

Refractory depression in a patient with peripheral resistance to thyroid hormone (RTH) and the effect of triiodothyronine treatment

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Abstract

We here described a 39-year-old woman with a severe chronic mood disorder, refractory to antidepressive therapy who showed a significant improvement after a self-prescription of high doses of liothyronine (T₃). A modified Refetoff protocol was carried out to study the role of thyroid hormones on her clinical and biochemical responses. Depression severity was assessed by the HAM-D and MADRS Depression Rating Scales. Sequencing of Thyroid Receptors (TR) α 1 and β 1 genes was done. At the final stage of the study, plasma T₃ and free T₃ were >800 ng/dl (80–180) and 1409 pg/dl (230–420), respectively. No changes in the cardiovascular parameters, alkaline phosphatase isoenzymes, creatinine kinase, or ferritin were observed. However, an improvement in mood was detected by specific scores (HAM-D 24 to 8; MADRS 40 to 11). No mutations in DNA- and hormone-binding-domains of TR β 1 and TR α 1 genes were found in proband, suggesting that the defect could be due to an unknown mutation in either the TR gene or a post receptor abnormality. These results support the existence of a peripheral RTH manifestation as a refractory chronic depression reverted by high doses of T₃. Screening for RTH in refractory chronic depression may provide an alternative treatment for this psychiatric condition.