

## **The Role of Tl-201 Whole Body Scan in Differentiated Thyroid Cancer: Correlation with I-131 Whole Body Scan and Serum Thyroglobulin**

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The aim of this prospective study was to evaluate the role of Tl-201 whole body scan (WBS) in the follow-up of differentiated thyroid cancer patient (pt)s in correlation with I-131 WBS and serum thyroglobulin (Tg) determination.

Thirty-five pts who had previous thyroidectomy and high dose I-131 ablation therapy underwent both I-131 (4mCi) WBS and Tl-201 (3mCi) WBS after optimal endogenous TSH stimulation, and measured serum Tg, concomitantly. In 10 pts, Tl-201 WBS was performed before I-131 high dose (100-200mCi) therapy and post-therapeutic I-131 WBS was obtained 4 days after administration of I-131.

Tl-201 WBS and I-131 WBS were concordant in 69% of pts. Twenty-one percent of 14pts with elevated Tg and negative I-131 WBS were positive Tl-201 WBS, and 17% of 12pts with low Tg and negative I-131 WBS were positive Tl-201 WBS. Positive I-131 WBS findings of all 6 pts with low Tg and negative Tl-201 WBS were focal increased activities within the thyroid bed, suggesting remnant thyroid tissue. In comparison of Tl-201 WBS and I-131 WBS after high dose therapy, 6 out of 7 pts with positive findings in both images showed discrepant uptake lesions. One pt with focal hot lesion in Tl-201 WBS had no abnormal uptake in I-131 WBS after therapy, which lesion was surgically confirmed as metastatic tumor.

In conclusion, Tl-201 WBS can detect recurrent or residual tumors in pts with negative I-131 WBS. Tl-201 WBS before high dose I-131 therapy may have an additional role in predicting the therapeutic response of I-131 therapy.