

Euthyroid Hashimoto thyroiditis in children : evolution over time

¹F Karachaliou, ²M Kafetzi, ¹E Vlachopapadopoulou, ¹D Thomas, ¹I Kaloumenou, ²A Fotinou, ³K Karavanaki, ¹S Michalacos

¹Department of Endocrinology-Growth and Development, "P & A Kyriakou" Children's Hospital, Athens, Greece

²Biochemistry and Endocrinology Laboratory, "P & A Kyriakou" Children's Hospital, Athens, Greece

³ Diabetic Clinic, 2nd Department of Pediatrics, University of Athens, "P&A Kyriakou" Children's Hospital, Athens, Greece.

INTRODUCTION

- Subclinical hypothyroidism (SH): normal fT4
5<TSH <10 U/L
- Causes : Hashimoto thyroiditis
Isolated hyperthyrotropinemia
- Treatment with L-Thyroxine : controversial.
- Even if most of the studies indicate a trend towards hypothyroidism with advancing age, there are retrospective studies showing spontaneous normalization of TSH.
- There are no valid factors useful for the prediction of progression of SH towards frank hypothyroidism.

OBJECTIVES

- To evaluate the natural course of euthyroid thyroiditis in children and adolescents and assess the presence of possible modulating factors.

METHODS

- Retrospective study.
- 87 children (63 girls, 24 boys, mean ± sd age:10.6 ± 3.2 yrs), with Hashimoto thyroiditis and normal fT4.
 - 64 with normal TSH<5U/L (group 1),
 - 23 with SH with 5<TSH<10U/L (group 2).
- Measurements of fT4 and TSH were recorded every 6 months for at least 2 years, if they remained euthyroid with TSH<10U/L.
- Hashimoto thyroiditis diagnosis was based on:
 - positive anti-TPO and/or anti-TG Abs (increased at least double the upper normal limit) in association with
 - the classical sonographic findings (goiter, heterogeneous sonographic pattern, hypoechogenic areas, fibrous septa, multiple or solitary nodules, pseudonodules, sometimes with calcifications and cysts).
- Thyroid (both thyroglobulin and thyroid peroxidase) Abs were measured with the same commercial chemiluminescent immunometric method (Diasorin Advantage Analyzer).
- Follow-up was obtained every 6 months .
- Auxological measurements included recording of HtSDS, BMISDS.
- Thyroid ultrasound.
- TSH, fT4, anti-TPO, anti-TG abs measurements.
- During follow-up:
 - None of the patients became hyperthyroid.
 - Whenever TSH>10U/L, patients were given L-thyroxine treatment.

