

**Decreased serum sclerostin levels in patients with primary hyperparathyroidism: a cross-sectional and a longitudinal study**

Decreased serum sclerostin was evident in patients with primary hyperparathyroidism and was inversely related to parathyroid hormone (PTH). Sclerostin normalized earlier than biochemical bone turnover markers (BTMs) following parathyroidectomy. INTRODUCTION: There is limited information on the changes of serum sclerostin in conditions with chronic PTH excess in humans. The main objectives of the present study were to: (1) examine cross-sectionally the changes of serum sclerostin levels in patients with primary hyperparathyroidism (PHPT), (2) study the time course changes in serum sclerostin in PHPT patients following parathyroidectomy (PTX) followed up longitudinally for 12 months, and (3) compare the changes in serum sclerostin to that of BTMs. METHODS: We studied 60 PHPT patients and compared them with 74 PTX patients together with 268 age- and sex-matched healthy controls. Also, we followed 27 PTX patients longitudinally at 2, 4, 6, 10, 30, 60, 180, and 360 days postoperatively. Serum sclerostin, BTMs, and minerals were measured. Also, bone mineral density was determined by dual energy X-ray absorptiometry. RESULTS: Patients with PHPT exhibited significantly lower mean serum sclerostin [mean, in picomoles per liter; 95% confidence interval (CI)]

(28.98; 27.94-30.03) than that obtained for PTX patients (37.01; 35.75-38.27) and healthy controls (46.22; 45.13-47.31) ( $P < 0.0001$  for each case), respectively. Serum PTH inversely correlated with serum sclerostin ( $r = -0.651$ ,  $P < 0.0001$ ). Serum sclerostin was normalized in PTX patients by the tenth day postoperatively and remained within the expected reference range thereafter.

**CONCLUSIONS:** Significantly decreased serum sclerostin was evidenced in PHPT patients as compared with PTX and euparathyroid controls. The inverse PTH and sclerostin relationship suggests that sclerostin is downregulated by PTH in humans. Serum sclerostin normalized earlier than BTMs following parathyroidectomy

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