

PRE-EXISTING AUTOIMMUNE THYROID DISEASE (AITD) MAY INFLUENCE THE COURSE OF THE DISEASE IN DIFFERENTIATED THYROID CARCINOMA (DTC) PATIENTS

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Introduction - Aim of the study

- ✓ DTC has generally a good prognosis and is associated with prolonged survival.
- ✓ A minority of patients may have persistent disease and rarely aggravation during f/u.
- ✓ One of the risk factors associated with the prognosis of the disease is the previous history of autoimmune thyroid disease (AITD)
- ✓ Autoimmunity has been associated with better prognosis although not consistently
Kim et al. 2009, Gupta et al. 2001, Loh et al. 1999
Muzza et al. 2010, Del Rio et al. 2008, Pacini et al. 1988
- ✓ We investigated whether preexisting autoimmunity may influence the persistence of disease in a cohort of patients who had undergone ablation with I¹³¹ and are followed up in a single centre in Greece.

Patients - Methods

903 DTC patients were referred to our center from 1968-2012
541 underwent thyroid remnant ablation

✓ 22.4% males

✓ They were followed-up for 1-44 years (7.9±8.4yrs)

A. 344 (65.6%): remission (12 month stimulated Tg ≤1.0 ng/ml)

B. 197 (36.5%): persistence (12 month stimulated Tg >1 ng/ml). Most of group B underwent repeated treatments: >1 surgery and/or repeat I¹³¹ administration.

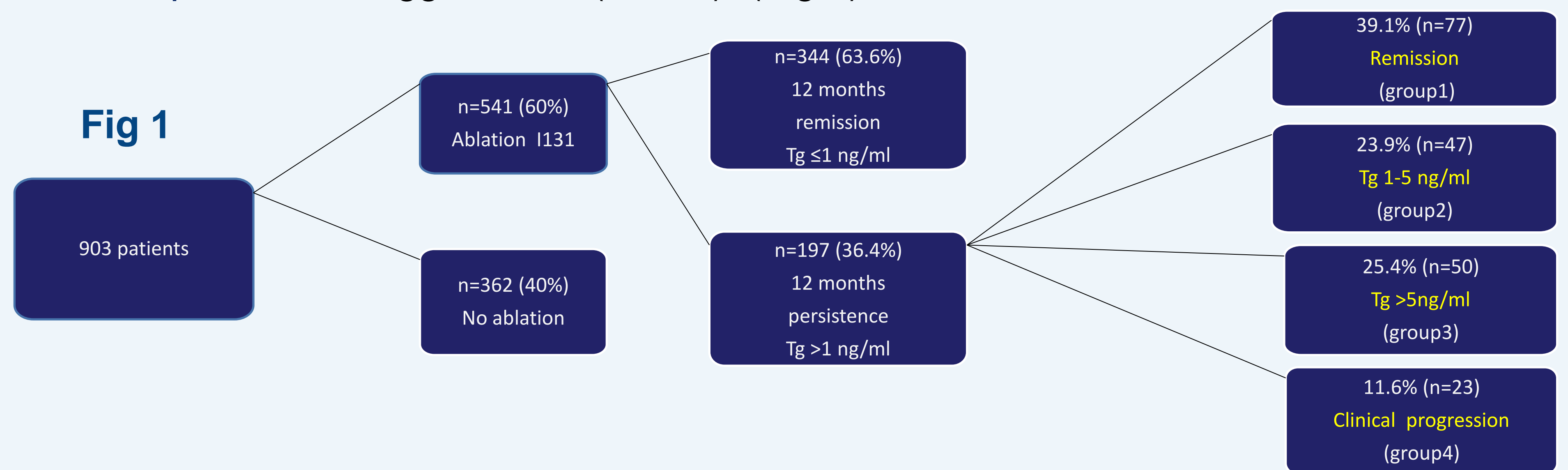
Group B were divided in 4 subgroups:

Group1: Patients who finally showed remission (39.1%)

Group2: Persistently low-Tg (≤5ng/ml) during f/u & no clinical aggravation (23.9%)

Group3: Persistently high-Tg (>5ng/ml, & no clinical aggravation (25.4%)

Group4: Clinical aggravation (11.7%), (Fig 1)



1. Results in patients who underwent ablation with I¹³¹ (n=541)

- Male patients had more frequently disease persistence than females (p=0.008, table 1)
- Patients with 12month remission of disease had more frequently history of autoimmunity and thyroid autoantibodies at diagnosis (p=0.008, fig 2,3)

Table 1. Disease progression according to gender

	REMISSION	PERSISTENCE
MALES	63.3%	34.7%
FEMALES	81.5%	18.6%

Table 2, 3. Disease progression according to AITD history and preoperative ThAb positivity

