Selección de Resúmenes de Menopausia

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Roles of TNF-α, GSK-3β and RANKL in the occurrence and development of diabetic osteoporosis.

Qi J, Hu KS, Yang HL.

OBJECTIVE: To investigate the roles of TNF-α, GSK-3β and RANKL in the occurrence and development of diabetic osteoporosis. METHODS: Diabetic rat model was established; tissue section technology was used to observe the situation of osteoporosis in diabetic rats; rat serum levels of OC, RANKL, GSK-3β, P38mapk, TNF-α and INS were detected by Elisa assay; osteoblasts and osteoclasts were primarily cultured and identified by immunohistochemistry and tartrate-resistant acid phosphatase (TRAP) staining respectively. The effects of GSK-3β inhibitors, lithium chloride, TNF-α antagonists and RANKL antagonists on the proliferation of osteoblasts and osteoclasts were evaluated; quantitative PCR was used to assess the effects of GSK-3β inhibitors, lithium chloride, on TNF-α and RANKL gene expression in osteoblasts and osteoclasts, and the effects of TNF-α and RANKL antagonists on GSK-3β gene expression in osteoblasts and osteoclasts. RESULTS: Diabetic rat model was successfully established; osteoblasts and osteoclasts were successfully isolated and cultured. Elisa experiments showed that in diabetic model group, the levels of RANKL, GSK-3β, P38mapk and TNF-α were significantly increased, while the levels of osteocalcin (OC) and insulin (INS) were significantly reduced; MTT results showed that osteoclast proliferation in GSK-3β inhibitor and lithium chloride groups were weaker than the untreated group, while osteoclast proliferation in TNF-α antagonist group and RANKL antagonist Group was very close to the untreated group. Osteoblast proliferation in GSK-3β inhibitor and lithium chloride groups were weaker than the untreated group, while osteoblast proliferation in TNF-α antagonist group and RANKL antagonist group was higher than the untreated group. In all of the corresponding groups, cell proliferation in the diabetic group was stronger than the untreated group. In GSK-3β inhibitor and lithium oxide groups, TNF-α and RANKL gene expression levels were elevated, but TNF-α and RANKL gene expression levels in the diabetic group were slightly lower than the control group. GSK-3β gene expression level in TNF-α antagonist group and RANKL antagonist group was reduced; GSK-3β gene expression level in diabetic group was lower than the control group. CONCLUSION: In diabetic rats, TNF-α, GSK-3β and RANKL levels were elevated; GSK-3β could promote the proliferation of osteoblasts and osteoclasts, and inhibit the expression of TNF-α and RANKL; TNF-α and RANKL can suppress the proliferation of osteoblasts while had little effect on osteoclast proliferation; they also can promote the GSK-3β gene expression; interactions between the three broke the balance between osteoblasts and osteoclasts, leading to osteoporosis.

Medicine (Baltimore). 2015 Dec;94(52):e2391. doi: 10.1097/MD.0000000000002391.

Meta-Analysis of Saturated Fatty Acid Intake and Breast Cancer Risk.

Xia H, Ma S, Wang S, Sun G.

The associations between saturated fatty acid (SFA) consumption and risk of breast cancer (BC) remains inconclusive. Therefore, we conducted this meta-analysis to determine the quantitative relations between dietary SFA intake and incidence of BC.Literatures published up to April 2015 were systematically screened through Pubmed and Web of Science. Relevant publication quality was evaluated by conducting the Newcastle-Ottawa scale. We used fixed effects models or random effect models to calculate the summary relative risks (RRs) and odds ratios (ORs), and conducted sensitivity analyses and evaluated the publication bias.We identified a total of 52 studies (24 cohort studies and 28 case-control studies), with over 50,000 females diagnosed with BC. The associations between dietary SFA intake and risk of BC were 1.18 for case-control studies (high vs low intake, 95% confidence interval [CI]=1.03-1.34) and 1.04 for cohort studies (95% CI=0.97-1.11). When restricted analyses to population-based studies, positive associations were observed for both cohort (RR [95% CI]=1.11 [1.01-1.21]) and case-control studies (OR [95% CI]=1.26 [1.03-1.53]). Additionally, for case-control studies, significant positive associations between higher SFA intake and BC risk were observed for Asian (OR [95% CI]=1.17 [1.02-1.34]) and Caucasian (OR [95% CI]=1.19 [1.00-1.41]), as well as for postmenopausal women (OR=1.33, 95% CI: 1.02-1.73). In contrast, higher dietary SFA intake was not associated with risk of BC among premenopausal women, in cohort studies or hospital-based studies.A positive association between higher dietary SFA intake and postmenopausal BC risk was observed in case-control but not in cohort studies. More studies are warranted to confirm these findings.

