Selección de Resúmenes de Menopausia

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Denosumab, teriparatide and bisphosphonates for glucocorticoid-induced osteoporosis: a Bayesian network meta-analysis

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Background: Several medications have been used for glucocorticoids-induced osteoporosis (GIO). However, the best therapeutic option for GIO is still controversial. A Bayesian network meta-analysis was conducted to compare the efficacy and safety of denosumab, teriparatide and bisphosphonates for patients with GIO. Methods: Relevant randomized controlled trials published in PubMed, Embase, Cochrane Library and ClinicalTrials.gov up to August 2023 were searched. The following efficiency and safety outcomes were extracted for comparison: bone mineral density (BMD) percentage changes in lumbar spine, femur neck and total hip, and incidences of adverse events (AEs), serious adverse events (SAEs), vertebrae and non-vertebrae fracture. Bayesian random effects models were used for multiple treatment comparisons. Results: 11 eligible RCTs involving 2,877 patients were identified. All the six medications including alendronate, risedronate, etidronate, zoledronate, teriparatide, and denosumab and were effective in increasing BMD. Teriparatide and denosumab were more effective in improving lumbar spine and femur neck BMD, and reducing vertebrae fracture. Alendronate and denosumab were more effective in improving total hip BMD. Alendronate and teriparatide had the lowest incidences of AEs and SAEs. Conclusion: Teriparatide denosumab and the bisphosphonates are all effective in improving BMD for GIO patients. Based on this network meta-analysis, teriparatide and denosumab have higher efficiency in improving lumbar spine and femur neck BMD, and reducing vertebrae fracture.

The Effects of Estrogen on the Risk of Developing Dementia: A Cohort Study Using the UK Biobank Data

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Objectives: The protective role of estrogen in the development of dementia remains uncertain. We investigated the role of lifetime cumulative exposure to estrogen in dementia in the UK Biobank.Methods: Reproductive characteristics, including estrogen length and history of surgery (hysterectomy/oop horectomy), were used as exposure variables. Cox Proportional Hazard models were used to estimate hazard ratios (HR) for the development of dementia. Results: A total of 273,260 female participants were included in this study. Compared to women with the shortest estrogen length, women with the longer estrogen length (38-42) had a 28% decreased risk of dementia (HR = 0.718, 95% confidence interval [CI] = 0.651-0.793). Women with later last age at estrogen exposure (50-52) had a 24% decreased risk for dementia (HR = 0.763, 95% CI = 0.695-0.839) compared to women with younger age at last estrogen exposure (≤45). Later age at menarche (≥15) was associated with a 12% increased risk for dementia (HR = 1.121, 95% CI = 1.018-1.234) compared to women with earlier age at menarche (≤12). Women with a history of surgery had an 8% increased risk of dementia (HR = 1.079, 95% CI = 1.002-1.164) compared to women without a history of surgery.Conclusion: This study found that more prolonged exposure to estrogen (longer estrogen length and later age at last estrogen exposure) had a decreased risk for dementia, and shorter exposure to estrogen (later age at menarche and of reproductive surgery) had an increased risk for dementia. Based on the results of this study, estrogen might have a protective role in women in the development of dementia.

The impact of thyroid function on total spine bone mineral density in postmenopausal women

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Purpose: Osteoporosis has been a widespread concern for older women, especially postmenopausal women. Thyroid function is crucial for bone metabolism. However, the relationship between thyroid function variation within thyroxine reference range and bone mineral density (BMD) remains ambiguous. The objective of this study was to evaluate the effect of subclinical hypothyroidism or hyperthyroidism on total spinal BMD in postmenopausal women. Methods: Based on data from the National Health and Nutrition Examination Survey (NHANES) 2007-2010, multivariable weighted logistic regression was used to evaluate the relationships between total spine BMD and TSH among postmenopausal women aged ≥50.Results: After accounting for a number of variables, this study discovered that the middle TSH tertile was associated with a decreased probability of osteoporosis. Additionally, the subgroup analysis revealed that postmenopausal women over the age of 65 or people with an overweight BMI had a clearer relationship between total spine BMD and TSH. Conclusion: The total spinal BMD had a positive relationship with thyroid stimulating hormone in postmenopausal women, and that appropriate TSH level (1.38-2.32 mIU/L) was accompanied by higher total spinal BMD.

Genitourinary symptoms and sexual function in women with primary ovarian insufficiency

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Objective: There are limited studies on urogenital symptoms in women who experience menopause before the age of 40 years due to primary ovarian insufficiency (POI) or bilateral oophorectomy (surgical POI). This study aimed to compare the urogenital symptoms, including sexuality, of women with POI to those without the condition. Methods: This cross-sectional study conducted was in seven Latin American countries, in which postmenopausal women (with POI and non-POI) were surveyed with a general questionnaire, the Menopause Rating Scale (MRS) and the six-item Female Sexual Function Index (FSFI-6). The association of premature menopause with more urogenital symptoms and lower sexual function was evaluated with logistic regression analysis. Results: Women with POI experience more urogenital symptoms (MRS urogenital score: 3.54 ± 3.16 vs. 3.15 ± 2.89, p < 0.05) and have lower sexual function (total FSFI-6 score: 13.71 ± 7.55 vs. 14.77 ± 7.57 p < 0.05) than women who experience menopause at a normal age range. There were no significant differences in symptoms when comparing women based on the type of POI (idiopathic or surgical). After adjusting for covariates, our logistic regression model determined that POI is associated with more urogenital symptoms (odds ratio [OR]: 1.38, 95% confidence interval [CI] 1.06-1.80) and lower sexual function (OR: 1.67, 95% CI 1.25-2.25). Conclusion: POI, whether idiopathic or secondary to bilateral oophorectomy, is associated with symptoms that affect vaginal and sexual health.

