Thyroid Autoimmune Antibodies and Major Depressive Disorder in Women

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Abstract

Introduction: Anti-thyroid antibodies are associated with extra-thyroid diseases such as Graves’ ophthalmopathy and Hashimoto’s encephalopathy. Some evidence suggests that anti-thyroid antibodies are also associated with depression. Interleukin (IL)-17 appears to play an important role in autoimmune thyroid disease. This study investigated whether specific thyroid autoantibodies and IL-17 distinguished persons with depression from non-depressed controls. Materials and Methods: Forty-seven adult females with non-psychotic, current major depressive disorder and 80 healthy female controls participated in this study. Thyroid peroxidase antibodies, thyroglobulin antibodies, thyroid-stimulating hormone (TSH) receptor antibodies, free T3 and T4, TSH and IL-17 were measured from the serum. Measurements were repeated to assess test-retest reliability. Receiver operating characteristic (ROC) curves were used to estimate discriminatory values of the measurements. Differences between groups and associations between the clinical and biochemical assessments were analysed. Results: Median TSH receptor antibody concentration was significantly higher in the depressed than control group (P <0.001). Area under the ROC curve was 0.80 (95% CI, 0.73 to 0.88). Higher TSH receptor antibody titres were associated with greater depression severity scores (r = 0.33, P <0.05). IL-17 levels were not associated with TSH receptor antibody levels or depression severity scores. Thyroid function and other thyroid autoantibodies were not associated with depression severity. Conclusion: TSH receptor antibodies might be a biomarker of immune dysfunction in depression.

Key words: Cytokines, Depression, Immunology