (161.96±3.57) cm (p<0.01).
4. During letrozole therapy, LDL decreased slightly: (1.49±0.23)mmol/L vs (1.71±0.40) mmol/L (p<0.01), however, no significant changes of TG, LDL, HOMA-IR were found.

Conclusion:

Long term letrozole therapy during puberty in male with idiopathic short stature can delay bone maturation without obviously decrease of linear growth, and thus can improve the final adult height.

References

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