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Changes in bone mineral density and bone turnover in patients on 'drug holiday' following bisphosphonate therapy: real-life clinic setting.

Roberts J, Castro C, Moore AE, Fogelman I, Hampson G.

OBJECTIVES: Treatment discontinuation after long-term bisphosphonate (BP), termed a 'drug holiday' has been proposed to reduce the risk of BP-associated complications. The duration of treatment cessation remains unclear. Changes in bone mineral density (BMD), bone turnover markers (BTMs) and their relationship with FRAX was assessed to help determine the optimum length of a 'drug holiday' METHODS: A retrospective analysis of 134 patients (13M, 121F) aged (mean [SD]) 68.4 (8.2) years who discontinued BPs after treatment for 5.9[3.0] years for osteoporosis was undertaken. BMD at the lumbar spine (LS), total hip (TH), and femoral neck (FN) and biochemical parameters including serum 25 (OH)vitamin D, bone turnover markers (plasma CTX, P1NP) and FRAX scores were determined at discontinuation, 12-18 months and 24-30 months off treatment. RESULTS: BMD decreased significantly at the LS (% change mean [SD]: -0.94[3.6], p=0.008), TH (-1.4[2.4], p<0.001) and FN (-1.8[4.4], p<0.001) after treatment discontinuation for 12-18 months. In the sub-group who remained off treatment for 24-30 months, a progressive decline in BMD was seen at the TH and FN with total % decrease of -2.52 [3.5] and -2.7 [4.76], p<0.001 respectively. CTX and P1NP increased significantly at 12-18 months after discontinuation, (% change CTX: 95[88], p<0.001, P1NP: 88 [73], p <0.001). FRAX scores were significant predictors of % change in BMD at the FN (p<0.05), independently of bone turnover and vitamin D status. In summary, our data show that following a 'drug holiday', the use of DEXA scans, BTMs and FRAX may help guide when to resume treatment

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Bone Mineral Density and Cognitive Decline in Elderly Women: Results from the InCHIANTI Study.

Laudisio A, Fontana DO, Rivera C, Ruggiero C, Bandinelli S, Gemma A, Ferrucci L, Antonelli Incalzi R.

Osteoporosis and cognitive impairment, which are highly prevalent conditions in elderly populations, share several risk factors. This study aims at evaluating the association of bone mineral density (BMD) with prevalent and incident cognitive impairment after a 3-year follow-up. We studied 655 community-dwelling women aged 65+ participating in the InCHIANTI study, who had been followed for 3 years. Total, trabecular, and cortical BMD were estimated by peripheral quantitative computed tomography using standard transverse scans at 4 and 38 % of the tibial length. Cognitive performance was evaluated using the Mini-Mental State Examination and the Trail Making Tests (TMT) A and B; a MMSE score <24 was adopted to define cognitive impairment. The TMT A-B score was calculated as the difference between TMT-A and TMT-B times (ΔTMT). The association of cognitive performance after 3 years with baseline indices of BMD was assessed by logistic and linear regression analyses. Cortical, but not trabecular, BMD was independently associated with incident cognitive impairment (OR 0.93, 95 % CI 0.88-0.98; P = 0.012), worsening cognitive performance (OR 0.96, 95 % CI 0.92-0.98; P = 0.039), and worsening performance in ΔTMT (OR 0.96, 95 % CI 0.92-0.99; P = 0.047). Increasing cortical BMD tertiles was associated with decreasing probability of incident cognitive impairment (P for linear trend =0.001), worsening cognitive performance (P = 0.013), and a worsening performance below the median value (P for linear trend <0.0001). In older women, low BMD might represent an independent and early marker of subsequent cognitive impairment. Physicians should assess and monitor cognitive performance in the routine management of elderly women with osteoporosis.

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Vitamin D Deficiency Is Highly Concomitant but Not Strong Risk Factor for Mortality in Patients Aged 50 Year and Older with Hip Fracture.

