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EGM clinical case

Depression: An unrecognized presentation of hyperthyroidism in old age

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1. Introduction

It is well documented that symptoms of hyperthyroidism may be similar to those observed in patients with psychiatric disease, most commonly affective disorders. Classical manifestations reported include dysphoria, anxiety, emotional lability, tremor, restlessness and rapid speech. Overactivity of the adrenergic system caused by hyperthyroidism might explain the similarity to clinical manifestations of mania and anxiety [1].

However, hyperthyroidism can also present with symptoms more frequently described in hypothyroid states, namely suggestive of depression - apathy, lethargy, fatigue, anorexia and decreased cognition. Such an atypical presentation is especially frequent in older people, and was first described as apathetic thyrotoxicosis by Lahey in 1931 [2]. The pathogenesis of depression in hyperthyroid states in less clear: prolonged hyperthyroidism might exhaust noradrenergic transmission and therefore contribute to depression [1].

2. Clinical case

We report the case of MB, a 67-year-old woman whose psychiatric admission to our Day Care Hospital was due to a depressive episode unresponsive to antidepressant treatment. At admission, depressive mood, anhedonia and anergia were remarkable. Biological rhythms were unaltered. Intravenous clomipramine was initiated (maximum dose of 225 mg id), but after two weeks no improvement was apparent.

Further assessment brought to attention that the patient had been medicated with levothyroxine (0.150 mg id) 7 years before, when she was diagnosed with Hashimoto thyroiditis. Thyroid hormone levels had been obtained six months before, and were normal at that time. Thyroid laboratory exams performed during admission at the Day Care Hospital documented subclinical hyperthyroidism: supressed serum TSH (0.005uIU/mL) with normal thyroxine (fT4) and triiodothyronine (fT3), in apparent relation with excessive thyroid hormone therapy. A laboratorial evaluation of thyroid autoimmunity documented moderately elevated levels of anti-thyroperoxidase (61 IU/mL) and anti-thyroglobulin (84 IU/mL) antibodies.

After withdrawal of hormone therapy there was dramatic clinical improvement in a few days, with rapid remission of depressive symptoms. Levothyroxine was reintroduced a week later at a lower dosage (0.025 mg id), with subsequent normalization of the thyroid laboratory parameters. Antidepressant medication was maintained in low dosage (clomipramine 75 mg id), with sustained remission of the mood disorder during a 3-year period of follow-up.

3. Discussion

Mood disorders attributed to the effect of medications rely on clinical judgment about causality. Such causal relationships are characterized by a temporal relationship between drug administration and the onset of the mood episode, positive cases of de-challenge and re-challenge with the substance, and plausibility for a biological role.

In our clinical case, the withdrawal of levothyroxine and subsequent normalization of TSH levels were quickly followed by clinical improvement of the depressive symptoms. Besides, a putative role for thyroid hormones in mood regulation has been consistently demonstrated.

The patient's history of autoimmune thyroiditis should also be equated in what concerns her affective disorder. Autoimmune thyroid conditions have been associated with more significant brain perfusion abnormalities and more severe anxiety and depressive symptoms in euthyroid patients [1,3]. Increased antibody reactivity to brain tissue and gangliosides has also been reported in patients with Hashimoto's thyroiditis [4].

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This example of depression in late life, attributed to an underrecognized yet well-characterized presentation of hyperthyroidism in older people, underlines the importance of monitoring chronic thyroid replacement therapy. In fact, subclinical hyperthyroidism, defined as a decrease in serum TSH concentration below the reference range, with normal serum T4 and T3 concentrations, is commonly of iatrogenic nature. Inadvert overtreatment may in fact occur in 20% of patients medicated with levothyroxine [5].

It should be noted that subclinical hyperthyroidism has significant consequences in terms of morbidity and mortality, namely due to increased risk of atrial fibrillation and osteoporosis [6,7]. Prompt recognition and treatment is therefore mandatory.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

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