	AITD HISTORY POSITIVE	AITD HISTORY NEGATIVE	P
REMISSION	95.5%	76.2%	0.001
PERSISTENCE	4.5%	21%	

	ThAb positive	ThAb negative	P
REMISSION	96.9%	67.9%	0.001
PERSISTENCE	3.1%	28.3%	

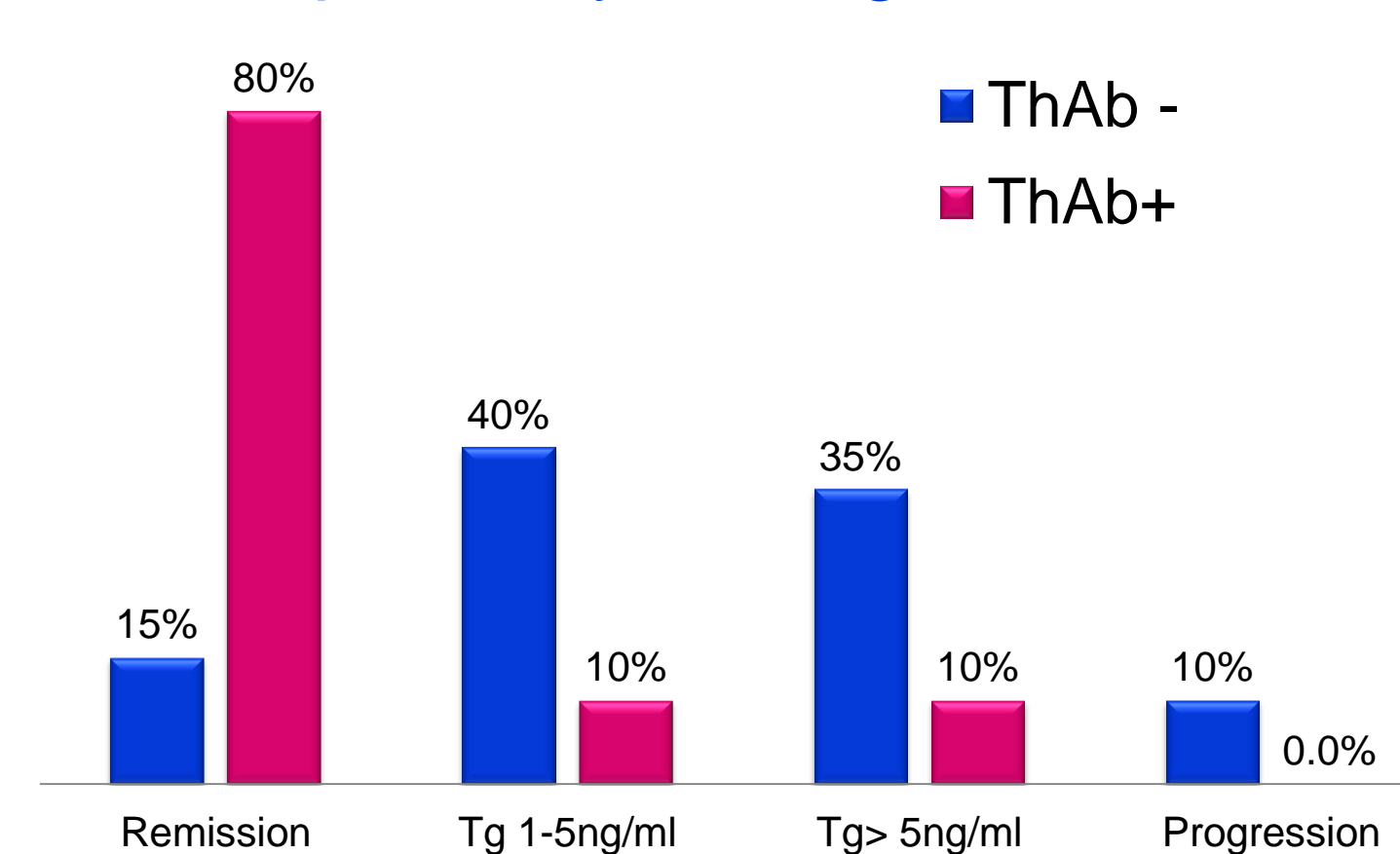
Table 4. Clinical and histological characteristics according to AITD history

	AITD HISTORY POSITIVE	AITD HISTORY NEGATIVE	P
MicroPTC	36.9%	20.2%	0.003
Multifocal	56.2%	44.5%	0.041
Capsular invasion	65.4%	64.6%	0.5
Soft tissue involvement	8.7%	10.3%	0.4
Lymph-node mets	35%	31%	0.28
Distant mets at diagnosis	0.8%	3.1%	0.17

2. Results in patients who underwent ablation with I¹³¹ and showed disease persistence (during the 12-month Tg-stimulation test: Thyroglobulin >1.0ng/ml) (n=197)

- Group1 had more frequently positive history of AITD and positive thyroid autoantibodies at diagnosis (p=0.003, fig 2, 3).
- Age at diagnosis, tumor size and Tg levels at the time of the 1st ablation were higher in groups 3 and 4 (p<0.04, Mann-Whitney, table 5).
- Group1 had more frequently microDTCs(<1.0cm), less frequently lymph-node involvement, soft tissue involvement and distant metastases at diagnosis (p=<0.003).
- More aggressive histological type was more frequently observed in group4 (p<0.001).
- No differences in multifocality, family DTC history and type of first surgery were observed between groups.

