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

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Abstract

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. 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. 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. 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) ( < 0.0001, for each case), respectively. Serum PTH inversely correlated with serum sclerostin ( = -0.651, < 0.0001). Serum sclerostin was normalized in PTX patients by the tenth day postoperatively and remained within the expected reference range thereafter. 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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Abstract

Aim: Fall is considered usually as a sensitive quality indicator associated with patient safety, quality of care, and unfortunately risk of morbidities including head injuries and fractures. Hospital falls were found to be related mainly to the patient characteristics, plus some circumstances and activities which may facilitate these falls to occur. It affects approximately 2% to 17% of patients during their hospital stay and falls rate varies from 1.4 up to 17.9 falls per 1000 patient days depending on hospital type and patient population. Although there is some researches about falls in developing countries, however most of these lack investigating the underlying causes and SA is not an exception of this rule. Objectives: To determine the magnitude of falls among hospitalized patients at King Abdulaziz University Hospital (KING ABDULAZIZ UNIVERSITY HOSPITAL) in two wards; medical and surgical and to study the predisposing factors and co-morbidities. Design and setting: A cohort prospective study for a period of 3 months was applied targeting male and female patients in the two selected wards using an structured interview questionnaire Main outcomes measure: Number of cases sustaining falls and fall risk factors related to the patient health status, environment and nursing. Results: Total fallers were 2.4% of the total cases reviewed (1115 cases; mean age: 48.59 +/- 19.931years) with 70.4% and 29.6% observed in medical and surgical wards, respectively with significant difference (P<0.05). Among the fallers, males represented 51.9% of the cases. Syncope, vertigo, degree of alertness before fall, a previous history of fall in the past three months, wet floor, lowered bed side rails, malfunctioning of emergency system were among the significant predisposing factors to falls among studied sample(P<0.05). Conclusion: Falls are not uncommon among hospitalized patients (2.4%) with various predisposing factors such as Syncope, vertigo, a previous history of fall in the past three months, degree of alertness before fall, wet floor, lowered bed side rails, malfunctioning of emergency system. Large scale studies should be conducted in the future to establish the various factors contributing to falls over a longer period of time. [Al Jhdali H., Al Amoudi B. and Abdulbagi D. Falls Epidemiology at King Abdulaziz University Hospital, Jeddah Saudi Arabia-2009. Life Sci J 2012; 9(2):1174-1178]. (ISSN:1097-8135). http://www.lifesciencesite.com. 175

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3. High prevalence of vitamin D deficiency among healthy Saudi Arabian men: relationship to bone mineral density, parathyroid hormone, bone turnover markers, and lifestyle factors

Ardawi MSM (Ardawi, M. -S. M.); Sibiany AM (Sibiany, A. M.); Bakhsh TM (Bakhsh, T. M.); Qari MH (Qari, M. H.); Maimani AA (Maimani, A. A.)

Abstract

In this cross-sectional study, the prevalence of vitamin D deficiency [serum 25-hydroxyvitamin D (25(OH)D) < 50 nmol/L] was 87.8% among Saudi Arabian men. There was a linear inverse relationship between serum 25(OH)D and intact parathyroid hormone (PTH) levels, but without a threshold of 25(OH)D at which intact PTH values plateaued. Vitamin D insufficiency and/or deficiency has now reached epidemic proportions and has been linked to low bone mineral density (BMD), some lifestyle factors, and obesity in adults. This relationship is not well documented in Saudi Arabian men. This study examines the relationship between vitamin D status, intact parathyroid hormone (intact PTH), and lifestyle factors among Saudi Arabian men. This cross-sectional study involved 834 men aged 20-74 years living in Jeddah area who were randomly selected and medically examined. Men had their BMD (lumbar spine (L1-L4) and neck femur), 25(OH)D, intact PTH, and other parameters measured according to detailed inclusion criteria. Deficiency (25(OH)D < 50 nmol/L) and insufficiency (a parts per thousand yen50-75 nmol/L) were present in 87.8% and 9.7%, respectively. Deficiency was common among older and obese men with no education and sedentary lifestyle sampled during summer and spring. Serum 25(OH)D showed an inverse linear relationship with intact PTH, but there was no threshold of serum 25(OH)D at which PTH levels plateaued. There was a positive correlation between BMD values at both lumbar spine (L1-L4) (P < 0.023) and neck femur (P < 0.036) and serum 25(OH)D levels, respectively. Functionally significant vitamin D deficiency affects BMD and bone turnover markers among Saudi Arabian men and is largely attributed to older age, obesity, sedentary lifestyle, no education, poor exposure to sunlight, smoking, and poor dietary vitamin D supplementation. The data suggest that an increase in PTH cannot be used as a marker for vitamin D deficiency.

Sources

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4. High Serum Sclerostin Predicts the Occurrence of Osteoporotic Fractures in Postmenopausal Women: The Center of Excellence for Osteoporosis Research Study

Ardawi MSM (Ardawi, Mohammed-Salleh M.); Rouzi AA (Rouzi, Abdulrahim A.); Al-Sibiani SA (Al-Sibiani, Sharifa A.); Al-Senani NS (Al-Senani, Nawal S.); Qari MH (Qari, Mohammed H.); Mousa SA (Mousa, Shaker A.)

