

LEVOTHYROXINE REQUIREMENT IN CONGENITAL HYPOTHYROIDISM: 12-YEAR LONGITUDINAL STUDY

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Background

The replacement therapy with Levo-Thyroxine (LT4) in Congenital Hypothyroidism (CH) aims to ensure normal growth and neuropsychological development. Few data are available about the appropriate dose during childhood and early adolescence.

Objective and hypotheses

We performed a multicenter observational study in a large sample of patients with congenital hypothyroidism

1. to evaluate LT4/kg/day requirement from diagnosis until 12 years of age
2. to assess any differences in relation to the different etiology of CH as concerns the LT4/kg/day requirement

Patients and Method

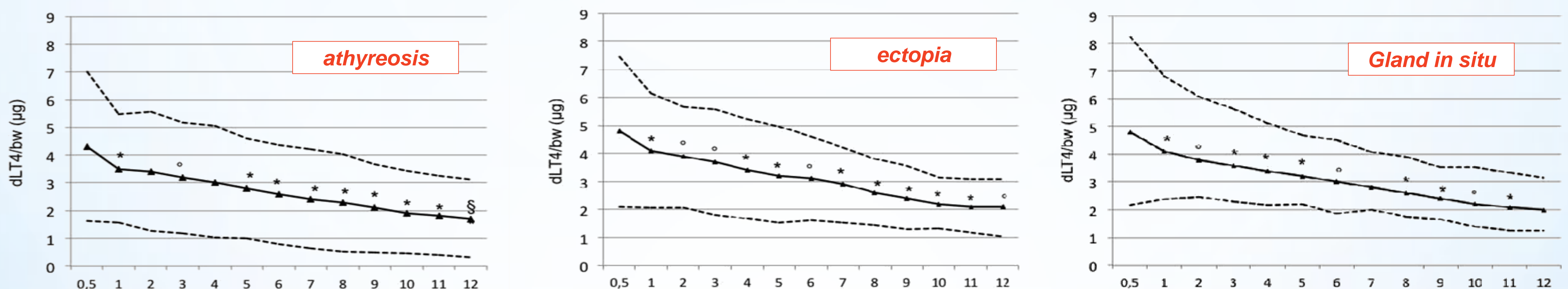
216 permanent CH pts (142 F) born between 1980 and 2001 → 56 pts athyreosis (25.9%)
 101 pts ectopia (46.8%)
 59 pts in situ gland (27.3%)

Age at diagnosis: 23.2 ± 12.0 days,

Starting LT4 dose: 9.1 ± 2.7 (5.0-18.4) µg/kg/day.

LT4 dose was assessed at 6 and 12 months and then yearly until 12 years of age and the LT4/kg/day calculated

Results



- ✓ The LT4/kg/day requirement at 6 months of age was correlated with the requirement at each later time point.
- ✓ The LT4/kg/day dose was modified less frequently in patients with in situ thyroid (40.5%) than in patients with ectopic gland (47.4%) or with athyreosis (48.9%).

	0,5 y	1 y	2 y	3 y	4 y	5 y	6 y	7 y	8 y	9 y	10 y	11 y	12 y
In situ gland vs ectopia		0.002	0.013	0.003	0.02	0.003	<0.001	<0.001	0.006	0.003	0.008	0.003	0.001
In situ gland vs athyreosis	0.002	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Athyreosis vs ectopia		0.018	0.04								0.038		

The LT4/kg/day requirement on the basis of etiology

Conclusions

- ✓ Euthyroidism may be achieved by 3-4 and 2-3 mcg/kg/day of LT4 in preschool and in school CH patients.
- ✓ The patients with in situ gland require a lower dose than the other ones. The patients with ectopia or athyreosis require more frequently a change in the daily dose, and thus such patients have to be followed up more frequently.
- ✓ The dose at 6 months seems to be predictive of future requirements.

Disclosure Statement: Authors declare no conflict of interest related to this work.