Thyroid hormone treatment for lithium-induced thyroid dysfunction in mood disorder

I read with interest the article by Joffe[1] about thyroxine (T4) supplementation for lithium-induced subclinical and clinical hypothyroidism in patients with bipolar disorder. Given the paucity of clinical guidelines in this area, I would like to discuss 4 important issues related to thyroid hormone supplementation for lithium-induced thyroid dysfunction.

First, growing literature suggests that triiodothyronine (T3) and T4 may have differential augmenting effects in mood disorders. T3 augmentation may potentiate antidepressants[2] and may be beneficial for patients with treatment-resistant depression and hypothyroidism who were also receiving T4.[3] T4 appears to be effective in augmenting the effects of mood stabilizers in patients with bipolar disorder.[4] Although T4, rather than T3 supplementation, has been recommended for hypothyroidism because T4 produces steadier hormone levels,[5] the efficacy of T3 in the treatment of hypothyroidism has also been well documented.[6] Taking into account the differential augmenting effects of T3 and T4 and the efficacy of T3 in the treatment of hypothyroidism, T3 supplementation may be preferable for lithium-induced hypothyroidism in patients with unipolar depression and T4 in patients with bipolar disorder.

Second, when T4 supplementation is considered for modest elevations above the normal range of thyroid stimulating hormone (TSH) in a symptomatic bipolar patient with lithium-associated hypothyroidism, careful titration of T4 dosage is required to prevent suppression of TSH below the normal range and subclinical hyperthyroidism from developing.

Third, T4 prophylactic supplementation can be considered for a patient with symptomatic rapid cycling bipolar disorder with a mildly elevated TSH level associated with lithium treatment. Further, T4 suppressive therapy can be used with caution even if TSH levels correspond to the upper limit of normal range during lithium therapy. Since there are no clinical guidelines regarding a safe lower threshold for TSH concentration in TSH-suppressive therapy, levels should be kept within the lower part of normal range.

Fourth, although the effects of T4 on clinically significant bone loss in post- or pre-menopausal women receiving TSH-suppressive T4 are controversial,[7,8] regular bone mineral density assessments and prophylactic calcium treatment should be carefully considered during T4 supplementation in post-menopausal women with bipolar disorder. Given the risk of lithium-induced hyperparathyroidism in some patients, parathyroid function should be assessed before calcium supplementation is initiated.

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Competing interests: Dr. Ramasubbu has served on the advisory board of Eli Lilly.

References

1. Joffe RT. How should lithium-induced thyroid dysfunction be managed in patients with bipolar disorder? *J Psychiatry Neurosci* 2002;27:392.
2. Aronson R, Offman HJ, Joffe RT, Naylor CD. Triiodothyronine augmentation in the treatment of refractory depression. A meta-analysis. *Arch Gen Psychiatry* 1996;5:842-8.
3. Cooke RG, Joffe RT, Levitt AJ. T3 augmentation of antidepressant treatment in T4-replaced thyroid patient. *J Clin Psychiatry* 1992;53:16-8.
4. Barcer MS, Whybrow PC. Rapid cycling bipolar affective disorder II. Treatment of refractory rapid cycling with high-dose levothyroxine: preliminary study. *Arch Gen Psychiatry* 1990; 47:435-40.
5. Kleiner J, Altshuler L, Hendrick V, Hershman JM. Lithium-induced subclinical hypothyroidism: review of the literature and guidelines for treatment. *J Clin Psychiatry* 1999;60:249-55.
6. Walsh JP, Stuckey BG. What is the optimal treatment for hypothyroidism? *Med J Aust* 2001;174:141-3.
7. Gyulai L, Bauer M, Garcia-Espana F, Hierholzer J, Baumgartner A, Berghofer A, et al. Bone mineral density in pre- and post-menopausal women with affective disorder treated with long term L-thyroxine augmentation. *J Affect Disord* 2001;66:185-91.
8. Kung AW, Yeung SS. Prevention of bone loss induced by thyroxine suppressive therapy in post-menopausal women: the effect of calcium and calcitonin. *J Clin Endocrinol Metab* 1996; 81:1232-6.

Manic-switch induced by fluvoxamine in abstinent pure methamphetamine abusers

On a global level, methamphetamine (MAP) is typically abused in combination with other drugs of addiction. However, in Japan, many MAP abusers use the drug alone.[1] The depressive state caused by MAP, generally seen during the withdrawal period, generally disappears within several days.[2,3] However, in cases where the depressive symptoms persist, treatment with antidepressants, including the tricyclic antidepressants and selective serotonin reuptake inhibitors (SSRIs), may be nec-