

The evolution of thyroid function after Hashimoto's thyroiditis presentation is different in initially euthyroid girls with or without Turner syndrome

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OBJECTIVES

Background: Hashimoto's thyroiditis (HT) is the commonest autoimmune disorder in Turner syndrome (TS). Although there are in the pediatric literature many studies on the relationships between TS and HT, only few of them have specifically investigated whether the association with TS might be able to significantly affect the evolution over time of thyroid function in children and adolescents with HT, by conditioning a different thyroid status prognosis.

Aim : In the present multicenter study we have prospectively investigated, through a 5-yr follow-up, whether thyroid status prognosis of HT is different in euthyroid girls with TS than in euthyroid girls without TS.

METHODS

In 66 TS girls (aged between 4.5 and 17.9 yrs) and in 132 non-TS girls (aged between 4.5 and 17.9 yrs) with euthyroid HT and similar thyroid tests at HT diagnosis we followed up the evolution over time of thyroid status. At each annual examination TSH, FT4, thyroid peroxidase and thyroglobulin autoantibodies serum levels were measured.

Table 1

Median ages (and ranges), prevalence of pubertal patients (%), median TSH (and ranges), mean FT4 (\pm SD), median thyroid peroxidase and thyroglobulin autoantibody (TPOAb and TGAb) serum levels (and ranges), at diagnosis of Hashimoto's thyroiditis, in two groups of girls with (TS group) or without Turner syndrome (non-TS group).

	Age (yrs)	Pubertal patients (%)	TSH (mIU/l)	FT4 (pmol/l)	TPOAbs (mIU/l)	TGAb (mIU/l)
TS group (Nos. 66)	13.0 (4.5-17.9)	53.0	2.8 (0.6-4.8)	15.1 \pm 2.9	119 (5-6400)	230 (5-4900)
Non-TS group (Nos. 132)	10.6 (2.8-15.0)	61.4	2.5 (0.47-4.9)	15.4 \pm 3.6	374 (31-29950)	227 (10-6400)
p	0.0001	0.262	0.260	0.280	0.042	0.178

Table 2

Median ages (and ranges), median TSH (and ranges), mean FT4 (\pm SD), median thyroid peroxidase and thyroglobulin autoantibody (TPOAb and TGAb) serum levels (and ranges), five years after Hashimoto's thyroiditis (HT) diagnosis, in two groups of girls with (TS group) or without Turner syndrome (non-TS group).

	Age (yrs)	TSH (mIU/l)	p [*]	FT4 (pmol/l)	p [*]	TPOAbs (mIU/l)	p [*]	TGAb (mIU/l)	p [*]
TS group (Nos. 66)	18.0 (9.5-24.6)	7.8 (0.03-15.5)	0.0001	11.5 \pm 4.5	0.0001	56 (5-4990)	0.1220	110 (5-3200)	0.0210
Non-TS group (Nos. 132)	15.5 (7.8-20.0)	3.4 (0.4-9.9)	0.0007	14.9 \pm 1.6	0.0220	311 (6-8945)	0.1360	164 (5-5600)	0.0800
p [*]	0.0001	0.0001		0.0001		0.0040		0.0290	
p ^{**} (ANCOVA)	-	0.0257		0.0151		0.0002		0.4848	

*between TS and non-TS groups

**between TS and non-TS groups, after adjusting for age and TPOAb serum levels at HT diagnosis by analysis of covariance (ANCOVA)

[§]vs the corresponding values recorded at the time of HT diagnosis

Table 3

Prevalences (%) of the different biochemical patterns of thyroid function detected, five years after Hashimoto's thyroiditis diagnosis, in two groups of girls with (TS group) or without Turner syndrome (non-TS group).