Abstract

Sclerostin regulates bone formation by inhibiting Wnt pathway signaling. Low circulating sclerostin levels cause high bone mass. We hypothesized that postmenopausal women with increased sclerostin levels have a greater risk for osteoporosis-related fractures. We examined the association between circulating sclerostin together with bone turnover markers and osteoporosis-related fracture risk in 707 postmenopausal women, in a population-based study with a mean follow-up period of 5.2 +/- 1.3 years. Multivariate Cox proportional hazards regression models were used to analyze fracture risk, adjusted for age, body mass index, and other confounding risk factors. High sclerostin levels were strongly associated with increased fracture risk. After adjustment for age and other confounders, the relative fracture risk was more than sevenfold among postmenopausal women for each 1-SD increment increase in sclerostin level. Women in the highest quartile of sclerostin levels had about a 15-fold increase in fracture risk. Results were similar when we compared sclerostin at the 1-year visit to an average of two to three annual measurements. Fracture risk attributable to sclerostin levels was 56.6% in the highest quartile. Only high levels of bone resorption markers (plasma cross-linked C-terminal telopeptide of type 1 collagen [p-CTX], urinary CTx [u-CTX], and urinary N-telopeptide of type 1 collagen [u-NTx]) were predictive of osteoporosis-related fractures but at much lower hazard ratio (HR) values than that of serum sclerostin. Associations between sclerostin levels and fracture risk were independent of bone mineral density and other confounding risk factors. High sclerostin levels are a strong and independent risk factor for osteoporosis-related fractures among postmenopausal women. (C) 2012 American Society for Bone and Mineral Research.

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5. Independent predictors of all osteoporosis-related fractures among healthy Saudi postmenopausal women: The CEOR Study

Rouzi AA (Rouzi, Abdulrahim A.); Al-Sibiani SA (Al-Sibiani, Sharifa A.); Al-Senani NS (Al-Senani, Nawal S.); Radaddi RM (Radaddi, Raja M.); Ardawi MSM (Ardawi, Mohammed-Salleh M.)

Abstract

This study was designed to identify independent predictors of all osteoporosis-related fractures (ORFs) among healthy Saudi postmenopausal women. We prospectively followed a cohort of 707 healthy postmenopausal women (mean age, 61.3 +/- 7.2 years) for 5.2 +/- 1.3 years. Data were collected on demographic characteristics, medical history, personal and family history of fractures, lifestyle factors, daily calcium intake, vitamin D supplementation, and physical activity score. Anthropometric parameters, total fractures (30.01 per 1000 women/year), special physical performance tests, bone turnover markers, hormone levels, and bone mineral density (BMD) measurements were performed. The final model consisted of seven independent predictors of ORFs: [lowest quartile (Q(1) under bar) vs highest quartile (Q(4) under bar))] physical activity score (Q(1) vs Q(4): <= 12.61 vs >= 15.38); relative risk estimate [RR], 2.87; (95% confidence interval [CI]: 1.88-4.38); age >= 60 years vs age<60 years (RR=2.43; 95% CI: 1.49-3.95); hand grip strength (Q(1) vs Q(4): <= 13.88 vs >= 17.28 kg) (RR=1.88; 95% CI: 1.15-3.05); BMD total hip (Q(1) vs Q: <= 0.784 vs 0.973 g/cm(2)) (RR=1.86; 95% CI: 1.26-2.75); dietary calcium intake (Q(1) vs Q(4): <= 391 vs >= 648 mg/day) (RR=1.66; 95% CI: 1.08-2.53); serum 25(OH)D (Q(1) vs Q(4): <= 17.9 vs >= 45.1 nmol/L) (RR=1.63; 95% CI: 1.06-2.51); and past year history of falls (RR=1.61:95% CI: 1.06-2.48). Compared with having none (41.9% of women), having three or more clinical risk factors (4.8% of women) increased fracture risk by more than 4-fold, independent of BMD. Having three or more risk factors and being in the lowest tertile of T-score of [total hip/lumbar spine (L1-L4)] was associated with a 14.2-fold greater risk than having no risk factors and being in the highest T-score tertile. Several clinical risk factors were independently associated with all ORFs in healthy Saudi postmenopausal women. The combination of multiple clinical risk factors and low BMD is a very powerful indicator of fracture risk. (C) 2011 Elsevier Inc. All rights reserved.
6. Physical Activity in Relation to Serum Sclerostin, Insulin-Like Growth Factor-1, and Bone Turnover Markers in Healthy Premenopausal Women: A Cross-Sectional and a Longitudinal Study

Ardawi MSM (Ardawi, Mohammed-Salleh M.); Rouzi AA (Rouzi, Abdulrahim A.); Qari MH (Qari, Mohammed H.)

Abstract

Context: There is limited information on the effects of mechanical loading caused by physical activity (PA) on sclerostin, IGF-I, and bone turnover markers (BTM). Objective: The objective of the investigation was to study the relationships between serum sclerostin, serum-IGF-I (s-IGF-I), BTM, and the PA level in premenopausal women and to discern how 8-wk of PA training (PAT) affects the serum levels of sclerostin, IGF-I, and BTM. Design: This was a cross-sectional study with a subgroup followed up longitudinally. Settings and Subjects: A total of 1235 randomly selected premenopausal women were cross-sectionally studied. We also followed up 58 of these women longitudinally during an 8-wk course of PAT (4 d/wk) and compared them with 62 controls. All women were medically examined, and bone mineral density (BMD) and serum levels of sclerostin, s-IGF-I, and BTM were determined. Results: Women with PA of greater than 120 min/wk showed significantly lower serum sclerostin (by 36.8%) but higher s-IGF-I (by 107%) levels than sedentary controls. Bone formation markers were also higher in the PA greater than 120 min/wk group compared with the sedentary controls. In the longitudinal study, the 8-wk PAT program led to a decrease in serum sclerostin (by 33.9%, P < 0.0001) but increases in the serum levels of the bone-formation markers and IGF-I (s-IGF-I by 74.2%, P < 0.0001). Conclusions: This study demonstrates that even minor changes in PA are associated with effects on serum levels of sclerostin, IGF-I, and BTM and suggests that sclerostin could be a link between mechanical loading and disuse osteoporosis in humans.
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