Thyroid Dysfunction in Chinese Children and Adolescents with Down Syndrome

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Abstract

Objective: To document the occurrence of thyroid dysfunction in Chinese children and adolescents with Down syndrome. Method: Four hundred and sixteen Chinese children and adolescents with Down syndrome were studied retrospectively for thyroid dysfunction. Hospital records from seven regional hospitals were reviewed. Records could not be traced in 65 of them. Among the 351 subjects, 200 were boys while 151 were girls. The age ranged from 0 to 18.99 years. Results: Thyroid function was normal in 250 patients (71.2%). Seven patients had congenital hypothyroidism (2.0%), seven had acquired hypothyroidism (2.0%) and seventy-nine had subclinical hypothyroidism (22.5%). Hyperthyroidism was found in 8 of them (2.3%). Serum thyroid stimulating hormone (TSH) or free thyroxine (fT4) level could be traced in 200 of them. There was no significant difference in mean fT4 levels between the normal group (118 patients) and the group with subclinical hypothyroidism (70 patients). Patients with subclinical hypothyroidism were subdivided into two groups: G1 (n=61) with TSH=5-10 mIU/L and G2 (n=9) with TSH>10 mIU/L. There was no significant difference in fT4 levels between the two groups. Sixty-seven patients had been screened for auto-antibodies. Anti-thyroglobulin antibodies and/or anti-thyroid microsomal antibodies were found in 25 patients. All 8 patients with hyperthyroidism were positive in either one or both autoantibodies. Two out of 6 patients with acquired hypothyroidism and 10 out of 29 with subclinical hypothyroidism had positive autoantibodies while thyroid autoantibodies were present in 5 out of 20 patients with normal thyroid function. Conclusion: Thyroid dysfunction is very common in patients with Down syndrome. Regular blood test for thyroid function is recommended. The fT4 levels of subclinical hypothyroidism did not differ significantly from the normal group. Further study is required to support the need for treatment in these patients. The presence of thyroid autoantibodies in all patients with hyperthyroidism highly suggests an autoimmune origin.

Key words: Down syndrome; Thyroid autoimmunity; Thyroid dysfunction

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