

LOW/UNDETECTABLE PRE-ABLATION THYROGLOBULIN IN WELL-DIFFERENTIATED THYROID CANCER PATIENTS WITH POSITIVE I-131 WHOLE BODY SCANS – CAUSES AND CONSEQUENCES

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INTRODUCTION

In patients with well-differentiated thyroid cancer (DTC) low/undetectable thyroglobulin (TG) at time of remnant ablation usually reflects a complete previous surgery. However, in a small percentage (6.3-16%) it can represent false negative values.

OBJECTIVES

Evaluate the frequency of patients with low/undetectable TG at time of remnant ablation with loco-regional or distant lesions at post-ablative I-131 whole body scan (WBS) and the influence of TG levels in long-term outcome.

METHODS

- Retrospective analysis of all patients with DTC submitted to ablative I-131 treatment in our centre. Included: patients with a stimulated TG < 5ng/mL (measured at time of remnant ablation) and loco-regional or distant uptake at post-ablative I-131 WBS, performed 6-7 days after.
- Excluded: patients with TSH<30mUI/mL after thyroid hormone withdrawal or with a follow-up<6months.
- Statistical analysis: SPSS(21).

RESULTS

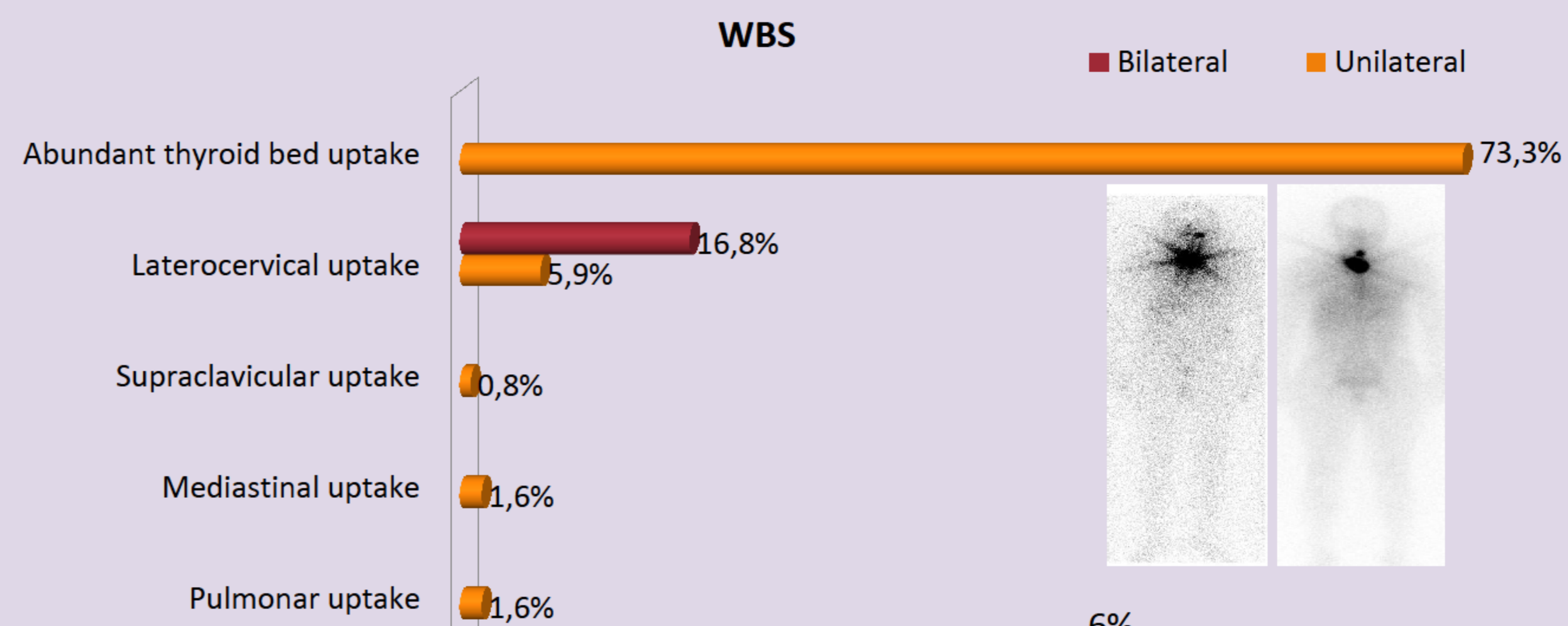
- Of 967 patients, 211 (21.8%) were included (178♀; 33♂)
- Ninety two (43.6%) presented anti-TG antibodies
- Only patients with negative anti-TG antibodies (n=119) were considered for analysis**

Clinico-pathological characteristics

TNM classification	T1	93 (78,2%)
	T2	19 (16%)
	T3	1 (0,8%)
	T4	6 (5%)
	No or Nx	111 (93,3%)
	N1a	8 (6,7%)
Recurrence risk	N1b	0 (0%)
	Low	95 (79,8%)
	Intermediate	22 (18,5%)
	High	2 (1,7%)
Thyroglobulin Classes	TSH stimulation (THW/rhTSH)	87/32 (73,1%/26,9%)
	TSH (uUI/mL)	54,0 ± 40,6
	Thyroglobulin (ng/mL)	1,2 ± 1,4
	Undetectable	55 (46,2%)
	0-2 ng/mL	33 (27,7%)
	2-5 ng/mL	31 (26,1%)

