

MARK FRYE: Hello. My name is Dr. Mark Frye, and I'm a psychiatrist at Mayo Clinic. We get a lot of questions posed to us by patients and by clinicians who refer to the Mayo Clinic Depression Center on how best to optimize lithium treatment. It's a great question. Lithium is a mainstay for treatment in bipolar disorder, as well as really augmenting antidepressants for major depressive disorder.

Quite frequently, we get this question about how best to use lithium and what happens when we see these minor fluctuations in thyroid function tests. And again, I would really emphasize "minor." These are slight changes in thyroid-stimulating hormone, TSH, or slight changes in circulating levels of free thyroxine, or free T4.

They're changes that are within the range of normal. They're changes that an endocrinologist probably would not make any recommendations to use thyroid hormone. But some of our data from the Depression Center would suggest that low-dose levothyroxine augmentation of lithium may, in fact, be quite helpful.

Case in point was a study that was done really looking at the relationship between mean levels of free thyroxine that we can measure by blood test and measures of mood stability, specifically, number of cycling episodes per year and a patient report of depressive symptom severity known as the BDI.

And what this data showed was, even within the range of normal, that lithium maintained patients with a free T4 that was in the lower range of normal had higher rates of mood cycling and higher rates of depression. Patients with a mean free T4 that was in the upper limit of normal had less cycling, had less patient-report depression.

And again, to emphasize, these are thyroid values that are within the range of normal. These are not patients who developed hypothyroidism or subclinical hypothyroidism during lithium treatment, which actually is not an infrequent occurrence.

But this data really underscored to us that there may be merit in really making sure that thyroid function is as optimally managed as possible during the course of lithium maintenance treatment, suggesting that there may be utility in looking at low-level thyroid augmentation to keep those mean free T4 levels in the upper limit of normal and a commensurate TSH level that's in the lower limit of normal.

This is not making someone hyperthyroid. That is not the goal here. We know that there can be consequences of that from an endocrine or cardiovascular standpoint. But for us at the Mayo Clinic Depression Center, when looking at long-term lithium maintenance, we really look at the potential merit of using adjunctive levothyroxine.

I'm Dr. Mark Frye from the Mayo Clinic. Thank you for listening.