

Evolution of the Thyroglobulin After The First Treatment of Irathery in the Differentiated Thyroid Cancers

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I. Introduction

Thyroglobulin (Tg) is a 660 kDa, dimeric protein produced by the follicular cells of the thyroid and used entirely within the thyroid gland. Thyroglobulin protein accounts for approximately half of the protein content of the thyroid gland. The protein is a precursor of the thyroid hormones; these are produced when thyroglobulin's tyrosine residues are combined with iodine and the protein is subsequently cleaved (1). Hence, thyroglobulin levels in the blood are mainly used as a tumor marker for certain kinds of thyroid cancer (particularly papillary or follicular thyroid cancer). After complete initial treatment, the serum thyroglobulin assay under stimulation By TSH (endogenous or exogenous) is the most factor of differentiated thyroid cancers to predict persistent disease or tumor recurrence (2). A subsequent elevation of the thyroglobulin level is an indication of recurrence of papillary or follicular thyroid carcinoma. Thyroglobulin is not produced by medullary or anaplastic thyroid carcinoma. Evolution of thyroglobulin after the first Radioiodine (I -131) therapy in differentiated thyroid cancer

Population and methodology

This is a prospective study of 34 patients with differentiated thyroid cancer; All have benefited from a total thyroidectomy more or less lymph node dissection. The surgery was completed by Radioiodine (I -131) therapy at least six weeks after.

A sample for serum thyroglobulin was performed before treatment (Tg0) in defreination after cessation of thyroid hormone synthesis (greater than or equal TSH 30 mu / l) and 03 months after (Tg3) in freination (TSH below 0 , 1 mu / l). The Tg was assayed by IRMA method.

II. Results

The population consisted of 32 women and 2 men. The average age was 44.20 years (12-67 years). 67.64% were under 55 years of age. Histologically , the patients had papillary Carcinoma (n: 21; 62%) , Vesicular carcinoma (n:8 ;23.5%) and Vesiculo-papillary carcinoma (n: 5 ;14.5%) Respectively with mean ages of 41.04 ± 12.6 , $54 \pm 12,21$ and $44,20 \pm 19,20$ - Of the 34 patients, 30 (88.23%) had a Tg level <25 ng / ml after the first Radioiodine (I -131) therapy and 4 (11.76%) a Tg levels ≥ 25 ng / ml (133- 3807).

- 29/30 patients with Tg <25 ng / ml, had a positive totocorporeal scintigraphy 10 days after the first Radioiodine (I -131) therapy .(28 cervical and 2 remote fixings) The 4 patients with a Tg ≥ 25 ng / ml had distant metastases (n: 2) and a thyroid residue (n: 2).

The comparison of the mean Tg of each type of cancer between (Tg0) and (Tg3) regains a significant difference in papillary cancer (TableI)

TableI : Results of the TG

	Tg0 ng/ml	Tg3 ng/ml	P
papillary Cancer	35,22	6,93	P < 0,05
vésicular Cancer	108,58	140,47	DNS
vésiculo-papillary Cancer	763,12	761,7	DNS

The correlation coefficient obtained is 0.99 for papillary cancer, 0.93 for vesicular cancer and 0.99 for vesiculo-papillary cancer. This indicates that the two variables studied for each type of cancer vary in the same direction. There is therefore a positive correlation between Tg0 and Tg3.

III. Discussion

Differentiated thyroid cancers are 2 to 4 times more common in women than in men (3) The distribution according to histological type shows a predominance of papillary cancers. They represent 60 to 80% of thyroid cancers (4). In our series 61.76% of patients have a papillary cancer. In our country was considered deficient in iodine, moderately differentiated follicular carcinomas predominated until the early 1990s; However, since the obligation of salt iodization in 1991, there seems to be a reversal of the tendency towards the predominance of papillary cancers which are of better prognosis.

Vesicular cancers are more secreting than papillary cancers (5). These results were observed in our series and differentiated thyroid cancers are rare in children and adolescents(6)(7)(8)(9); In our series there was only one child presenting a vesiculo-papillary carcinoma with a low Tg level. In our study, a significant difference between the Tg0 level and the Tg3 level was observed in papillary cancer whereas this was not observed in other histological types This study has finally demonstrated rapid effectiveness irathérapie 03 months after a first Radioiodine (I -131) therapy .

The serum Tg assay has no place in the positive diagnosis of differentiated thyroid cancers , except in the case of metastasis revealing bone whose thyroid origin is evoked and associates usually at Tg levels very high (> 500 ng / mL). Tg-stimulated is very often inferior to 5 ng / ml after thyroid-Total dectomy. Differences exist between the surgical results, but rates are very rare greater than 30 ng / mL. The Tg rate is often slightly higher In the case of 2-stage thyroidectomy , because the initial gesture was often less full.

Toubeau et al (10) studied Tg-stimulated performed just before Radioiodine (I -131) therapy (pre-ablative Tg) In 212 patients of whom only 21% With An extra-thyroid extension and 56 pN1 (out of 119 curations). Five patients were eliminated from the final analysis. Of the 208 patients with limited fixation to the thyroid bed, only 30 patients had a pre-ablative Tg > 30 ng / mL (IRMA, Pasteur).

At the 1st con (At 6-12 months), 30 patients had high Tg-stimulated (14% of the population), 19 of whom belonged to the Tg-preablative group> 30 ng / mL (63%). With an average follow-up of 5.1 years, 20 patients had residual disease. The pre-ablative Tg had a high positive predictive value (p <0.002), making this parameter relevant from the initial assessment of patients (11) (12)

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