



UMEÅ UNIVERSITET

Umeå University Medical Dissertations, New Series No 2220

Affective disorders and their treatments – Implications for thyroid function

Ingrid Lieber

Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av
medicine doktorsexamen framläggs till offentligt försvar i Aulan, Sunderby sjukhus,
fredagen den 3 mars, kl. 13:00.
Avhandlingen kommer att försvaras på engelska.

Fakultetsopponent: professor, John McGrath,
The University of Queensland, Australien

Department of Clinical Sciences
Umeå University, Umeå 2023

Organization
Umeå University
Clinical Sciences

Document type
Doctoral thesis

Date of publication
10 February 2023

Author

Ingrid Lieber

Title

Affective disorders and their treatments – implications for thyroid function

Abstract

The relationship between affective disorders, mood-stabilisers and thyroid dysfunction is complex and poorly understood. The overall aim of this thesis was to examine aspects of the diagnosis and treatment of thyroid dysfunction in individuals with affective disorders, with a particular focus on lithium. Studies 1–4 were part of the LiSIE (Lithium - Study into Effects and Side Effects) retrospective cohort study in individuals with bipolar (BD) or schizoaffective disorder (SZD), or individuals with depression treated with lithium. Study 5 used a Delphi consensus exercise with participants from three specialties; psychiatry, endocrinology/internal medicine and general practice, and two countries; Sweden and the UK.

Study 1 showed that of 1340 individuals with lithium treatment, 90 had developed hypothyroidism whilst treated with lithium and later discontinued lithium. Of the 85 individuals available for follow-up, 41% later stopped thyroid hormone replacement therapy (THRT). Of these, only six individuals later needed reinstatement of THRT. Study 2 showed that of 1564 individuals with BD or SZD, 291 had received THRT at some point. In 41%, THRT had been started for subclinical hypothyroidism. The median TSH concentration at start of THRT decreased annually. Study 3 showed that of the 897 lithium-treated individuals with BD or SZD, 53 individuals had experienced 65 episodes of unintentional lithium intoxication over the 21-year review period. In nine episodes, fT4 was elevated at the time of lithium intoxication, yielding an incidence of 1.3 episodes/1000 person-years. For all episodes, an alternative explanation for lithium intoxication other than elevated fT4 could be identified. Study 4 showed that of 896 individuals with BD or SZD treated with lithium, 16 patients had experienced an episode of hyperthyroidism yielding an incidence of 0.9 episodes/1000 person-years. There were no significant differences in the risk ratios for hyperthyroidism based on the history of lithium exposure. Study 5 showed that consensus on the diagnosis and treatment of subclinical hypothyroidism was difficult to achieve. Particularly, a TSH threshold ≥ 20 mIU/L for starting THRT, as suggested in a previously published guideline, was considered too high. Our results show that (1) in most cases, lithium-associated hypothyroidism may be reversible, (2) the threshold for starting TRHT decreases over time, (3) the occurrence of unintentional lithium intoxication with concurrent hyperthyroxinaemia was uncommon, (4) lithium-associated hyperthyroidism was uncommon with similar risks in concurrently, previously or never-exposed lithium participants, and (5) that the diagnosis and treatment of subclinical hypothyroidism remains an area of clinical practice in which consensus is difficult to achieve.

Keywords

Bipolar disorder; affective disorder; lithium; thyroid dysfunction; thyroxine; thyroid stimulating hormone, mood stabiliser; hyperthyroidism; hypothyroidism, Delphi-consensus

Language

English

ISBN

Print: 978-91-7855-966-4
PDF: 978-91-7855-967-1

ISSN

0346-6612

Number of pages

108 + 5 papers