A comparison of hyaluronic acid and estradiol treatment in vulvovaginal atrophy

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Objective: This study aims to compare the effects of vaginal estrogen and hyaluronic acid on vulvovaginal atrophy. Patients and methods: This randomized controlled study included a total of 300 patients, with 150 patients in each group (Group E and Group H). The VHI score was determined based on a pre-treatment evaluation conducted by a gynecologist. After one month of receiving vaginal estrogen in Group E and vaginal hyaluronic acid in Group H, the patients were re-evaluated by their physicians. Results: A statistically significant difference was found between the pre- and post-treatment VHI scores in Group E and Group H (p = 0.000; p = 0.000). No statistical difference was found between Group E and Group H in terms of treatment efficacy (p = 0.712). The pre- and post-treatment complaints of dryness, itching, dyspareunia, burning, and dysuria were found to be statistically significant in Group E and Group H (p = 0.000; p = 0.000; p = 0.000; p = 0.000; p = 0.000 in Group E, respectively) (p = 0.000; p = 0.000; p = 0.000; p = 0.000 in Group H, respectively). No statistical difference was observed regarding dyspareunia, dysuria, and burning complaints (p = 0.632; p = 0.106; p = 0.128, respectively). However, hyaluronic acid was found to be significantly more effective for itching complaints (p = 0.002), while estrogen was found to be significantly more effective for dryness complaints (p = 0.012). Conclusions: Hyaluronic acid and estrogen were equally effective in vaginal treatment. Hyaluronic acid may be preferred for patients in whom hormonal therapy is contraindicated or for those who prefer non-hormonal therapy.

Oral Milk-Derived Extracellular Vesicles Inhibit Osteoclastogenesis and Ameliorate Bone Loss in Ovariectomized Mice by Improving Gut Microbiota

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Milk-derived extracellular vesicles can improve intestinal health and have antiosteoporosis potential. In this paper, we explored the effects of bovine raw milk-derived extracellular vesicles (mEVs) on ovariectomized (OVX) osteoporotic mice from the perspective of the gut-bone axis. mEVs could inhibit osteoclast differentiation and improve microarchitecture. The level of osteoporotic biomarkers in OVX mice was restored after the mEVs intervened. Compared with OVX mice, mEVs could enhance intestinal permeability, reduce endotoxin levels, and improve the expression of TNF-α, IL-17, and IL-10. 16S rDNA sequencing indicated that mEVs altered the composition of gut microbiota, specifically for Bacteroides associated with short-chain fatty acids (SCFAs). In-depth analysis of SCFAs demonstrated that mEVs could restore acetic acid, propionic acid, valeric acid, and isovaleric acid levels in OVX mice. Correlation analysis revealed that changed gut microbiota and SCFAs were significantly associated with gut inflammation and osteoporotic biomarkers. This study demonstrated that mEVs could inhibit osteoclast differentiation and improve osteoporosis by reshaping the gut microbiota, increasing SCFAs, and decreasing the level of pro-inflammatory cytokines and osteoclast differentiation-related factors in OVX mice. These findings provide evidence for the use of mEVs as a food supplement for osteoporosis.

Association between serum estradiol level and appendicular lean mass index in middle-aged postmenopausal women

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Background: Previous studies investigating the association between loss of estrogen at menopause and skeletal muscle mass came to contradictory conclusions. Aim: To evaluate the association between serum estradiol level and appendicular lean mass index in middle-aged postmenopausal women using population-based data. Methods: This study included 673 postmenopausal women, aged 40-59 years, from the National Health and Nutrition Examination Survey between 2013 and 2016. Weighted multivariable linear regression models were used to evaluate the association between serum E2 Level and appendicular lean mass index (ALMI). When non-linear associations were found by using weighted generalized additive model and smooth curve fitting, two-piecewise linear regression models were further applied to examine the threshold effects. Results: There was a positive association between serum E2 level and ALMI. Compared to individuals in quartile 1 group, those in other quartiles had higher ALMI levels. An inverted U-shaped curve relationship between serum E2 Level and ALMI was found on performing weighted generalized additive model and smooth curve fitting, and the inflection point was identified as a serum E2 level of 85 pg/mL. Conclusion: Our results demonstrated an inverted U-shaped curve relationship between serum E2 levels and ALMI in middle-aged postmenopausal women, suggesting that low serum E2 levels play an important in the loss of muscle mass in middle-aged postmenopausal women.

Application of mesenchymal stem cell therapy for premature ovarian insufficiency: Recent advances from mechanisms to therapeutics

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The incidence of premature ovarian insufficiency (POI) is increasing worldwide, particularly among younger women, posing a significant challenge to fertility. In addition to menopausal symptoms, POI leads to several complications that profoundly affect female reproductive function and overall health. Unfortunately, current clinical treatment strategies for this condition are limited and often yield unsatisfactory outcomes. These approaches typically involve hormone replacement therapy combined with psychological support. Recently, mesenchymal stem cell (MSC) therapies for POI have garnered considerable attention in global research. MSCs can restore ovarian reproductive and endocrine functions through diverse mechanisms, including controlling differentiation, promoting angiogenesis, regulating ovarian fibrosis, inhibiting apoptosis, enhancing autocrine and paracrine effects, suppressing inflammation, modulating the immune system, and genetic regulation. This editorial offers a succinct summary of the application of MSC therapy in the context of POI, providing evidence for groundbreaking medical approaches that have potential to enhance reproductive health and overall well-being for women.