Predictive role of serum Thyroglobulin after surgery and radioactive iodine therapy inpatients with differentiated thyroid carcinoma

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INTRODUCTION
Thyroidectomy followed by Radioactive Iodine Therapy (RAI) is the treatment of choice for differentiated thyroid carcinoma (DTC). The serum thyroglobulin (Tg) measurement has proved to be useful for predicting persistent and/or recurrence of disease during the follow-up of DTC patients. In our study, we evaluated the predictive value of serum Tg measured in 3 different occasions: i) in euthyroidism with TSH <5 (Tg pre-131I), 40 days after surgery before thyroid remnant ablation; ii) on the day of ablative RAI after 2 doses of Thyrogen and TSH >50 (Tg at-131I); iii) one week after ablative RAI (Tg after-131I).

METHODS
One hundred thirty-one patients (99 females, 32 males, average age 50.9±11.82) with treated PTC was retrospective enrolled between 2013 and 2016. All included patients had a negative neck US scan for lymph nodes after surgery. Response to therapy was evaluated with serum measurements (Tg, TSH, Anti-Tg) and imaging techniques (neck ultrasonography, WBS-131I). The follow-up was assessed at 3, 6, 12 and 24 months after given the RAI, in all patients. Different clinical and pathological factors were assessed such as age, gender, tumor histology, capsular invasion, multifocality, resection margins, stage and risk assessment according to the ATA Guidelines. The worse prognosis was defined as local or distant recurrence of disease. All statistical analyses were performed using SAS software version 9.4 (SAS Institute Inc., Cary, NC, USA).

RESULTS
8 of 131 (6.1%) patients had local (n=3) or metastatic disease (n=5) during 2-year follow-up. Tg pre-131I was the best predictor of recurrent disease with a cut-off value of 15.49 ng/mL [area under the curve=0.65 (p<0.051)] for local recurrence and a cut-off value of 24.04 ng/mL [area under the curve=0.97 (p<0.0001)] for distant recurrence.

CONCLUSIONS
In accordance with previous studies, serum Tg pre-131I value was a significant prognostic factor to predict disease recurrence in patients with PTC. These findings suggest that further studies are needed to better evaluate the role of Tg in early staging of patients.

REFERENCES