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Long-Term Follow-Up for Differentiated Thyroid Carcinoma Patients: A Reconsideration

Robin A.L. van der Wardt, Adrienne C.M. Persoon,
Esther N. Klein Hesselink, and Thera P. Links

Dear Editor:

Since recurrence of disease can develop up to 30 years after initial treatment, a long-term follow-up has been advocated for patients with differentiated thyroid cancer (DTC) (1). A detectable thyroglobulin (Tg)—one of the cornerstones in the follow-up of patients with DTC—is considered as disease activity. However, it remains unclear whether long-term follow-up is required for all DTC patients. In an attempt to study the yield of long-term follow-up, we report an extensive follow-up of DTC patients who participated in an earlier study.

In the prior study, we evaluated the additional value of recombinant human thyrotropin-stimulated Tg (rhTSH-Tg) measurement in the detection of disease activity in DTC patients in long-term follow-up (measurement was performed at any point during follow-up, with a median of 10.2 years, interquartile range [IQR] 5.3–16.2 years after DTC diagnosis) (2). All patients underwent total thyroidectomy and radioiodine ablation treatment. In 20/121 initial participating patients, rhTSH-Tg was ≥ 1 ng/mL. In three of them, a clinical recurrence was detected after imaging. Here, we describe the results of an additional 10-year follow-up of the remaining 118 patients who provided informed consent for extensive follow-up. TNM and cancer stage were reclassified according to the American Joint Committee on Cancer (AJCC) seventh edition by reassessing pathology reports.

Of these 118 patients, 17 had a rhTSH-Tg ≥ 1.0 ng/mL (12 patients with AJCC stage I, one with stage II, and four with stage IV cancer), and 101 patients had a rhTSH-Tg < 1 ng/mL (66 patients with stage I, 10 with stage II, seven with stage III, three with stage IV, and 15 with an unknown stage) in the initial study (Supplementary Table S1; Supplementary Data are available online at www.liebertpub.com/thy). The patients visited the outpatient clinic annually for physical examination and TSH and Tg measurement on levothyroxine (Tg-on). Neck ultrasound was performed if indicated. Remission was defined as an undetectable Tg-on (< 0.6 ng/mL) without (clinical) signs of recurrence. One of the 118 patients showed a biochemical recurrence after six years, with a Tg-on of 10 ng/mL, which remained stable in the subsequent four years. Recurrence could not be localized by additional

imaging (consecutive neck ultrasounds and magnetic resonance imaging neck mediastinum). This patient had an initial rhTSH-Tg < 1.0 ng/mL. The remaining 117 patients were in remission after an additional median follow-up of 10.7 years (IQR 9.9–10.7) and a median of 20.9 years (IQR 15.1–27.4) after diagnosis.

Our results show that a detectable rhTSH-Tg in the absence of anatomical localization is not predictive for the development of a recurrence during long-term follow-up of DTC patients, irrespective of the risk classification. Moreover, our extensive follow-up of this well-defined patient cohort yielded a very low number of patients with recurrent disease. This adds arguments to the discussion about the value of long-term follow-up of DTC patients. Benefit of long-term follow-up in terms of identifying patients with recurrent disease is low but may cause harm. Recently it was shown that half of the DTC patients in long-term follow-up have concerns about recurrence, which negatively affect their health-related quality of life (3,4). The long-term follow-up of patients with well-differentiated thyroid cancer—which is in contrast to other malignancies—may add to a long-standing fear for (recurrence of the) malignancy. Our data could support a reconsideration of the time span of follow-up for low- and intermediate-risk DTC patients after adequate treatment.

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