

# Monitor Thyroid Function After Stopping Lithium

## Case report: Can Lithium Mask An Underlying Thyrotoxicosis?

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### Introduction

- Uncommonly, thyrotoxicosis can occur with lithium treatment and rarely after lithium cessation.
- This case report documents a case of worsening thyrotoxicosis after lithium cessation in a manic patient.



	Aug 2019	Feb 2020	Early-Mar 2020	Mid-Mar 2020	May 2020
TSH (0.4-4.0mIU/L)	0.04 - 0.25	0.01	<0.01	<0.01	<0.01
Free T4 (9-25pmol/L)	13 - 15	27	40	32	22
Free T3 (3.5-7.8pmol/L)	n/a	7.7	9.2	n/a	8.2

Table 1: Patient's thyroid function tests (TFT)  
TSH: thyroid stimulating hormone, T4: thyroxine, T3: triiodothyronine, n/a: not available, bolded months represent admission and discharge

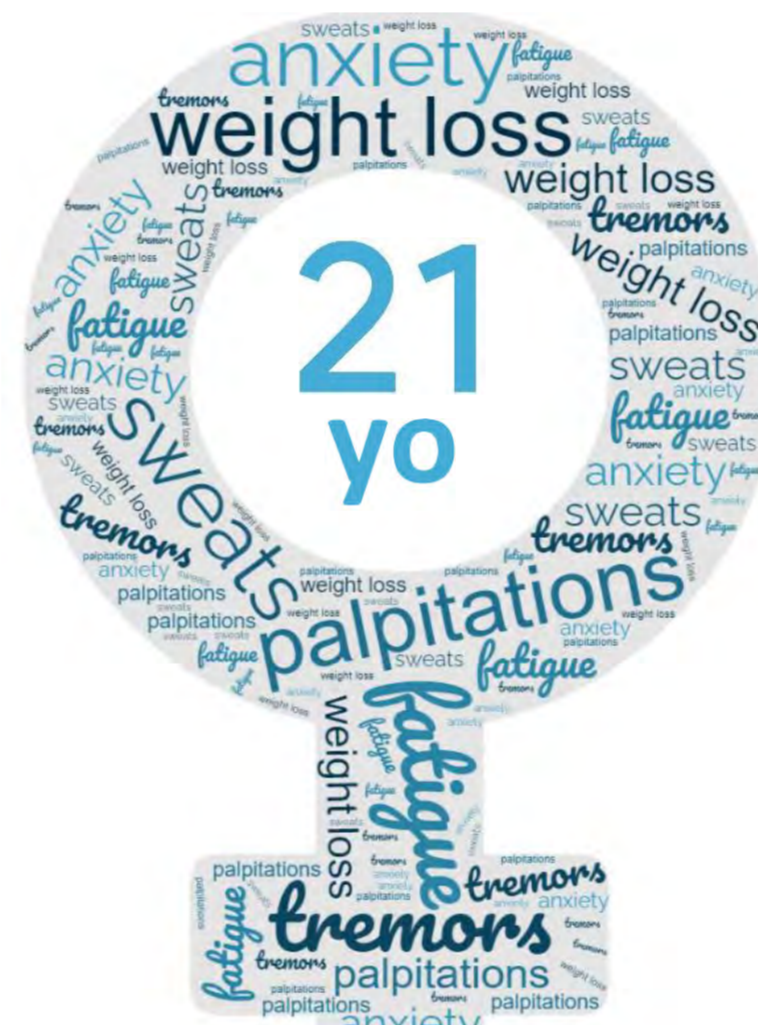
### Literature review

- Prevalence of thyrotoxicosis is low (0.6-3.9%) with lithium due to its antithyroid effects<sup>1,2</sup>.
- Mechanism of lithium-induced thyrotoxicosis is unclear.
- Incidence of thyrotoxicosis post-cessation of lithium treatment is unknown and is described in 8 other case reports from 1976 to 2008<sup>3-8</sup>.
  - The case reports included 3 males, 5 females, age ranging from 21 to 64 years old.
  - Many patients had been taking the lithium long-term, in one case up to decades.
  - Thyrotoxicosis developed as early as three weeks post-lithium cessation or appeared six months later, irrespective of symptoms.
  - One male case who had a lithium reduction rather than total withdrawal also experienced thyrotoxicosis.
  - Most patients received carbimazole treatment to successfully resolve the thyrotoxicosis, however, there were some cases of spontaneous remission.
  - Lithium re-initiation occurred in three patients during thyroid treatment, with no documentation of adverse effects.
- Our case patient fits the demographics in literature.

### Case Progress and Outcomes

Admitted to hospital for mania early March 2020.

- history of bipolar disorder
- had thyrotoxicosis symptoms →



- medication history noted she took nil regular medications on admission,
- previously took lithium but stopped in March 2019, taken for duration of 2 years
- stopped due to unknown reason
- investigated for increased thyroid function pre-admission

Discharged late April 2020

- Endocrinology follow-up planned
- medications on discharge: carbimazole 25mg bd (increased during admission), atenolol 25mg bd, olanzapine 5mg bd, aripiprazole 400mg IM monthly, short-term lorazepam 1mg bd
- TFTs improving by May 2020

- thyroid function screened (see table)
- diagnosed with thyrotoxicosis

- mania treatment: aripiprazole and olanzapine
- thyroid treatment: carbimazole and atenolol

### Discussion and Pharmacist Recommendations

- Understand the incidence of this side effect
- Comprehensive medication history to detail lithium e.g., duration taken, when ceased, effectiveness, other side effects, thyroid function tests before, during and after treatment
- This may help predict decision-making with psychiatry team on lithium re-initiation, continuation or cessation during thyrotoxicosis treatment.
- The small number of cases showed that thyroid dysfunction does not necessarily preclude lithium use if otherwise indicated and can safely be achieved in a hospital setting.
- Additionally, lithium has been recommended as an adjunctive treatment in refractory hyperthyroidism<sup>8</sup>.
- Additionally, it would be prudent to monitor thyroid function at least three weeks after lithium cessation for early thyrotoxicosis detection and counsel patient on symptoms to report to health care provider.
- Symptoms of thyrotoxicosis may overlap with or exacerbate mania symptoms as may have happened in this case, but they are clearly differentiated with Endocrinology and Psychiatry input.

### References

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### Conclusion

- Thyrotoxicosis may occur after lithium cessation
- Suggest monitoring thyroid function at least three weeks after lithium cessation to detect thyroid dysfunction
- Lithium may be safely restarted during thyrotoxicosis treatment

For more information

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