

ANASTROZOL

ANASTROZOLE IMPROVES HEIGHT PREDICTION AND NEAR FINAL HEIGHT AS MONOTHERAPY OR IN COMBINATION WITH GROWTH HORMONE.

INTRODUCTION

The wide aromatization of androgens during puberty is responsible for the rapid bone maturation at this age. In this context, the use of aromatase inhibitors (AIs) has been justified by the potential to slow down the advancement of bone age and thus improve growth. For more than two decades, studies have pointed out the validity of AIs to improve the predicted final height (PFH). However, data on near-adult height (NFH) of children treated with AIs are scarce.

OBJECTIVE

This study aimed to evaluate the PFH and NFH of boys treated with anastrozole (ANZ) either as monotherapy or in combination with Growth Hormone (GH).

METHODOLOGY

Seventy-five boys presenting with PFH below the family target height (TH) between 11 and 18 years old received either ANZ as monotherapy or in combination with GH for at least 12 months. Measurements were made on the same height meter by the same examiner. The follow-up included clinical examination performed by the same examiner, laboratory tests (general blood count, glucose, lipid chart, LH, FSH, testosterone, estradiol), and bone X-ray. The calculation of the Final Height Prediction (PEF) was performed using the Bayley Pinneau method.



RESULTS

1. Characterization of the clinical - therapeutic profile

	Groups			P
	ANZ N = 18	ANZ + GH N = 57	Total N = 75	
Age (months)	151.50 ± 19.17	159.18 ± 13.35	157.33 ± 15.17	0.06*
Weight (kg)	42.94 ± 6.69	41.35 ± 6.20	41.73 ± 6.31	0.35*
Height (cm)	151.19 ± 5.61	147.37 ± 13.94	148.29 ± 12.53	0.26*
Treatment time				
1 year	12 (66.7) †	17 (29.8)	29 (38.7)	
2 years	3 (16.7)	27 (47.4) †	30 (40.0)	0.02**
3 years	3 (16.7)	13 (22.8)	16 (21.3)	

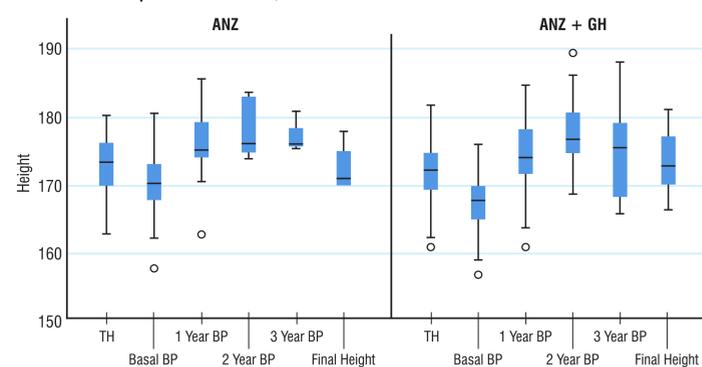
*Test t of Student (Mean and standard deviation); **Qui-square of Pearson;
†Posthoc; n = absolute frequency; % = relative frequency

2. Comparison of TH, basal PEF and height reached (in cm)

Group	TH	PFH Basal	PFH 1 year	PFH 2 years	PFH 3 years	NFH	p*
ANZ	172.33 ± 4.92	170.05 ± 5.48	175.78 ± 5.42	177.65 ± 4.35	177.20 ± 3.05	172.72 ± 3.42	<0.001
ANZ+GH	171.25 ± 4.68	167.19 ± 4.45	174.01 ± 5.15	177.46 ± 4.76	174.63 ± 7.34	173.45 ± 4.08	<0.001
Total	171.51 ± 4.73	167.87 ± 4.83	174.44 ± 5.23	177.48 ± 4.66	175.11 ± 6.74	173.32 ± 3.91	<0.001