	Euthyroidism (%)	p [*]	Subclinical hypothyroidism (%)	p [*]	Overt hypothyroidism (%)	p [*]	Hyperthyroidism (%)	p [*]
TS group (Nos. 66)	34.8	0.0001	13.6	0.0019	47.0	0.0001	4.6	0.0079
Non-TS group (Nos.132)	56.8	0.0001	30.3	0.0001	12.9	0.0001	0	-
p [*]	0.005		0.010		0.0001		0.014	

*between TS and non-TS groups

[§]vs the prevalence detected at entry

RESULTS

At the end of follow-up TS girls exhibited higher TSH levels, lower FT4 levels and lower prevalences of both euthyroidism and subclinical hypothyroidism, but higher prevalences of both overt hypothyroidism and hyperthyroidism, irrespective of karyotypes.

Figure 1

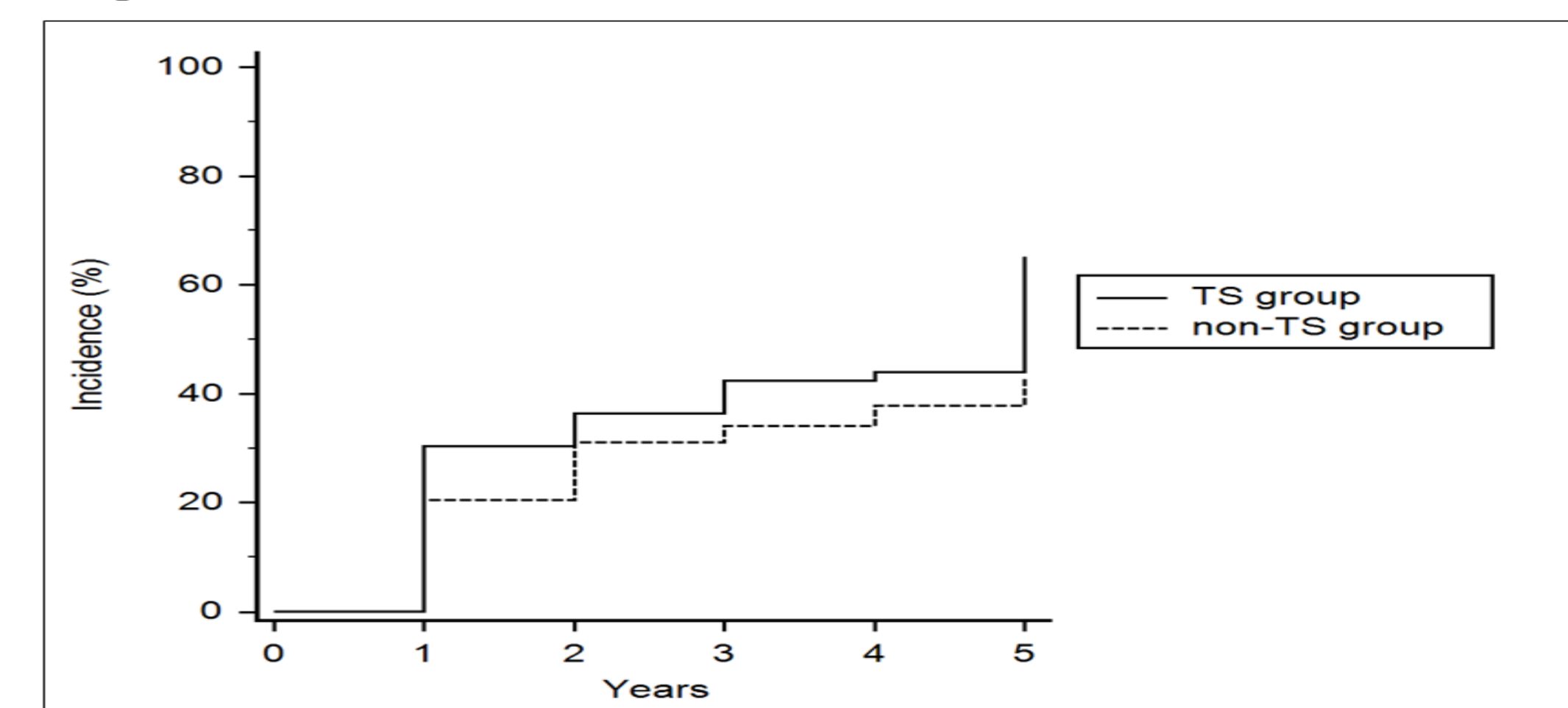
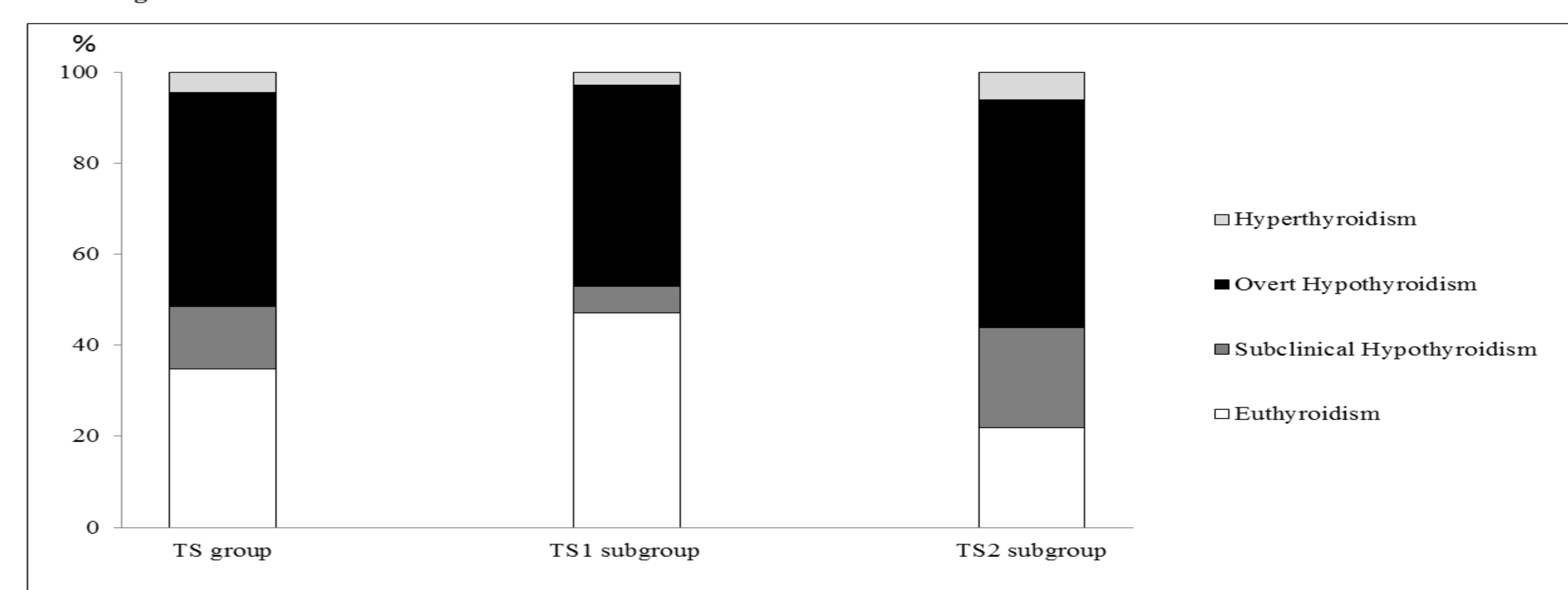


Figure 2



CONCLUSIONS

- the association with TS is able to impair the long-term thyroid function prognosis in girls with HT;
- such effect is irrespective of thyroid function tests at HT diagnosis and is not necessarily linked with a specific karyotype.

References

M Wasniewska¹, M Salerno², A Corrias³, L Mazzanti⁴, P Matarazzo³, D Corica¹, T Aversa¹, MF Messina¹, F De Luca¹, M Valenzise¹
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 Under revision

