

## **LOW-RISK DIFFERENTIATED THYROID CANCER PATIENTS NEED NO RADIOIODINE REMNANT ABLATION -A LONG-TERM OUTCOME STUDY**

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**Background/Purpose:** For a long time there is serious debate whether low-risk differentiated thyroid cancer (DTC) patients should be ablated or not, albeit, with small amount of radioiodine.

**Methods:** As per ATA guidelines low-risk(LR) DTC was defined T1, T2 tumor & N0-node, and intermediate-risk(IR) as T3/N1 disease. Recurrence- reappearance of disease after a minimum period of 12-months documented disease-free-status. The experimental cohort (RRA/Gr-A) comprised of 282 (153-LR, 129-IR) patients, females-71.3%, papillary-88.4%, mean age 36.6±13yr, mean 24h RAIU-5.5±0.73%, mean administered <sup>131</sup>I activity 30.3±0.4 mCi. The control group (no-RRA/Gr-B) 293 (168-LR, 125-IR) patients, females-76.1%, papillary-92.2%, mean age 36.1±11yr and mean 24h RAIU-0.2%. Radioiodine was not administered in Gr-B as they were surgically ablated on 2mCi <sup>131</sup>I whole body scan and serum thyroglobulin assay.

**Results:** Patients in both groups were comparable with respect to all baseline parameters. In median follow-up of 44-months (range: 6-252), 19(6.7%) patients had recurrence in RRA group and 12(4.1%) in no-RRA group (p=0.161). No patient died of DTC. Ten-year adjusted Kaplan-Meier analysis showed recurrence rate: 11.3% in Gr-A and 7.5% in Gr-B. On multivariate-analysis, age ≥45yr(OR=3.37, 95%CI=1.49-7.6), T3 tumor(OR=3.13, 95%CI=1.36-7.21), N1b-node(OR=6.42, 95%CI=2.84-14.5), single-dose unsuccessful ablation(OR=6.67, 95%CI=2.8-15.87) were strong predictors of recurrence. Interestingly, in low-risk patients, only 3/321(0.9%) recurred irrespective of RRA. However, 28/254(11%) recurred in intermediate-risk patients (p=0.001). On sub-group analysis, RRA had beneficial effect in older patients and T3 tumors.

**Discussion & Conclusion:** In low-risk DTC patients, RRA seems to be over treatment. RRA had beneficial effect only in older patients (≥45yr) and T3 tumors.