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Comparison of estrogen induced breast development in girls with hyper- or hypo-gonadotrophic hypogonadism.

Breast growth induced by estrogen (and progesteron) administered for 0.5-4 yrs, was evaluated in girls aged 11-22 yrs belonging to 4 clinical entities.

Gr. A. Gonadal dysgenesis (GD), n=29. Primary ovarian failure, high gonadotrophins (Gn), normal hypothalamo-pituitary function (H-P-f).

Gr. B. Isolated Gn deficiency (IGnD), n=7. LH-RH deficiency (def.) low PRL, other H-P-f normal.

Gr. C. Multiple pituitary hormone def. (MPHD), n=8. Def. of Gn and hGH with or without TSH def., low PRL, normal H-P-adrenal axis.

Gr. D. 17-alpha-hydroxylase def. (17 OHD), n=1. Low cortisol and estrogens, high ACTH and Gn.

In GD the treatment led to full development of secondary sex characteristics. In IGnD, MPHD and 17 OHD breast development was incomplete. It is concluded that gonadotrophin plays a role in breast development but the mechanism remains to be clarified. It is proposed that in IGnD or MPHD a more physiologic approach to therapy be designed, possibly including also gonadotrophins.

108 S.ZABRANSKY*, E.CUNOW (intr. by ZACHMANN) UNIVERSITÄTSKINDERKLINIK, D-6650 HOMBURG ONE MICROGRAM TRH PER KILOGRAM (B.W.) GIVEN i.v. IS THE OPTIMAL TESTDOSAGE IN CHILDREN

A) With the consent of their parents, in 67 clinically euthyroid children (aged 2w-28m) blood was drawn before and 30' after i.v. application of several TRH-testdosages (RELEFACT TRH, HOECHST FRANKFURT): 0,5 ug, 1 ug, 1ug/kg, 200 ug. In a longitudinal study 7 children were tested with 1ug/kg, 2ug/kg and 200ug. Results: TSHΔ30'

group, n=	dosage	(mE/l)	(%, increase)	sign. diff.
I	10 0,5 ug	4,0±3,7	248±240	
II	14 1,0 ug	6,7±3,4	256±126	+ / +
III	16 1ug/kg	14,6±7,4	755±490	+ / +
IV	14 2ug/kg	17,8±7,9	735±402	+ / +
V	13 200ug	18,8±6,2	683±193	Ø / Ø

Results of the long. study are not sign. different. B) Testdosage 1 ug/kg, in 40 euthyroid children, aged 19m-20y: TSHΔ30' 9,5±4,1 mE/l or 580±230% increase. None negative Test.

Conclusions: The maximal TRH-induced TSH-secretion is age-dependent. In children beyond 2 years we find higher levels. The optimal TRH-dosage in children and adolescents is 1ug/kg i.v. There was none nonresponder. Stimulation with a higher dosage gives no more information, if we want to know, whether the pituitary-thyroid-axis is intact, the TSH-secretion is suppressed, or absent.