Thyroid Dysfunction in the First Year of Life in Infants with Down syndrome: Linear Growth Over 4 Years.
Nada Al Aaraj, Ashraf Soliman, Maya Itani, Shayma Mohamed, Ahmed Khalil, Ashraf Adel. Pediatric department, Hamad General Hospital (HGH), Doha-Qatar

Introduction
Down syndrome (DS) is associated with thyroid dysfunction including both congenital and acquired hypothyroidism. Data about thyroid function in infants <1 year with DS is scarce.

We aim to study the prevalence of different thyroid dysfunctions and other associated disorders among infants with DS and it’s effect on linear growth and weight gain.

Methods
A retrospective cohort study of thyroid function in infants with DS (n= 47) (22 M, 25 F) (below 1 year, Mean age=0.5 +/-0.3), attended the general pediatric clinic at HGH. We followed up their linear growth and weight gain for an average of 4 years.

Results
Prevalence of thyroid dysfunction in infants with DS < 1 year of age

Discussion
• Infants with DS < 1 year of age had a high prevalence of thyroid dysfunction.
• Subclinical HT (TSH > 5 and normal FT4) is the most frequent thyroid abnormality.
• Both primary and secondary HT were found.
• Autoimmunity against thyroid was detected in 19 % of these young infants (early autoimmunity).
• Infants with TSH > 15 mIU/L had significantly lower BMI SDS and were non-significantly shorter than other groups (p= 0.03 and p =0.14 respectively).
• Infants with TSH> 15 mIU/L were treated with L thyroxine. After an average of 4 years of treatment, the BMI SDS and HtSDS did not differ among the 3 groups.

Conclusion
Early treatment of Thyroid dysfunction in DS maintains growth comparable to DS without thyroid dysfunction

Authors with no conflict of interest

Table 1: The Growth in Children with DS categorized according to their primary thyroid function

<table>
<thead>
<tr>
<th>Group</th>
<th>Age</th>
<th>LSD 1</th>
<th>BMI SDS 1</th>
<th>Age</th>
<th>LSD 2</th>
<th>BMI SDS 2</th>
<th>Delta HT SDS</th>
<th>Delta BMI SDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSH &gt;5-&lt;15</td>
<td>0.5</td>
<td>-1.5</td>
<td>-1.0</td>
<td>4.4</td>
<td>-2</td>
<td>0.43</td>
<td>-0.5</td>
<td>1.4</td>
</tr>
<tr>
<td>TSH &lt;5</td>
<td>0.5</td>
<td>-1.7</td>
<td>-1</td>
<td>2.5</td>
<td>-1.82</td>
<td>0.33</td>
<td>-0.07</td>
<td>1.3</td>
</tr>
<tr>
<td>TSH &gt;15</td>
<td>0.3</td>
<td>-2.4</td>
<td>-2.8*</td>
<td>4.5</td>
<td>-2.24</td>
<td>0.7</td>
<td>0.20</td>
<td>3.5*</td>
</tr>
</tbody>
</table>

*p<0.05, Age 1 = 6 mon, Age 2 = 4 y.

Author contacts:
Nada Aaaraj, MD nalaaraj@hamad.qa
No.+97466981673
Pediatric department
Hamad general Hospital
P.O.BOX:3050

DOI: 10.3252/pso.eu.58ESPE.2019
Growth and syndromes (to include Turner syndrome)