Lower TG levels if (at histopathological analysis):

- Lymphocytic infiltrate (1,2 ± 1,4 vs. 1,5 ± 1,9ng/dL, p<0,05) *
- Abundant solid areas (1,2 ± 1,2 vs. 1,8 ± 1,6ng/dL, p<0,05) *



Follow-up time: 8 ± 4,8 years

- 17 (14,3%) patients with evidence of persistent / recurrent disease
 - 8 local
 - 9 distant

Treatment of persistent / recurrent disease

Radioiodine therapy	82,4% (n=14)
Surgery	17,6% (n=3)

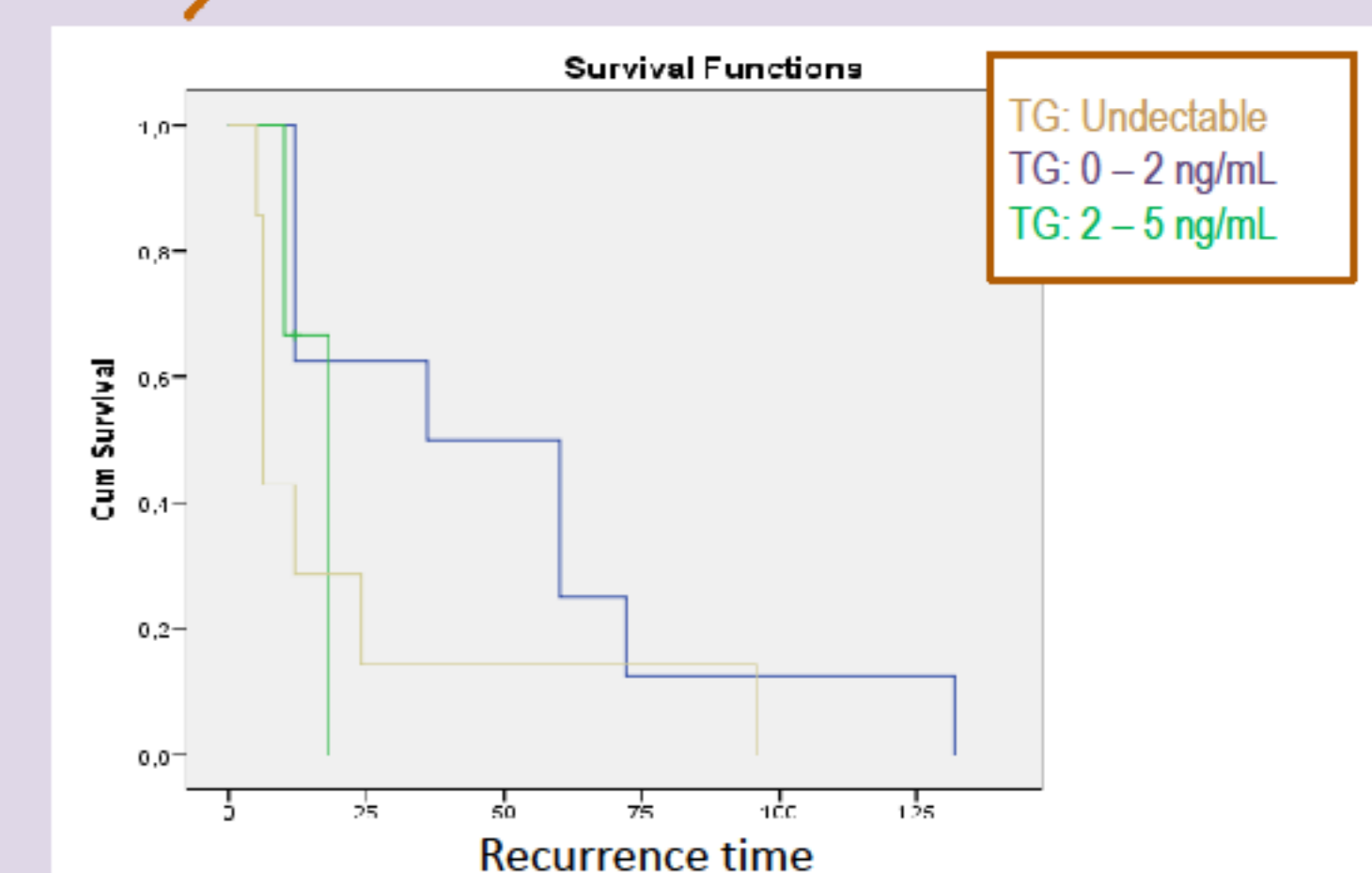
Probability of persistent/recurrent disease significantly higher if:

Lymph nodes metastasis (OR=11,8; p<0,01**)

Extrathyroid uptake at post-ablative 131-I WBBS (OR=20,8; p<0,01**)

- Disease-free survival inversely correlated with Tg at ablation time ($\rho=-0,597$; p<0,01**)

- Disease-free survival significantly higher in patients with undetectable TG levels at ablation time (p<0,05)*



CONCLUSION

A fifth of DTC patients presented low/undetectable Tg at time of remnant ablation with uptake (loco-regional or distant) at post-ablative I-131 WBS. In about half this was justified by anti-TG antibodies. In the others, may be related to the presence of microscopic lesions or specific histopathological features.

In these patients, low/undetectable Tg did not exclude risk of persistence/recurrence, but seems related with disease-free survival. This study also highlights the importance of post-ablative I-131 WBS in the evaluation of these patients.

