

Does the initiation of estrogen therapy time affect final height and late metabolic outcomes in Turner syndrome?



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Aim

The aim of the study is to compare final height and late metabolic outcomes depending on estrogen (E) replacement initiation (I) in Turner syndrome (TS).

Subjects: women with TS over 18 years, retrospectively treated with growth hormone (GH) and E were enrolled into the study.

METHODS

Records of 117 women with TS from database of Hospital of Lithuanian University of Health Sciences were analyzed.

71 did not matched the inclusion criteria.

46 patients with TS were enrolled into study.

Early E group (eE) – EI before 15 yrs (n=27, EI at a median of 13 yrs, range from 13 to 14 yrs).

Delayed E group (dE) – EI ≥ 15 yrs (n=19, 16-18 yrs). EI at a median of 16 yrs, range

Final height, height gain, body mass index, carbohydrate metabolism disorders, blood pressure, bone density were compared between the groups. Statistical analysis was performed using SPSS 22.0 statistical package. Due to low sample size, nonparametric criteria were used in the analysis. Data was considered as statistically significant at a confidence level of $p < 0,05$.

RESULTS

	eE group (n=27)	dE group (n=19)	p	Correlation (Spearman's) to EI
Median age at the measurement time (yrs)	24 (range 18-33)	31 (range 18-41)	$p < 0,001$	-
Median age at EI (yrs)	13 (range 11-14)	16 (range 15-19)	$p < 0,001$	-
GH treatment started at age (yrs)	11 (range 9-12)	15 (range 9,25-16,75).	$p = 0,005$	-
Final height (cm)	153 (range 148-156)	152 (range 147 to 155)	$p = 0,655$	$r = (-) 0,26, p = 0,081$
Height before EI (SDS)	-2,26 SDS	-2,90 SDS	$p = 0,055$	$r = (-) 0,44, p = 0,004$
Height gain (cm)	11 (range 7,1-15)	5,25 (range 2,5-8,1)	$p < 0,05$	$r = (-) 0,67, p < 0,001$
Body mass index kg/m^2	23,7 (range 17-35)	23,9 (16-36)	$p = 0,78$	$r = 0,21, p = 0,891$
Systolic blood pressure (mmHg)	120 (range 90-140)	120 (range 100-130)	$p = 0,435$	$r = 0,11, p = 0,465$
Diastolic blood pressure (mmHg)	70 (range 54-100)	80 (range 60-90)	$p = 0,197$	$r = 0,117, p = 0,39$
Prevalence of Carbohydrate metabolism disorders	5 %	10 %	$p = 0,247$	Contingency Coefficient = 0,18, $p = 0,381$
Prevalence of osteopenia	22%	31%	$p = 0,178$	Contingency Coefficient = 0,247, $p = 0,178$

CONCLUSIONS

Puberty induction at a physiological age does not have negative effect on final height in TS patients, providing earlier start of E treatment. No relation between E initiation time and metabolic parameters during later life span had been found.

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