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Requested DocAlert: Lithium in the Long Run: Renal and Thyroid Toxicity

2 messages

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Fri, Jul 17, 2015 at 12:36 PM

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Lithium in the Long Run: Renal and Thyroid Toxicity

Information sourced from *NEJM Journal Watch*:

Lithium in the Long Run: Renal and Thyroid Toxicity

Lithium is a first-line mood stabilizer but requires delicate dose adjustments and vigorous monitoring for renal, thyroid, and parathyroid effects.

Lithium has renal, thyroid, and parathyroid effects, which are well documented but mostly in short-term studies. Using data from a laboratory information system in the U.K. between 1985 and 2014, researchers compared creatinine, thyroid-stimulating hormone (TSH), and calcium values in 2795 patients with at least two lithium levels and in 689,228 patients not taking lithium (median follow-up, 3 years).

After the presence of diabetes was controlled for, lithium was associated with elevated risks of stage 3 kidney disease (glomerular filtration rate, <60 mL/min), hypothyroidism (TSH, >5.5 mU/L), and elevated total (but not ionized) calcium. Young women were the group at greatest risk for renal and thyroid effects. Overall, adverse effects were greater with higher-than-median lithium levels and shorter length of treatment.

COMMENT

These findings highlight the importance of (1) optimizing lithium dose to the minimum required for efficacy and (2) monitoring patients early in the course of treatment when those who are vulnerable, especially young women, might begin to show effects.

Stage 3 kidney disease is not necessarily serious; few lithium-treated patients (1%–2%) go on to develop end-stage renal disease. In addition, concomitant use of the diuretic amiloride can often help minimize renal effects.

This study did not monitor parathyroid hormone levels. Calcium levels are only a proxy for hyperparathyroidism, which although rare, does occur. Thus, monitoring both calcium and parathyroid levels is also important.

The study results remind us that, despite lithium's first-line status as a mood stabilizer (*NEJM JW Psychiatry* Feb 2010 and *Lancet* 2010; 375:385) and its antisuicidal effects

(*NEJM JW Psychiatry* Aug 2013 and *BMJ* 2013; 346:f3646), the medication can be toxic and requires delicate dose adjustments and vigorous monitoring.

Peter Roy-Byrne, MD reviewing Shine B et al. Lancet 2015 May 20.

CITATION(S):

Shine B et al. Long-term effects of lithium on renal, thyroid, and parathyroid function: A retrospective analysis of laboratory data. *Lancet* 2015 May 20; [e-pub].
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