

Surveillance of transient congenital hypothyroidism using the French newborn screening programme

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Introduction:

Congenital hypothyroidism (CH) is a condition of thyroid hormone deficiency present at birth. Untreated CH results in severe mental impairment. An increased incidence of CH has been reported in France and worldwide that could be explained by an increase in transient forms of CH (TCH). We aimed to estimate the proportion of transient eutopic gland based on the characteristics of children at birth.

Methods:

A probabilistic matching data from French CH neonatal screening program and French national health data system (SNDS) of children born between 2006 and 2012 (1, 763 with CH) allowed to linking 484 (68.8%) among 703 children with eutopic gland. Infants with six months or greater discontinuation of levothyroxine (LT4) treatment before the 31st December 2017 were classified transient CH. We used the Cox model to examine the predictors of TCH.

Results:

Among infants with eutopic gland, 52.9% were female, 14.9% were preterm and 14, 1 % had low birth weight, 11.8 % had a first degree family history of thyroid diseases, 48.1% of mild CH (TSH<50mU/L) at diagnosis and 30,0µg/j median dose of LT4 treatment. The probability of transient CH at five years of follow-up was 25.3% [IC95%:21.6% -29.4%] and 36.7% [31.7% -42.2%] after ten years. In a cox multivariable analysis, neonates with a TSH<50mU/L (adjusted Hazard Ratio = 4.1

[2.8-6.2]) and preterm 1.9 [1.1-3.4] had more risk to be transient.

Conclusions:

Prematurity and TSH level were predictors of transient CH. Additional analyses are ongoing to determine whether the occurrence of transient forms of TCH is increasing over the study period.

Key messages:

- Transient congenital hypothyroidism represent a significant part of HC at 10 years of follow-up.
- This finding has important implication on medical practices and should trigger research on the etiology of these transient forms.