Instituto Português de Oncologia de Lisboa
Francisco Gentil, E.P.E.

Radioactive Iodine Therapy in Papillary Thyroid Carcinoma Staged as T1

Pedro Marques, Daniel Macedo, Joana Simões Pereira, Margarida da Silva Vieira ,Valeriano Leite, Maria João Bugalho

Endocrinology Department, Portuguese Institute of Oncology, Lisbon

INTRODUCTION

- 49% of the rising incidence of papillary thyroid carcinoma (PTC) consists of cancers measuring ≤ 1 cm and 87% consists of cancers measuring ≤ 2 cm.[1]
- ^{131}I therapy in patients with PTC ≤ 2 cm and without extrathyroidal extension (T1) depends on multifactorial analysis: age, multifocality, histological criteria, lymph node or systemic metastases.
- ***AIMS:*** Analyze PTC-T1 and compare groups treated with surgery and ^{131}I *vs* only surgery.

METHODS

- Retrospective analysis of clinical files of PTC-T1 patients diagnosed between 2002-2006 and followed in the Endocrinology Department.
- All cases included had confirmed histopathological diagnosis.
- Cases were identified through the South Regional Cancer Registry and the database of the Endocrinology Department. Data was analysed using SPSS20®.

RESULTS

N (%)	***PTC T1 (N=178)***	T1a (N=89)	T1b (N=89)
Females	**153 (86%)**	75 (84,3%)	78 (87,6%)
Mean age (y)	**47,2 (±14,3)**	47,9 (±15,2)	46,6 (±13,4)
Incidental diagnosis	**69 (38,8%)**	49 (55,1%) *	20 (22,5%)
Mean tumoral diameter (cm)	**1,2 (±0,5)**	0,73 (±0,3)	1,62 (±0,3)
Multifocal	**58 (32,6%)**	27(30,3%)	31(34,8%)
High risk variants (tall cells,trabecular, solid, sclerosant)	**8 (4,5%)**	1 (1,1%)	7 (7,9%)
Angioinvasion	**9 (5,0%)**	2 (2,2%)	7 (7,9%)
Surgical margins-R0	**168 (94,4%)**	88 (98,9%) *	80 (89,9%)
Lymph node met.	**30 (16,9%)**	13 (14,6%)	17 (19,1%)
Lung metastases	**4 (2,2%)**	2 (2,2%)	2 (2,2%)
LOW Risk Stratification ATA(1)	**123 (69,1%)**	*69 (78%)* *	*54 (61%)*
Surgeries to recurrent / persistent disease (N)	**12**	7	5
^{131}I therapy realized	**109 (72,2%)**	38 (42,7%) *	71 (79,8%)
Number ^{131}I therapies	**132**	46 *	86
Persistent/recurrent disease [BED/SED]	**14 (7,9%) [4/10]**	5 (5,6%) [1/4]	9 (10,1%) [3/6]
Mean follow-up (mth)	**71 (±23)**	68 (±24)	74 (±21)

Table 1: Clinical, histological, staging and management features of PTC-T1 cases (comparative analyzes T1a vs T1b was included: statistical significance, p <0,05, is represented by *) [BED-biochemical evidence of disease / SED – structural evidence of disease)

N (%)	Surgery + ^{131}I **(N=109)**	Only Surgery (N=69)
Females	94 (86,2%)	59 (85,5%)
Mean age (y)	47,6 (±14,7)	46,7 (±13,8)
Incidental diagnosis	34 (31,2%) *	**36 (52,2%)**
T1a	38 (42,7%) *	**51 (57,3%)**
T1b	**71 (79,8%)**	18 (20,2%)
Mean tumoral diameter (cm)	**1,37 (±0,5)** *	0,88 (±0,5)
Multifocal	**48 (44,0%)** *	10 (14,5%)
High risk variants (tall cells,trabecular, solid, sclerosant)	**8 (7,4%)** *	0
Angioinvasion	**9 (8,3%)** *	0
Surgical margins-R1	8 (7,3%)	2 (2,9%)
Lymph node met.	**29 (26,6%)** *	1 (1,4%)
Lung metastases	4 (3,7%)	0
Persistent/recurrent disease [BED/SED]	**14 (12,9%) [4/10]** *	0

Table 2: Characteristics of PTC-T1 submitted to surgery plus ^{131}I *vs* isolated surgery (comparative analyzes was included: statistical significance, meaning p <0,05 is represented by *)

Age category	≤ 45 years: 112,8 > 45 years: 112,7 p=0,403
Gender	M: 104 F: 116 p=0,289
Diagnosis	Incidental: 120 Non-incidental:107 p=0,19
T1	T1a: 118 T1b: 108 p=0,388
Foci	Unifocal: 111 Multifocal: 112 p=0,566
Surgical margins	R0: 118 **R1: 88** **p=0,000**
Angioinvasion	No: 116 Yes: 107 p=0,629
N1	No: 119 **Yes: 86** **p=0,013**
M1 (lung met.)	No: 118 **Yes: 0** **p=0,000**

Table 3: Mean free-disease survival time (months) according with different factors

CONCLUSIONS

- Generally, PTC-T1 are associated with good prognosis (non-evidence of disease in 92,1%).
- Some PTC-T1 showed aggressive clinicopathological features. Lymph node/lung metastases or positive surgical margins are likely to negatively affect the prognosis.
- In the absence of metastases and/or aggressive histological criteria, the benefit of ^{131}I therapy is doubtful.
- Tumor dimensions do not condition prognosis. T1b tumors are more often associated with aggressive histological criteria nonetheless without significant impact in free-disease survival.

(1) Cooper, D; Doherty, G; Haugen, B; Kloos R; et al. Revised American Thyroid Association Management Guidelines for Patients with Thyroid Nodules and Differentiated Thyroid Cancer. 2009. Thyroid. 19(11): 1167-1214.
(2) American Joint Commitee on Cancer (AJCC), Cancer Staging Manual, Seventh Edition, 2010, Springer, New York(3)
(3)Schvartz, C; Bonnetain, F; Dabakuyo, S; et al. Impact on Overall Survival of Radioactive Iodine in Low-Risk Differentiated Thyroid Cancer Patients. J Clin Endocrinol Metab. May 2012. 97(5): 1526-1535.