**Relationships between Glycemic and Lipid Control and TSH in Euthyroid Latinx Adults- a Community-Based Study**

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**Objectives:** Thyroid hormone abnormalities are among the most common endocrine disorders comorbidly suffered alongside metabolic syndrome and type 2 diabetes mellitus (T2DM). Thyroid hormones and their regulating hormone, thyroid-stimulating hormone (TSH), play a role in metabolism, obesity, insulin resistance and other disorders that share similar mechanisms. The aim of this study was to examine the associations between TSH and clinical measures of chronic disease markers in a Latinx population receiving free health care services at a community clinic.

**Methods:** A needs assessment was conducted on euthyroid Latinx adult patients from a community clinic in south Florida. The medical records of 93 randomly selected patients were cross-sectionally reviewed to collect data on demographics, diagnoses of health conditions, and biomedical laboratory information. The cut-off point for high TSH was ≥2 mU/L and low TSH as <2 mU/L. Statistical analyses included descriptive statistics, independent t-test, chi-squared test, logistic regressions.

**Results:** The mean age was 51.9 ± 11.8 years and 82.8% were female. There were no differences between low and high TSH groups on age, gender, BMI, hypertension, T2DM, CVD, or CVD risk factors. The low TSH group had significantly higher fasting glucose (194.0 mg/dL ± 86.2 vs 140 mg/dL ± 52.8, P = 0.046), hemoglobin A1c (9.6% ±2.8 vs 7.5% ±1.5, P = 0.018), and total cholesterol (200.5 mg/dL ± 32.8 vs 171.5 mg/dL ± 39.7, P = 0.034) compared with the high TSH group. Subgroup analysis of those with T2DM revealed that the low TSH group also had a greater proportion of patients with high fasting glucose (≥170 mg/dL) and high hemoglobin A1c (≥8.5%) compared with the high TSH group. Similarly, those with a low TSH had 6 times greater odds of having high fasting glucose (OR 6.66, 95% CI 1.31–33.69, P = 0.022) and high hemoglobin A1c (OR 6.11, 95% CI 1.19–31.16, P = 0.029).

**Conclusions:** In Latinx euthyroid patients receiving medical services at a community clinic, a relationship between low-normal TSH levels, fasting glucose and hemoglobin A1c was demonstrated. As the population ages and the risk of both obesity and multimorbidity increases, understanding how thyroid hormone dysfunction can influence chronic disease status may help address health disparities suffered in disadvantaged and vulnerable populations.

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