Association Between Hashimoto’s Thyroiditis and Differentiated Thyroid Cancer
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INTRODUCTION: Hashimoto’s thyroiditis is characterized by lymphocytic infiltration of the thyroid gland that produces chronic inflammation. Some studies have shown that the association between thyroiditis and thyroid cancer improves the prognosis of the oncologic disease. The aim of this study was to compare the clinical and pathological findings in patients with thyroid cancer, who additionally had Hashimoto’s thyroiditis, vs those without this entity.

METHODS: This was a retrospective cohort study that included patients undergoing thyroidectomy for thyroid cancer in a university hospital in a low-income country, over a period of 42 months. A bivariate analysis was performed of the clinical-pathologic findings of the population with thyroid cancer, based on the presence or absence of Hashimoto’s thyroiditis.

RESULTS: Records of 959 patients who met the inclusion criteria were retrospectively analyzed. In 160 patients (16.68%), Hashimoto’s thyroiditis was reported in the pathology. In the bivariate analysis, it was found, with statistical significance, that patients with thyroid cancer who additionally had Hashimoto’s thyroiditis, were more frequently women (p = 0.038), had smaller tumor size (p = 0.021), less lymphatic invasion (p < 0.0001), and less extrathyroid extension (p < 0.0001), compared to those patients with thyroid cancer without Hashimoto’s thyroiditis.

CONCLUSION: It was possible to identify that patients with concurrent thyroid cancer and Hashimoto’s thyroiditis have clinicopathologic characteristics that imply less tumor aggressiveness compared to patients with thyroid cancer without Hashimoto’s thyroiditis in the population described.

Metformin Inhibits Tumor Growth in a Murine Model of Anaplastic Thyroid Cancer
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INTRODUCTION: Anaplastic thyroid cancer (ATC) is a rare but devastating malignancy. ATC cells exhibit the Warburg effect and demonstrate high glucose utilization. Our previous experiments have shown that treatment of ATC cells with metformin inhibits proliferation in vitro. We therefore hypothesized that metformin administration and dietary glucose restriction could suppress tumor growth in a murine model of ATC.

METHODS: An orthotopic xenograft model of ATC was generated by injection of 8505C cells into the thyroid lobes of nude immunocompromised mice. Animals (8 mice/group) were provided standard chow diet (SD) or a low-carbohydrate ketogenic diet (KD) and given daily intraperitoneal injections of metformin (250 mg/kg). Treatment groups were monitored for up to 8 weeks and necropsies were performed to assess tumor volumes. Tumor growth rate was calculated by normalizing tumor size to survival time.

RESULTS: Concurrent administration of metformin and KD, but not monotherapy with either, led to smaller tumor volumes (42 vs 122 mm³, p = 0.02) and diminished tumor growth rates (1.4 vs 3.1 mm³/day, p = 0.01) compared to SD control animals. Mice receiving metformin, KD, or both treatments all exhibited similar blood glucose values throughout the study as those given SD only. There was no significant difference in overall survival between experimental groups.

CONCLUSION: Combination therapy with metformin and the ketogenic diet significantly reduced ATC tumor growth in mice. Future studies, particularly in diabetic animal models, may further demonstrate the utility of metformin as an effective treatment for ATC.

Oncocytic Variant of Papillary Thyroid Cancer: Is It More Aggressive?
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INTRODUCTION: The oncocytic variant of papillary thyroid carcinoma (PTC) is rare and has controversial biologic behavior. We aimed to compare clinicopathologic characteristics of patients with oncocytic PTC with a matched classical PTC cohort.
METHODS: A retrospective review of a prospectively collected database identified 98 patients with oncocytic variant PTC between 1998 and 2019, from a single institution. Patients with oncocytic PTC were matched 1:1 by age, sex, and TNM stage with classic PTC patients.

RESULTS: Among the 98 patients with oncocytic variant PTC, 78 (79.5%) were female with a median age of 52 (range 25-80) years. The majority of patients 61 (62.2%) underwent a total thyroidectomy with prophylactic central neck dissection. The median tumor size was 1.35 (range 0.2-5.7) cm, with 5 patients having gross extrathyroidal extension (5.1%). There was no significant difference in pathologic characteristics between the 2 groups, including extrathyroidal extension (15.3% vs 18.3%, p=0.56), multifocality (39.8% vs 45.9%, p=0.38), lymph node positivity (30.2% vs 30.6%, p=0.96), or positive surgical margins (6.2% vs 5.2%, p=0.76), respectively. Both the number of patients who received radioactive iodine and the median dose did not differ between groups. At a median of 17 months follow-up, 2 patients had recurrent disease (2.0%) in the oncocytic group. At a median of 32.5 months follow-up, 4 (4.0%) patients had recurrent disease in classic PTC cohort (p=0.41).

CONCLUSION: Although limited by long-term follow-up data, this is the largest series to date showing that early recurrence rates did not differ between oncocytic variant PTC and classic PTC patients.