Findings that shed new light on the possible pathogenesis of a disease or an adverse effect

Strange taste and mild lithium intoxication

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Summary

So far, it has not been emphasised that lithium can lose or change taste in some patients. This report addresses such side effect of lithium. A 61-year-old bipolar patient experienced taste changes while increasing lithium levels up to 1.28 mEq/l and the taste changes returned to normal after lithium discontinuation. The present findings suggest that changes in tastes may be a symptom of mild lithium intoxication.

BACKGROUND

It is generally accepted that lithium has a variety of side effects and a risk of lithium intoxication. Nonetheless, at the moment, mood stabilising effects of lithium are also well-established and most psychiatrists prescribe lithium as a first line treatment for bipolar disorder. Despite a few case reports,^{1–3} it has not been generally known that lithium can lose or change taste in some patients, which may lose appetite and induce lower adherence.

CASE PRESENTATION

In October 2009, a 61-year-old man found a change in his taste. He experienced changes in tastes of various foods and drinks, and consequently found disgust to sour taste, salty taste, oily food, fresh vegetables, cold water and juice, warm water and sweet taste in this order up to December 2009 (figure 1). Also, he felt lethargic during this period, although he was still in a euthymic mood. He is a physician with bipolar disorder which was diagnosed in

Figure 1 Time course of taste changes during lithium treatment.

2001. Initially, he had received 2–6 mg/day of haloperidol for his manic phases, which could not prevent his depressive phases. Since June 2006, he began to receive lithium alone, which was increased from 200 to 800 mg/day. From August 2006 to July 2009, his serum lithium levels were in the therapeutic range of 0.4 to 0.9 mEq/l.

He complained of a strange and unpleasant taste even in mineral water. His body weight was decreased from 59.5 kg to 57.0 kg over one month a half. During this period, his physical condition was not changed except loss of appetite and body weight.

INVESTIGATIONS

In December 2009, his lithium level was found to be 1.28 mEq/l and mild lithium intoxication was suspected.

DIFFERENTIAL DIAGNOSIS

- ▶ Impairment of sensation (a peripheral symptom of the tongue).
- ▶ Impairment of perception (a central symptom of the brain).

TREATMENT

Two days later, lithium was discontinued and subsequently his lithium levels were decreased gradually (figure 1).

OUTCOME AND FOLLOW-UP

In response to the decrease of serum lithium levels, his taste recovered in reverse order (figure 1). His lethargy also improved. Instead of lithium, valproate was started and there occurred no change in taste. When last seen in December 2010, he was well and his appetite and body weight increased.

DISCUSSION

This bipolar patient experienced taste changes while increasing lithium levels up to 1.28 mEq/l and the changes in taste returned to normal after lithium discontinuation, which suggest lithium as a probable cause of taste changes. Moreover, the taste changes induced loss of appetite and body weight. A few researchers^{1–3} have reported taste changes associated with lithium. There may be two

types of taste changes. One is change in taste. Duffield¹ described that a few days after starting lithium, his patient noticed a strange and unpleasant taste associated with butter and celery, where the new flavour seemed superimposed on the original taste. This type may be an impairment of perception (ie, a central symptom of the brain) due to lithium. Another is a complete loss of the taste. Bressler² reported that since taking lithium his patient completely lost his taste for salt and he was putting as much as half a shaker of salt into his soup and a quarter of an inch of salt on his steak, where the massive dosage of sodium might have decreased his serum lithium levels from 0.84 to 0.48 mEq/l while continuing the same lithium dosage of 1200 mg/day. This type may be an impairment of sensation (ie, a peripheral symptom of the tongue such as taste buds, facial nerve, glossopharyngeal nerve and vagus nerve) due to lithium. The present case may correspond to the former type, and it seems likely that changes in tastes were impairment of perception due to lithium, and they were expressed as disgust to various tastes by the patient.

It should be noted that the order of the appearance of change of various tastes and that of disappearance was reverse. This finding suggests that each threshold may be set for a kind of taste. Interestingly, the fact that sweet taste changed last and recovered first indicates that the threshold for change in sweet taste may be the highest.

Learning points

- ▶ Changes in tastes may be induced by lithium.
- ▶ Changes in tastes may be a symptom of mild lithium intoxication.

Competing interests None.

Patient consent Obtained.

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