Is ultrasensitive Tg measurement capable of substituting for Tg measurement after rhTSH stimulation in evaluation of effectiveness of radiiodine ablation in patients with differentiated thyroid cancer

**INTRODUCTION**

Undetectable concentration of Tg after rhTSH stimulation (Tg/rhTSH) is one of the most important criteria in evaluating the effectiveness of radiiodine ablation in patients with differentiated thyroid cancer (DTC) treated with 131I.

**AIM**

To evaluate the possibility of using Tg measurements during L-T4 (Tg/L-T4) treatment by the ultrasensitive method, instead of Tg measurements after rhTSH stimulation (Tg/rhTSH), in assessment of response to the initial treatment of DTC.

**MATERIAL**

The study was performed on 34 consecutive DTC patients after surgery and adjuvant treatment with 131I, referred for evaluation of ablation effectiveness 9 months after 131I treatment.

**METHOD**

Tg measurement was performed in patients during L-T4 treatment at 2 time points: before administration of rhTSH and 5 days after the first injection, using both tests: Tg detection with CLIA (analytical sensitivity 0.2 ng/ml and functional sensitivity of 0.9 ng/ml) and Tg by TRACE (analytical sensitivity of 0.09 ng/ml and functional sensitivity 0.15 ng/ml).

**RESULTS**

1. None of the four cases with indeterminate response to ablation showed elevated Tg/L-T4 concentrations according to the ultrasensitive TRACE assay.

2. Results in our trial group do not entitle us to recommend determinations of Tg/L-T4 with the TRACE method instead of the Tg/rhTSH in assessing the ablation efficacy.

3. It is necessary to validate the method on a larger group of patients.