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Suppressed TSH levels secondary to thyroxine replacement therapy are not associated with osteoporosis.

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Abstract

OBJECTIVE: Recent studies have suggested that patients receiving thyroxine are at increased risk of osteoporosis. We set out to measure bone mineral densities in two groups of post-menopausal women receiving thyroxine replacement therapy (those with serum TSH levels persistently suppressed or non-suppressed) and to compare the results in both groups with those of the local control population. DESIGN: Cross-sectional study. PATIENTS: Seventy-eight post-menopausal women who had been treated with thyroxine for primary autoimmune or idiopathic hypothyroidism for a minimum of 5 years, 44 with TSH persistently suppressed and 34 non-suppressed. One hundred and two control subjects. MEASUREMENTS: Forearm bone mineral density at proximal and distal sites as measured by single-photon absorptiometry. RESULTS: Results were expressed as Z-scores, i.e. number of standard deviations from the mean of a 5-year age-band from the local control population. Mean Z-scores at proximal and distal sites for the non-suppressed patients were -0.03 and -0.07 and for the suppressed patients were -0.20 and -0.25, representing a decrease in bone mineral density of at most 5% in the suppressed patients. The differences between the three groups were not statistically significant. CONCLUSION: In this patient population, the reduction in bone mineral density due to thyroxine is small. It is unlikely to be of clinical significance and should not on its own be an indication for reduction of thyroxine dose in patients who are clinically euthyroid.

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