Selección de Resúmenes de Menopausia

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Attenuation of estrogen and its receptors in the post-menopausal stage exacerbates dyslipidemia and leads to cognitive impairment

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Cognitive dysfunction increases as menopause progresses. We previously found that estrogen receptors (ERs) contribute to dyslipidemia, but the specific relationship between ERs, dyslipidemia and cognitive dysfunction remains poorly understood. In the present study, we analyzed sequencing data from female hippocampus and normal breast aspirate samples from normal and Alzheimer's disease (AD) women, and the results suggest that abnormal ERs signaling is associated with dyslipidemia and cognitive dysfunction. We replicated a mouse model of dyslipidemia and postmenopausal status in LDLR-/- mice and treated them with β-estradiol or simvastatin, and found that ovariectomy in LDLR-/- mice led to an exacerbation of dyslipidemia and increased hippocampal apoptosis and cognitive impairment, which were associated with reduced estradiol levels and ERα, ERβ and GPER expression. In vitro, a lipid overload model of SH-SY-5Y cells was established and treated with inhibitors of ERs. β-estradiol or simvastatin effectively attenuated dyslipidemia-induced neuronal apoptosis via upregulation of ERs, whereas ERα, ERβ and GPER inhibitors together abolished the protective effect of simvastatin on lipid-induced neuronal apoptosis. We conclude that decreased estrogen and its receptor function in the postmenopausal stage promote neuronal damage and cognitive impairment by exacerbating dyslipidemia, and that estrogen supplementation or lipid lowering is an effective way to ameliorate hippocampal damage and cognitive dysfunction via upregulation of ERs.

Life Sci. 2023 Nov 17:122280. doi: 10.1016/j.lfs.2023.122280. Online ahead of print.

Osteoporosis in polycystic ovary syndrome (PCOS) and involved mechanisms

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Polycystic Ovary Syndrome (PCOS) and osteoporosis, though seemingly unrelated, exhibit intricate connections influenced by genetic and epigenetic factors. PCOS, characterized by elevated androgen levels, insulin resistance, and increased body weight, has historically been considered protective against bone fragility disorders. However, emerging research suggests that chronic inflammation, prevalent in PCOS, can adversely affect bone health. Studies have demonstrated variable bone mineral density loss in PCOS, often associated with leptin resistance and hyperinsulinemia. Key genes such as INS, IGF1, CTNNB1, AKT1, and STAT3 play pivotal roles in the complex interplay between PCOS and osteoporosis, influencing insulin signaling, oxidative stress, and inflammatory pathways. Oxidative stress, a prominent element in PCOS, can lead to osteoporosis through hormonal imbalances, chronic inflammation, insulin resistance, and lifestyle factors. The insulin signaling pathway also significantly impacts both conditions by contributing to hormonal imbalances and bone health alterations. This intricate network of genetic and epigenetic factors underscores the need for a deeper understanding of their interrelationships. Thus, this review elucidates the multifaceted genetic, epigenetic, and inflammatory connections between PCOS and osteoporosis, highlighting their implications for bone health management in individuals with PCOS.

J Parkinsons Dis. 2023 Nov 17. doi: 10.3233/JPD-230230. Online ahead of print.

Association Between Menopausal Hormone Therapy and Risk for Parkinson's Disease

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Background: The relationship between menopausal hormone therapy (MHT) and risk of Parkinson's disease (PD) remains controversial. Objective: This nationwide population-based cohort study investigated the association between MHT and PD development.Methods: Data from the National Health Insurance System of South Korea from 2007 to 2020 were used. The MHT group included women who underwent MHT for the first time between 2011-2014, while the non-MHT group included women who visited a healthcare provider for menopause during the same period but never received hormonal therapy. We used propensity score matching (1 : 1) to adjust for potential confounders, and Cox regression models to assess the association between MHT and PD. Results: We selected 303,260 female participants (n = 151,630

per MHT and non-MHT groups). The median age of the participants was 50 (48-54) years, and the follow-up period lasted 7.9 (6.9-8.9) years. Cox regression analysis revealed an increased risk of PD with MHT (hazard ratio [HR] 1.377, 95% confidence interval [CI] 1.184-1.602), particularly with tibolone (HR 1.554, 95% CI 1.297-1.861) and estrogen alone (HR 1.465, 95% CI 1.054-2.036). Tibolone and estrogen alone were linked to PD within three years; however, no association was observed after three years. In contrast, the use of combined estrogen-progesterone was linked to a higher risk of PD, which increased with the duration of MHT (HR 1.885, 95% CI 1.218-2.918 for over five years). Conclusions: This study demonstrated that the MHT is closely associated with the risk of PD in a regimen- and duration-specific manner.

Atherosclerosis. 2023 Nov 3:386:117372. doi: 10.1016/j.atherosclerosis.2023.117372. Online ahead of print.

Risk factors for major adverse cardiovascular events in postmenopausal women: UK Biobank prospective cohort study

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Background and aims: Cardiovascular risk increases during menopause, so the medical and scientific community should consider women's specific risk factors to prevent cardiovascular disease. This study aims to assess the risk factors for the incidence of major adverse cardiovascular events (MACE) exclusive to postmenopausal women. Methods: We conducted a prospective cohort study in postmenopausal women aged 40 years and older, who were included in the UK Biobank cohort between 2006 and 2010 and followed to 2021 (12 years). A total of 156,787 women were followed for a median of 12.5 years (nearly 2 million person-years), and MACE risk was assessed using Fine-Gray competing risk models. Results: The cumulative incidence of cardiovascular morbidity and mortality was 1.2% (0.97 cases per 1000 women-years). Not having taken birth control pills, not having children, and early menarche (≤12 years) were independently associated with cardiovascular morbidity and mortality. Conclusions: Risk factors for cardiovascular disease that are specific to women include early menarche, not having taken oral contraceptives, and reproductive history, and this relationship is independent of classic cardiovascular risk factors.

