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Original Article

Bone Markers Status in Graves' disease before and after Treatment

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Abstract:

Background: Bone turnover is reported to increase in favor of resorption in overt hyperthyroidism and the rate of resorption is associated with the levels of thyroid hormones. As persistent increase in bone turn over is responsible for accelerated bone loss, patients with Graves' disease may have increased risk for osteoporosis. The aim of this study was to determine relationship between Graves' disease and bone markers.

Methods: The subjects of our study were 31 consecutive untreated GD patients and 37 normal volunteers who were matched on sex proportion and age ranging was diagnosed by suppressed levels of TSH and elevated level of free T3 and free T4 and positive thyroid receptor antibody. Through a clinical trial study executed in endocrinology and metabolism research center, we investigated the relationship between serum osteocalcin & cross-laps with Graves' disease and then kinds of treatment with PTU and methimazole after 8 weeks follow up.

Results: No significant differences in age and sex between patients and controls were found. Significant differences in serum bone markers and thyroid hormones were detected between patients and controls before therapy ($p< 0.001$). After treatment we found a significant improvement and returning to normal range in all serum lab tests. There were not any differences in the effect of treatment on thyroid hormones and bone markers between two groups.

Conclusion: We found close relationship between Graves' disease and bone markers. So that treatment of Graves' disease can improve bone turn over. These findings indicated that early diagnosis and management of Graves' disease can be effective for osteoporosis prevention in these patients.

Keywords:

Graves' disease ، *Bone Turnover* ، *Hyperthyroidism* ، *Osteoporosis*

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