A 45-year-old woman with cystic fibrosis (delF508/delF508), pancreatic exocrine insufficiency, and diet-controlled cystic fibrosis-related diabetes presented with new complaints of dry skin, hair loss, and cold intolerance. She had no personal or family history of thyroid disease. Physical exam was notable for a mildly enlarged, non-tender thyroid gland without nodules, and 2+ bicep reflexes with delayed relaxation phase. Labs revealed a TSH of 17 mcIU/mL (n 0.3-4.20 mcIU/mL), free T4 of 0.6 ng/dL (n 0.9-1.7 ng/dL), and a thyroid peroxidase antibody of 15 units/mL (n 0-34 units/mL), consistent with new onset, overt hypothyroidism. Thyroid ultrasound revealed a
hypervascular, heterogeneous gland, suggestive of underlying autoimmune thyroid disease. Given such an abrupt and significant change in previously normal thyroid studies, further history was obtained. The patient disclosed taking TauriNac, a supplement discovered online that is believed to help clear heavy metals, which she believed she was exposed to via IV antibiotics, and for treatment of her cystic fibrosis. The patient was taking 3-4 packets of TauriNac per day, totaling 16,000 mcg of potassium iodide, far exceeding the Recommended Dietary Allowance of 150 mcg per day. She discontinued TauriNac and one month later, thyroid function tests normalized. The patient then resumed TauriNac, 2-3 packets per day, and within five months TSH rose to 9.66 mcIU/mL with free T4 0.9 ng/dL. She again stopped taking TauriNac and two months after discontinuation thyroid levels normalized. Later, after yet again resuming TauriNac, 5 packets per week, her TSH increased to 4.71 mcIU/mL. She subsequently discontinued TauriNac with normalization of her TSH after three months. Over one year later, she remains off TauriNac and is clinically and biochemically euthyroid.

In the 1970s, development of a goiter and hypothyroidism was reported in CF patients, especially those treated with iodine-based expectorants, raising concern for underlying thyroid dysfunction in CF; however the true prevalence of underlying thyroid dysfunction in CF patients is controversial. A 2016 United States-based study of CF patients revealed abnormal thyroid function tests in 27%, however the abnormalities were mild, and overt thyroid dysfunction was rare. In our center’s experience, transient subclinical hypothyroidism associated with CF exacerbations is common and may correlate with poor dietary intake leading to iodine deficiency. In this case, excessive iodide intake via TauriNAC clearly correlated with the development of symptomatic hypothyroidism, presumably due to failure to escape the Wolff-Chaikoff effect. In a 2002 survey of adult CF patients, 70% reported having taken complementary and alternative medicine (CAM) in the past. The high prevalence of CAM use in the CF population as well as prior studies demonstrating iodine induced hypothyroidism in CF patients should inform providers of the potential harmful effects of iodine supplementation in an iodine-replete population.

Presentation: Saturday, June 11, 2022 1:00 p.m. - 3:00 p.m.