J Diabetes Metab Disord. 2023 Jul 28;22(2):1011-1019. doi: 10.1007/s40200-023-01267-5. eCollection 2023 Dec.

Global prevalence of sexual dysfunction among women with metabolic syndrome: a systematic review and meta-analysis

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Background: Sexual dysfunction is a common disorder among women, especially during menopause. Metabolic syndrome is a multifactorial disease that, according to previous studies, there is a relationship between the metabolic syndrome and sexual dysfunction among women. The aim of this systematic review and meta-analysis is to obtain the prevalence of Female Sexual Dysfunction (FSD) among women with metabolic syndrome, and to analyze available related evidence. Methods: In this systematic review and meta-analysis, the keywords of MeSH, female sexual dysfunction, FSD, metabolic syndrome were searched in PubMed, Web of Science, Scopus, Science Direct and Google Scholar. The searches were conducted without a lower time limit and until May 2022. Results: The prevalence of FSD among women with metabolic syndrome was found to be 39.3% (95% CI: 28.3-51.5). In the subgroup analysis and in the review of 4 studies, the prevalence of sexual dysfunction in postmenopausal women with metabolic syndrome was 49.8% (95% CI: 26.1-73.6). Analyzing the results of the meta-regression test in examining the effect of the three factors of sample size, year of the study, age, and BMI of the patients on the heterogeneity of the meta-analysis, showed that with the increase of the sample size, the prevalence of sexual dysfunction among women with metabolic syndrome decreases ($p < 0.05$). Moreover, the prevalence of sexual dysfunction among women with metabolic syndrome increases ($p < 0.05$) with the increase in the years of conducting studies and the mean of age of women with metabolic syndrome. Also, with increasing mean of BMI of female patients with metabolic syndrome, the prevalence of sexual dysfunction in these women also increases ($p < 0.05$). Conclusion: Female sexual dysfunction is a global health problem that can affect women's life to a great extent. Metabolic syndrome, which is a set of factors such as obesity, high blood pressure, and diabetes, affects sexual dysfunction in women. From this study, it can be concluded that there is a close relationship between metabolic syndrome and female sexual dysfunction.

Kardiologiia. 2023 Nov 8;63(10):9-28. doi: 10.18087/cardio.2023.10.n2561.

Russian Eligibility Criteria for Prescribing Menopausal Hormone Therapy to Patients With Cardiovascular and Metabolic Diseases. Consensus Document of RSC, RSOG, RAE, EUAT, RAP.

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Menopausal symptoms can impair the life of women at the peak of their career and family life. At the present time, the most effective treatment for these manifestations is menopausal hormone therapy (MHT). The presence of cardiovascular and metabolic diseases in itself does not exclude the possibility of prescribing MHT to relieve menopausal symptoms and improve quality of life. However, often an obstacle to the use of this type of hormone therapy is the fear of physicians to do more harm to patients than good. Caution is especially important when it comes to women with concurrent diseases. Moreover, it should be recognized that there is a shortage of high-quality research on the safety of MHT for underlying chronic non-infectious diseases and common comorbidities. The presented consensus analyzed all currently available data from clinical trials of various designs and created a set of criteria for the appropriateness of prescribing MHT to women with concomitant cardiovascular and metabolic diseases. Based on the presented document, physicians of various specialties who advise menopausal women will receive an accessible algorithm that will allow them to avoid potentially dangerous situations and reasonably prescribe MHT in real-life practice.

Meta-Analysis BMC Womens Health. 2023 Nov 14;23(1):606. doi: 10.1186/s12905-023-02749-7.

Effect of non-pharmacological interventions on the prevention of sarcopenia in menopausal women: a systematic review and meta-analysis of randomized controlled trials

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Background: Sarcopenia is a chronic disease marked by gradual muscle system and functional decline. Prior research indicates its prevalence in those under 60 varies from 8 to 36%. There is limited evidence on the effectiveness of non-pharmacological interventions for sarcopenia prevention in menopausal women aged 40-60. This study examines the influence of such interventions for sarcopenia prevention on these women. Methods: PubMed, EMBASE, Medline, Cochrane Library, CINAHL, PEDro, and Airiti Library were searched from inception until May 5, 2023. Randomized controlled trials that examined exercise, vitamin D and protein supplementation effects on muscle mass, strength, and physical function. Quality assessment used the Cochrane risk of bias tool, and analysis employed Comprehensive Meta-Analysis version 2.0. Results: A total of 27 randomized controlled trials, involving 1,989 participants were identified. Meta-analysis results showed exercise improved lean body mass (SMD = 0.232, 95% CI: 0.097, 0.366), handgrip strength (SMD = 0.901, 95% CI: 0.362, 1.441), knee extension strength (SMD = 0.698, 95% CI: 0.384, 1.013). Resistance training had a small effect on lean body mass, longer exercise duration (> 12 weeks) and higher frequency (60-90 min, 3 sessions/week) showed small to moderate effects on lean body mass. Vitamin D supplementation improved handgrip strength (SMD = 0.303, 95% CI: 0.130, 0.476), but not knee extension strength. There was insufficient data to assess the impact of protein supplementation on muscle strength. Conclusions: Exercise effectively improves muscle mass, and strength in menopausal women. Resistance training with 3 sessions per week, lasting 20-90 min for at least 6 weeks, is most effective. Vitamin D supplementation enhances small muscle group strength. Further trials are needed to assess the effects of vitamin D and protein supplementation on sarcopenia prevention.