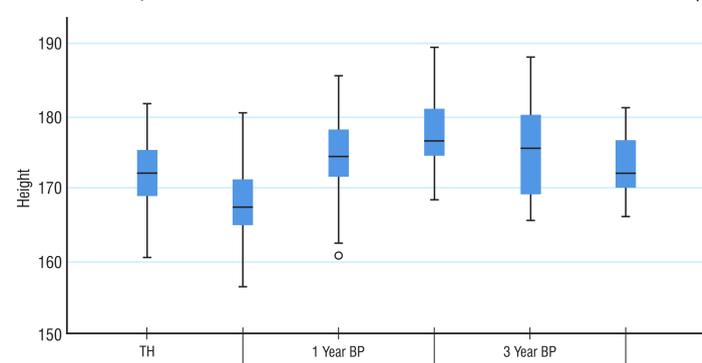
*Friedman Test
Legend: TH - Target Height; PFH - Predicted Final Height; NFH - Near Final Height

1. Comparison of TH, PFH at different treatment time and NFH



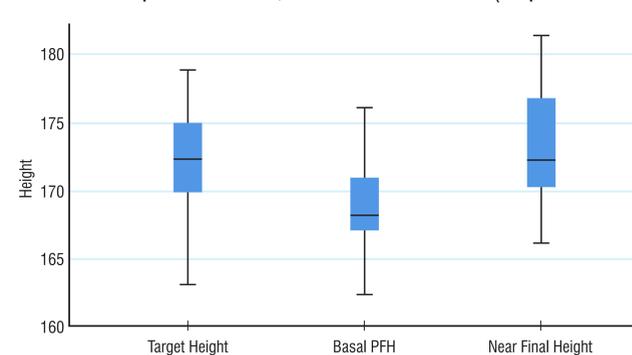
TH = Target Height
BP = Predicted Final Height according to Bayley & Pinneau

2. Comparison of TH, PFH at different treatment time and NFH (all patients)

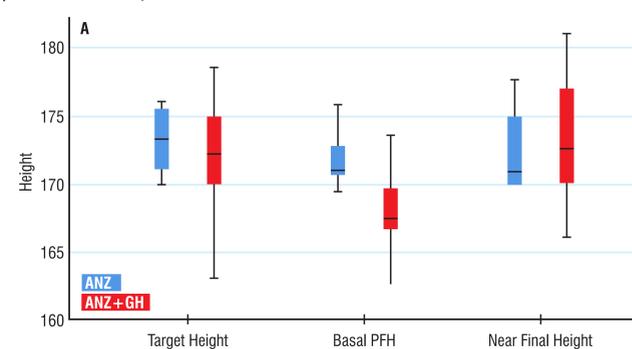


TH = Target Height
BP = Predicted Final Height according to Bayley & Pinneau

3. Comparison of TH, Basal PFH and NFH (all patients N=27)



4. Comparison of TH, Basal PFH and NFH



4. Comparison of TH, baseline PFH and NFH in the sub-group that reached NFH (n=27)

	TH	Basal PFH	NFH	p*
ANZ (N= 5)	173.10 2.66	171.90 2.50	172.72 3.42	0.80
ANZ+GH (n=22)	171.87 4.14	167.90 3.21	173.45 4.08	0.01
Total	172.10 3.89	168.64 3.44	173.32 3.91	<0.001

*Friedman Test
Legend: TH - Target Height; PFH - Predicted Final Height; NFH - Near Final Height

5. Difference of Near Final Height (cm) compared to TH and basal PFH (Real Stature Gain)

	TH	Basal PFH	p*
ANZ (N= 5)	-0.38	0.82	0.80
ANZ+GH (N=22)	1.58	5.55	0.01
Total (N= 27)	1.22	4.68	<0.001

*Friedman Test
Legend: TH - Target Height; PFH - Predicted Final Height; NFH - Near Final Height

CONCLUSION

Anastrozole therapy was safe and effective in improving the PFH and NFH in boys with poor height prediction, either as monotherapy or in combination with growth hormone.

Keywords: adolescents, aromatase inhibitors, anastrozole, short stature.

PARTICIPANTS

Advisor:
Prof. Dra. Renata Machado Pinto

Students: Débora Ribeiro de Almeida
Students: João Vitor Percussor Silva