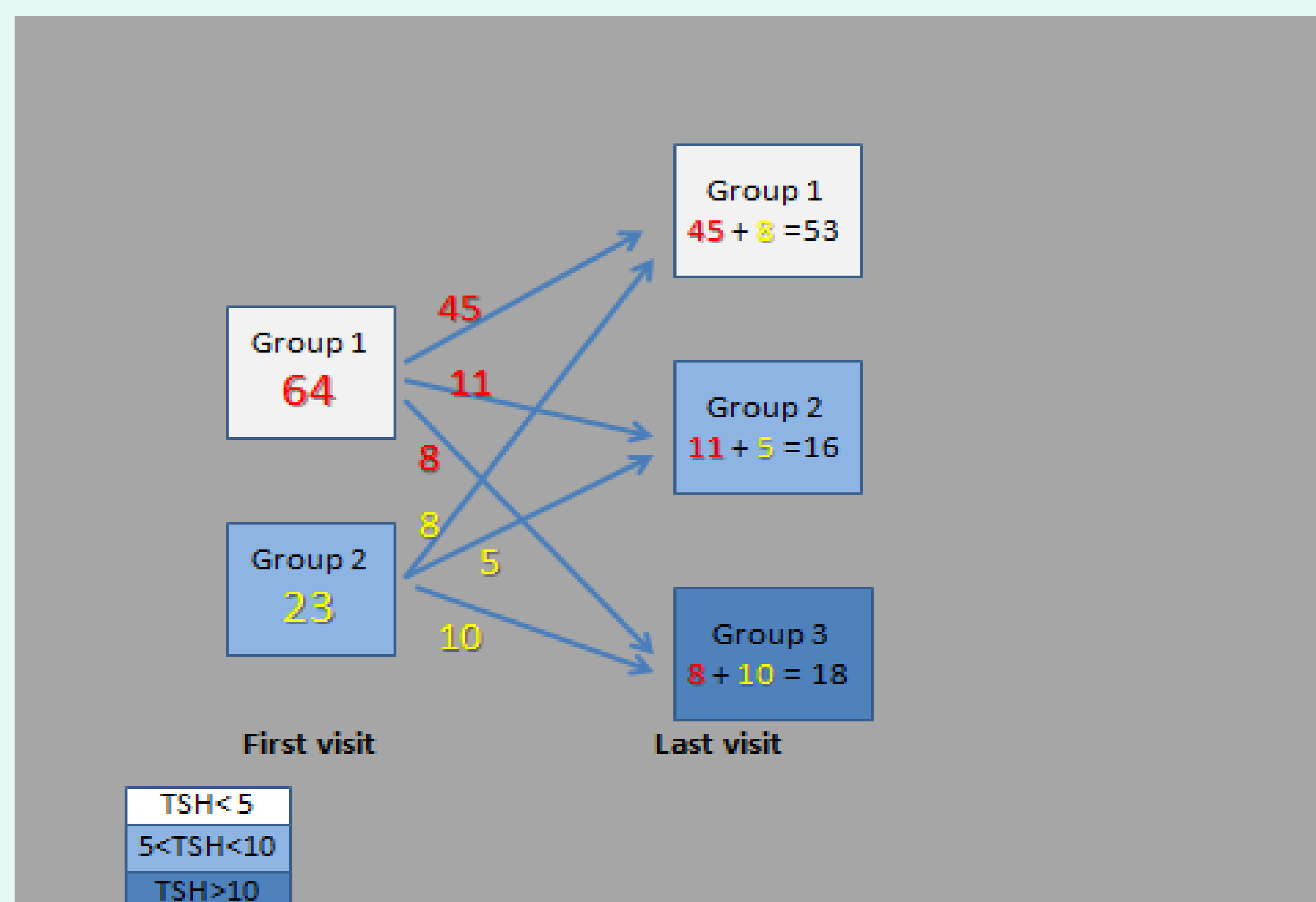
CONCLUSIONS

- A significant percentage of children (63%) with Hashimoto thyroiditis remained or became euthyroid during a follow-up period of at least 2 years.
- Antithyroid Abs levels at presentation and their progressive increase may represent predictive factors of the development of hypothyroidism in children with Hashimoto thyroiditis.

BIBLIOGRAPHY

- Radetti G , Maselli M, Buzi F, Corrias A, et al. The natural history of the normal/mild elevated TSH serum levels in children and adolescents with Hashimoto's thyroiditis and isolated hyperthyrotropinaemia: a3-year follow-up. Clin Endocrinol (Oxf). 2012 Mar;76(3):394-8
- Radetti G , Gottardi E, Bona G, Corrias A, Salardi S, Loche S; Study Group for Thyroid Diseases of the Italian Society for Pediatric Endocrinology and Diabetes (SIEDP/ISPED). The natural history of euthyroid Hashimoto's thyroiditis in children. J Pediatr. 2006 Dec;149(6):827-32
- Wasniewska, M Salerno M, Cassio A et al. Prospective evaluation of the natural course of idiopathic subclinical hypothyroidism in childhood and adolescence. European Journal of Endocrinology, 2009; 160, 417-421.

RESULTS



Comparison between patients showing improvement or stabilization (66.7%) and those with deterioration (33.3%) of thyroid function

	Improvement/ Stabilization N=58	Deterioration N=29	P (Mann-Whitney test)
Age (yrs)	10.5 ± 2.8	10.9 ± 4.2	NS
Sex (F/M)	72%	69%	NS
Tanner I/II-V	53%	47%	NS
HtSDS (a)	0.1 ± 1.2	0.2 ± 1.5	NS
HtSDS (b)	0.2 ± 1.3	0.3 ± 1.0	NS
BMISDS (a)	0.9 ± 1.5	1.1 ± 1.7	NS
BMISDS (b)	1.0 ± 1.8	1.1 ± 1.3	NS
fT4 (ng/dl) (a)	1.32 ± 1.0	1.28 ± 0.8	NS
fT4 (ng/dl) (b)	1.35 ± 0.8	1.33 ± 0.9	NS
TSH (U/l) (a)	4.8 ± 1.4	5.6 ± 1.3	NS
TSH (U/l) (b)	4.6 ± 1.5	15.3 ± 2.4	0.001
Anti -TPO (U/l) (a)	329.7 ± 392.5	660.2 ± 680.2	0.04
Anti -TPO (U/l) (b)	362.3 ± 361.8	702.3 ± 585.2	0.03
Anti -TG (U/l) (a)	608.3 ± 536	1288.6 ± 1037	0.04
Anti -TG (U/l) (b)	580.6 ± 521.8	1403.2 ± 1203.1	0.01
Δ-TPO (U/l) (a)	33.7 ± 24.0	40.3 ± 33	NS
Δ-TG (U/l) (b)	28.2 ± 25.2	115.2 ± 78.2	0.05

(a): first visit, (b): last visit.