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## **Thyroid**

*PSAT381*

### ***Rising Preoperative TPO Titers Decrease the Risk for Differentiated Thyroid Cancer in a Linear Fashion: A Retrospective Analysis of 1620 Consecutive Thyroid Surgeries***

*Rodis Paparodis, MD, Sarantis Livadas, MD, PhD,  
Evangelos Karvounis, MD, Dimitra Bantouna, MD,  
Ioannis Zoupas, Medical Student, Shanawaz Imam, PhD, and  
Juan Jaume, MD, PhD*

**Introduction:** Chronic lymphocytic thyroiditis is an important risk factor for differentiated thyroid cancer (DTC) in surgical series, but the role of thyroid peroxidase antibodies (TPO) seems less clear in that regard. We designed the present study to evaluate that effect in our large patient population.

**Methods:** We recruited subjects operated with total thyroidectomy in 4 sites (USA: 1, Greece: 3) during a period of 14 consecutive years. We gathered data on TPO antibodies

titers measured with commercially available radioimmunoassays, and reviewed data on surgical pathology. TPO $\geq$ 34IU/ml was deemed high (TPO+). Odds ratios (OR) for DTC were calculated with Fischer's exact test.  $p < 0.05$  was deemed significant.

**Results:** We reviewed data on 8,425 thyroid surgeries, and TPO titers were available for 1,620 subjects: DTC  $n=702$  (43.3%), benign pathology (BEN)  $n=918$  (56.7%), TPO+  $n=524$  (32.3%) and TPO- ( $<34$ IU/ml)  $n=1096$  (67.7%). DTC was found with a lower frequency in TPO+ (183/524, 34.9%) compared to TPO- (519/1096, 47.4%) subjects, OR 0.60 (0.48-0.74,  $p < 0.0001$ ). Subjects with the lowest TPO titers had the highest rate of DTC: TPO  $< 10$ IU/ml  $n=338/635$  (49.3%), TPO 34-100IU/ml  $n=69/162$  (42.6%), TPO 100-500IU/ml  $n=70/168$  (41.7%), TPO 500-1000IU/ml  $n=16/50$  (32.0%), TPO  $>1000$ IU/ml  $n=28/144$  (19.4%),  $p < 0.0001$ .

**Conclusions:** High TPO Antibodies appear protective against DTC in our large multicentre cohort of patients operated with a total thyroidectomy. Rising preoperative TPO titers confer linearly increasing protection against DTC in the surgical specimen. More research is needed to fully understand the role of thyroid autoimmunity in the genesis of DTC.

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