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## **Thyroid**

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***Changes In Thyroid Function Test With Tirzepatide  
Use In Patients With Hypothyroidism***

***Gayoung Kaylee Yu, M.D, Samer Nakhle, M.D.,  
Nicholas John Vernetti, MD, and Alex Chao, DO***

HCA Sunrise Health GME Endocrinology Fellowship/Palm  
Medical Group Endocrinology, Las Vegas, NV, USA

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**Background:** Incretin hormone Glucacon-like peptide-1 receptor agonist (GLP-1RA) has been established to treat type 2 diabetes or obesity. A novel dual-receptor agonist to GIPR/GLP-1R, tirzepatide has been approved for type 2 diabetes mellitus treatment and has shown greater weight loss compared to GLP1-RA. Also, since GLP-1 and GIP have effects on multiple organs/tissue including the gut, tirzepatide may have additional effects on levothyroxine absorption. **Method:** We retrospectively reviewed the charts of patients with hypothyroidism and newly given prescriptions of tirzepatide (Mounjaro) at our outpatient clinic from July 1, 2022, to Nov 30, 2022. Baseline thyroid function test results and follow-up test results were reviewed. **Result:** A total of seventy patients' data were identified and reviewed. Patients with insufficient data, early termination of the therapy, and patients whose levothyroxine doses were adjusted at the same time of tirzepatide initiation were excluded. A total of 17 patients on stable dose of levothyroxine replacement who had lab prior to starting tirzepatide and repeated lab within 4 to 8 weeks after that were found and included in the study. TSH of 5/17 patients (29%) was suppressed below the normal range at 6 weeks. TSH of 11/17 patients (65%) decreased compared to baseline. The mean baseline TSH was 2.288. Repeat test was done in 4-8 weeks, (mean 53.28 days, median 47 days), and mean TSH was 1.569. **Conclusion:** We were able to review only seventeen patients' thyroid function tests, but there was TSH reduction in 65 % of patients, and 5(29%) out of 17 patients had suppressed TSH in 6-8 weeks (mean 53.28 days, median 47 days). Our results suggest monitoring TSH early after starting tirzepatide might be necessary to avoid iatrogenic hyperthyroidism. We suspect factors other than weight loss play a role in the thyroid hormone level because of early changes in TSH prior to achieving significant weight loss.

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