

## Long-Term Clinical Outcome of Differentiated Thyroid Cancer Patients with Undetectable Stimulated Thyroglobulin Level One Year After Initial Treatment

Ji Min Han,<sup>1</sup> Won Bae Kim,<sup>1</sup> Ji Hye Yim,<sup>1</sup> Won Gu Kim,<sup>1</sup> Tae Yong Kim,<sup>1</sup> Jin-Sook Ryu,<sup>2</sup> Gyungyub Gong,<sup>3</sup>  
Tae-Yon Sung,<sup>4</sup> Jong Ho Yoon,<sup>4</sup> Suck Joon Hong,<sup>4</sup> Eui Young Kim,<sup>5</sup> and Young Kee Shong<sup>1</sup>

**Background:** Measurement of the serum thyroglobulin (Tg) level with TSH stimulation (sTg) is the cornerstone of monitoring for the recurrence or persistence of differentiated thyroid cancer (DTC) in patients who have undergone surgery and remnant ablation. However, there have been several reports that an undetectable sTg could not predict the absence of future recurrence. The aim of this study was to evaluate the long-term outcome of DTC patients who achieved biochemical remission (BR, defined as sTg < 1 ng/mL) after initial treatment, and to determine the role of repeated sTg measurement in detecting a clinical recurrence.

**Methods:** This is a retrospective observational cohort study in a tertiary referral hospital. There were 1010 DTC patients who achieved BR at 12 months after the initial treatment (surgery and ablation), and they were eligible for analysis. Among them, 787 patients had values of repeated sTg.

**Results:** Thirteen out of 1010 (1.3%) patients had clinical recurrences during a median 84 months of follow-up. All of the clinical recurrences were limited to the cervical lymph nodes without clinical evidence of distant metastasis. Among 787 patients with available repeated sTg, 10 had clinical recurrences (5 out of 750 patients with repeated sTg < 1 ng/mL and 5 out of 37 patients with repeated sTg ≥ 1 ng/mL). Patients with repeated sTg ≥ 1 ng/mL had a much greater chance of disease recurrence (log-rank statistics = 43.7, df = 1,  $p < 0.001$ ).

**Conclusions:** About 1% of DTC patients who had sTg < 1 ng/mL 12 months after initial treatment had a clinical recurrence. All of clinical recurrences were loco-regional recurrences. Although repeated sTg measurement can be helpful to predict recurrence, we could not recommend it for surveillance in patients with BR due to its very low yield.

---

An abstract (P3-656) covering a part of this article was presented at the 93rd Annual Meeting of the Endocrine Society (ENDO 2011), June 4-7, 2011, Boston, Massachusetts.

Departments of <sup>1</sup>Internal Medicine, <sup>2</sup>Nuclear Medicine, <sup>3</sup>Pathology, and <sup>4</sup>Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea.

<sup>5</sup>Department of Endocrinology & Metabolism, Dongnam Institute of Radiological & Medical Sciences, Cancer Center, Busan, Korea.