Patients with persistent disease at 1 yr: Disease progression according to ThAb positivity at diagnosis



Patients with persistent disease at 1 yr: Disease progression according to history of AITD

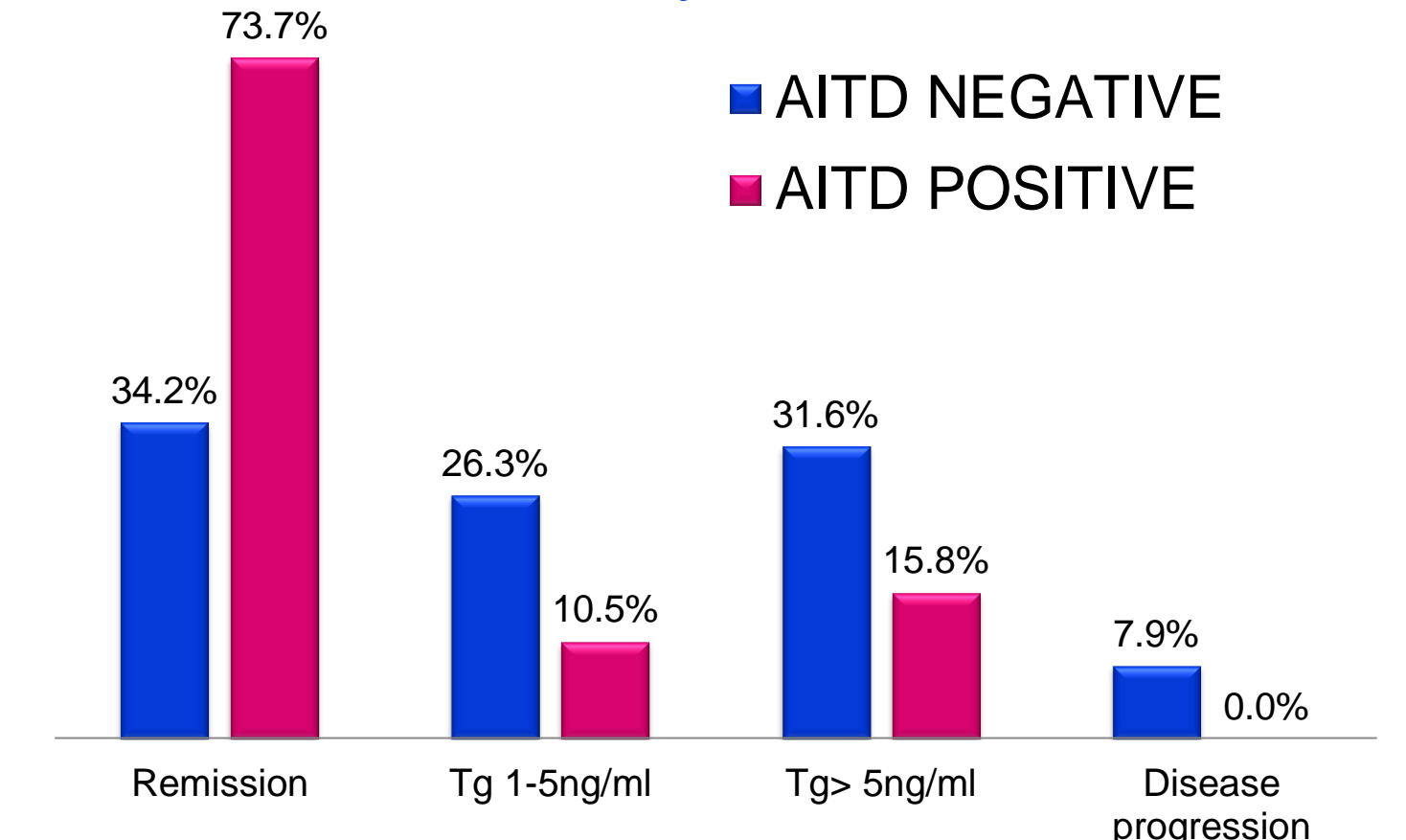


Table 5. Age at diagnosis and tumor size at the time of the 1st ablation in the 4 groups

	REMISSION	TG 1-5 ng/ml	TG > 5 ng/ml	CLINICAL AGGRAVATION	P
AGE (YEARS)	41.89 ± 13.52	35.85 ± 12.9	40.41 ± 17.2	49.9 ± 20.9	0.005
TUMOUR SIZE (CM)	1.64 ± 1.0	1.69 ± 0.9	1.96 ± 1.56	2.8 ± 1.65	0.024

Conclusions

Except from the classical predisposing factors (tumor size, histological and clinical findings) preexisting AITD is associated with increased frequency of remission in patients with DTC. Similar results have been reported using tissue markers of autoimmunity. (Matsubayashi et al. 1995, Singh et al. 1999)

SUGGESTED MECHANISMS

- Cytokines may play a favorable role in the development of DTC
- Lymphocytic infiltration itself may be associated with decreased disease spread
- The autoantibodies may be recognising and attacking malignant cells

(Cunha et al. 2011, Giordano et al. 1997, Bagnasco et al. 1989, Kimura et al. 1992)