PREVALENCE OF CONGENITAL HYPOTHYROIDISM & THYROID FUNCTION FOLLOW-UP OF CHILDREN WITH b-TSH BETWEEN 5 AND 10 mU/L IN NEONATAL SCREENING

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OBJECTIVE:
TO DETERMINE CH PREVALENCE - DRY BLOODSPOT TSH (b-TSH) BETWEEN 5 AND 10
TO EVALUATE THYROID FUNCTION EVOLUTION

METHODS:
RETROSPECTIVE STUDY / 2003 TO 2010 / b-TSH BETWEEN 5 AND 10
b-THS > 5 => SERUM TSH AND f-T4 => s-TSH BETWEEN 5 AND 10 => FOLLOW-UP TO 2 YEARS

CH => BETWEEN 2 – 3 Y => T4 WITHDRAWAL TO CONFIRM CH

PREVALENCE:
● TOTAL GROUP => CH
● GROUP HEALTHY AT TERM + FOLLOW UP ≥ 6M (T4 WITHDRAWAL) => PERMANENT CH

PERMANENT CH => THYROID SCINTIGRAPHY WITH TECHNETIUM-99M (99MTC) => ETIOLOGY

CH = s-TSH ≥ 10 + TREATMENT ≤ 2y / PCH = TSH ≥ 10 + TREATMENT AFTER T4 WITHDRAWAL

RESULTS:
380,741 SCREENED => 3,713 (1.0%) 5 < b-TSH < 10mU/l

CH => 339 (9.1%)

HEALTHY, AT TERM, FOLLOWED-UP 6M AFTER T4 WITHDRAWAL
N = 256
● MALES 152 X FEMALES 104

70 (27.3%) PERMANENT HYPOTHYROIDISM

=> 4 dysgenesis
  (2 hemiagenesis, 1 lobe hypoplasia, 1 gland hypoplasia)

=> 8 goitres

<table>
<thead>
<tr>
<th>Initial Evaluation</th>
<th>Permanent (n=70)</th>
<th>Transient (n=186)</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>b-TSH (µU/l)</td>
<td>6.32 (1.85)</td>
<td>6.39 (1.70)</td>
<td>0.811</td>
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<tr>
<td>s-TSH (µU/l)</td>
<td>10.52 (6.39)</td>
<td>11.67 (5.66)</td>
<td>0.172</td>
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<tr>
<td>f-T4 (ng/dl)</td>
<td>1.24 (0.34)</td>
<td>1.37 (0.28)</td>
<td>0.001</td>
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</tbody>
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f-T4 IN THE INITIAL NEONATAL EVALUATION => LOWER IN THE PCH GROUP

CH DIAGNOSIS AFTER 4M = 22.6%

PERMANENT HYPOTHYROIDISM AFTER 4 M WITHDRAWAL OF T4 = 25.7%

CONCLUSION:
The b-TSH screening-test cutoff of 5mU/l, along with clinical and laboratory follow-up allowed the early detection of 339 CH and 70 permanent hypothyroid children that would have been missed if the current b-TSH cutoff of 10mU/l was used and that could be a delay to the development of the hypothyroidism.

Considering that:
Almost 10% of children with b-TSH between 5 and 10 mU/l in neonatal screening would have CH => b-TSH cutoff to 5 mU/l

The delay of development of CH and PCH:
• the follow-up of children whose s-TSH were over the normal range in the first year
• the follow-up of children whose s-TSH were over the normal range for at least 6 months after T4 withdrawal

DISCLOSURE STATEMENT: nothing to declare.