Thyroid Function and Mood
Implications for the Treatment of Mood Disorders

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Summary

The occurrence of mental changes in patients with hyperthyroidism and hypothyroidism is well known. In contrast, the role of thyroid function in patients with depression is still controversial. However, it is certain that some depressed patients have a tendency towards hypothyroidism.

Thyroid function should be carefully checked in depressed patients, especially in those who are elderly or in the postpartum period. The thyrotrophin-releasing hormone (TRH; protirelin) test is a useful psychoendocrine test.

Thyroid hormones augment the effect of tricyclic antidepressants, and large dosages of these hormones influence the periodic recurrence of mood disorders. Therefore, thyroid hormones can be used as adjunctive therapy in patients with refractory depression. They may also be considered as candidate therapy for the treatment of intractable cycling psychoses.
Mental changes in patients with thyroid diseases are well characterised phenomena and were first reported in the nineteenth century. In 1937, Cronin described a case of myxoedematous psychosis in his novel ‘Citadel’. However, it was not until the 1970s that the exact nature and function of the hypothalamic-pituitary-thyroid axis (see fig. 1) and precise methods for the determination of hormones related to this axis were developed. Subsequently, the role of this axis in various psychoses has been extensively studied.

Dysfunction of the axis is especially important in mood disorders, and it is regarded as one of the biological markers of depression. The relationship between thyroid hormones and mood disorders has been reviewed by several authors. Thyroid hormones have an important place in the treatment of refractory depression and periodically recurring psychoses.

1. Mood Changes Associated with Thyroid Disorders

1.1 Endocrine Psychosyndrome (Bleuler)

Functional disorders of the thyroid and of many other endocrine systems are associated with various degrees of cognitive, mood and behavioural disturbance. Bleuler termed these changes ‘endocrine psychosyndrome (endokrines Psychosyndrom)’. This syndrome consists of a number of symptoms (table I), and is observed in patients with mild and chronic endocrine disorders. Many of the psychiatric symptoms observed in patients with thyroid dysfunction are also those observed in patients with this syndrome. However, the term can also be applied to mental symptoms associated with physiological hormonal changes. For example, premenstrual syndrome, postpartum mood disorders and menopausal psychiatric symptoms may be regarded as part of the endocrine psychosyndrome. In acute and severe endocrine disturbances, the dominant symptoms are changes of consciousness or delirium. In chronic and severe endocrine diseases, brain damage and dementia may occur.

1.2 Hyperthyroidism

Behavioural and psychiatric aspects of hyper- and hypothyroidism have been reviewed by Hall and Whybrow.

In the nineteenth century, Graves and Basedow documented hysterical or psychotic states in patients with hyperthyroidism. Patients with hyperthyroidism complain of subjective anxiety, tense dysphoria, emotional lability, insomnia and cognitive changes. The main symptoms have been summarised as nervousness, i.e. a combination of motor tremor and subjective anxiety. Psychotic symptoms associated with severe hyperthyroidism, such