Lee GH, Lim JW, Park YG, Ha YC.

BACKGROUND: The purpose of this study was to ascertain the prevalence of vitamin D deficiency and risk factors associated with mortality in patients ≥50-year-of-age with hip fractures. METHODS: A total of 489 patients ≥50-year-of-age who sustained a hip fracture from January 2010 to October 2014 were followed-up for a minimum of 1 year. Clinical and radiological outcomes were evaluated including prevalence of vitamin D deficiency. Crude mortality rates were calculated, and the effects of different risk factors on mortality were assessed. RESULTS: Vitamin D deficiency was present in 76.5% of cases (n=237). The prevalence of vitamin D insufficiency was 12.3%, and only 11.2% of patients had normal vitamin D levels. Accumulated mortality was 11% (54 patients) at 1 year. A

univariate analysis showed that vitamin D deficiency (P=0.012), age (P<0.001), BMI (P<0.001), type of management (P<0.001), American Society of Anesthesiologists (ASA) score (P=0.009), pre-fracture ambulatory status (P<0.001), and osteoporosis (P<0.001) were associated with mortality. A multivariate analysis performed using a Cox proportional hazards model demonstrated that ASA score (P=0.001) and pre-fracture ambulatory status (P=0.011) were independently associated with mortality after hip fracture. CONCLUSIONS: We did not find a relationship between serum 25-hydroxy-vitamin D levels and mortality after hip fracture, although we observed a high prevalence of vitamin D deficiency and a significant association with mortality in the univariate analysis.

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Relationship between Bone Mineral Density and Spinal Muscle Area in Magnetic Resonance Imaging.

Lee DY, Yang JH, Ki CH, Ko MS, Suk KS, Kim HS, Lee HM, Moon SH.

BACKGROUND: Bone mineral density (BMD) is known to have a positive correlation with lean body mass. Several studies have also reported the positive correlation between muscle power and BMD. From this point of view, we hypothesized BMD of lumbar spine to have a positive correlation with muscle mass. METHODS: Seventy-nine female patients aged between 60 and 75 years old and who underwent magnetic resonance imaging (MRI) and BMD studies were included. Muscle mass in spine MRI was defined by the sum of the average muscle area of three axial images for each disc level. Lumbosacral muscle is the sum of paraspinal muscle and psoas muscle. RESULTS: In correlation analysis, paraspinal muscle mass showed positive correlation with BMD of lumbar spine. Lumbosacral muscle mass showed positive correlation with BMD of trochanteric area of the femur. However, BMD of other area showed no significant correlation with muscle mass. CONCLUSIONS: Therefore, postmenopausal women older than 60 years with a well developed spine muscle mass, have a high BMD.

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Calcium and Vitamin D Supplementations: 2015 Position Statement of the Korean Society for Bone and Mineral Research.

Kim KM, Choi HS, Choi MJ, Chung HY.

Calcium and vitamin D are essential components for bone health, thus calcium and vitamin D supplementation is an important strategy in the management of osteoporosis. However, the benefit of calcium and vitamin D supplementation on bone health is still controversial. Moreover, potentially harmful effects of excessive calcium supplementation on cardiovascular health are recently suggested. Too high a level of vitamin D has been also reported to have several, possibly related, harmful events. Korea is well known for low dietary calcium intake and vitamin D deficiency in its population. This position statement developed the following recommendation for adequate levels of calcium and vitamin D intake in Korean, postmenopausal women and men older than 50 years: Adequate calcium intake and optimal vitamin D level are essential for preventing and treating osteoporosis in postmenopausal women and men older than 50 years. We recommend a daily calcium intake of 800 to 1,000 mg/day. Food remains the best source of calcium; however calcium supplements should be considered when dietary intake of calcium is inadequate. We recommend dietary vitamin D intake of more than 800 IU per day, a level which appears to reduce the risk of fractures. When vitamin D deficiency is suspected, serum 25-hydroxy-vitamin D (25-[OH]D) level should be tested. We suggest that a serum 25-(OH)D level greater than 20 ng/mL is generally appropriate for prevention of osteoporosis. However, a serum 25-(OH)D level greater than 30 ng/mL is probably helpful for management of osteoporosis and prevention of fractures.