



Selección de Resúmenes de Menopausia

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Cellular hallmarks of aging emerge in the ovary prior to primordial follicle depletion

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 Decline in ovarian reserve with advancing age is associated with reduced fertility and the emergence of metabolic disturbances, osteoporosis, and neurodegeneration. Recent studies have provided insight into connections between ovarian insufficiency and systemic aging, although the basic mechanisms that promote ovarian reserve depletion remain unknown. Here, we sought to determine if chronological age is linked to changes in ovarian cellular senescence, transcriptomic, and epigenetic mechanisms in a mouse model. Histological assessments and transcriptional analyses revealed the accumulation of lipofuscin aggresomes and senescence-related transcripts (Cdkn1a, Cdkn2a, Pai-1 and Hmgb1) significantly increased with advancing age. Transcriptomic profiling and pathway analyses following RNA sequencing, revealed an upregulation of genes related to pro-inflammatory stress and cell-cycle inhibition, whereas genes involved in cell-cycle progression were downregulated; which could be indicative of senescent cell accumulation. The emergence of these senescence-related markers preceded the dramatic decline in primordial follicle reserve observed. Whole Genome Oxidative Bisulfite Sequencing (WGoxBS) found no genome-wide or genomic context-specific DNA methylation and hydroxymethylation changes with advancing age. These findings suggest that cellular senescence may contribute to ovarian aging, and thus, declines in ovarian follicular reserve. Cell-type-specific analyses across the reproductive lifespan are needed to fully elucidate the mechanisms that promote ovarian insufficiency.

North Clin Istanb. 2020 Oct 1;7(6):585-590. doi: 10.14744/nci.2020.28003. eCollection 2020.

Impacts of combined osteopenia/osteoporosis and sarcopenia on balance and quality of life in older adults

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 Objective: Combined osteopenia/osteoporosis and sarcopenia is a major public health problem for old adults. In this study, we aimed to evaluate the impacts of combined osteopenia/osteoporosis with sarcopenia on balance and quality of life in patients older than 65 years. Methods: In this study, 77 patients with sarcopenia, who were older than 65 years, were included. The diagnosis of sarcopenia was made according to the diagnostic criteria developed by The European Working Group on Sarcopenia in Older People (EWGSOP). Bone densitometry was performed to screen for osteoporosis or osteopenia. The balance was assessed with the anterior-posterior stability index (APSI), medial-lateral stability index (MLSI), and the general stability index (OSI), which were calculated using a Bidex Stability System device (BSS). The quality of life was assessed using SF-36. Results: Patients with sarcopenia were included in this study. Of them, 40 had osteoporosis and 37 had osteopenia. The measures of balance and the OSI, APSI, and MLSI values were low in both groups of patients, but they were statistically significantly lower in the sarcopenia with osteoporosis group compared to the sarcopenia with osteopenia group ($p=0.01$; $p=0.002$; $p=0.04$, respectively). The quality of life was lower in all sub-categories of SF-36, excluding the mental health when sarcopenia was accompanied by osteoporosis compared to the joint occurrence of sarcopenia with osteopenia ($p<0.05$). Conclusion: Our study suggests that the joint occurrence of osteoporosis with sarcopenia is associated with a risk of balance loss, a decrease in quality of life, and a potentially increased fracture risk in older adults.

Int J Environ Res Public Health. 2020 Dec 28;18(1):E154. doi: 10.3390/ijerph18010154.

Association between Reproductive Span and Sarcopenia

Eun Young Park, Kyoung Hee Han, Tae Ha Chung, Nam Yun Kim, Ji Min Lee, Seong Jin Choi, Jong Koo Kim.
 Sarcopenia is defined as an age-related loss of skeletal muscle and is associated with several health disorders. Causes of sarcopenia, which included physical inactivity, alcohol, dietary habits, and smoking, have been researched. The present study was undertaken to examine the association between reproductive span and sarcopenia in Korean women. Data obtained from 2008 to 2011 Korea National Health and Nutrition Examination Surveys (KNHANES) were analyzed.

We defined sarcopenia based on the cut-off values of the Foundation for the National Institutes of Health (FNIH) sarcopenia project criteria: ASM/BMI < 0.512 for women. Reproductive span was defined as years from menarche to menopause, and we divided the 3970 study subjects into three groups by reproductive span tertile. Multivariate logistic regression analysis was used to determine adjusted ORs for the relation between reproductive span and sarcopenia. The prevalence of sarcopenia in the study was 17.7% (704 of 3970). Multiple logistic regression analysis was performed using weighted populations. After adjusting for covariates, reproductive span was found to be inversely associated with the risk of sarcopenia [Tertile 1 = 1 (reference); Tertile 2, odds ratio (OR) = 0.927, 95% confidence interval (CI) = 0.863-0.995; Tertile 3, OR = 0.854, 95% CI = 0.793-0.915].

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Prescribing of menopausal hormone therapy in Germany: Current status and changes between 2004 and 2016

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Background: Prescribing of menopausal hormone therapy (MHT) declined drastically after publication of the Women's Health Initiative's (WHI) findings in 2002, but studies on longer-term trends and details of use are scarce. **Methods:** We used the German Pharmacoepidemiological Research Database (GePaRD) containing health insurance claims data from ~25 million persons. Using data from 2004-2016, we conducted cross-sectional analyses to determine the prevalence of MHT use overall and by type and route of administration in women aged 45-75. In longitudinal analyses, we assessed MHT use over five years and compared the patterns between different time periods. **Results:** From 2004 to 2016, prevalence of systemic MHT prescriptions decreased by >60% in women aged 55-65 and by >50% in women aged 50 and 70 years old. Prevalence declined for most types and routes of administration at all ages (-16% to -79%) with some exceptions, e.g., local MHT (vaginal estrogen). Among 50-year-old women in 2012, 6% were already prescribed systemic MHT at age 49 and of the remaining women, 16% were newly prescribed systemic MHT before age 55. At all ages, the cumulative dose of systemic MHT prescribed over five years was lower in the period 2012-2016 compared to 2005-2009 (-6% to -46%). **Conclusions:** For most types of MHT and all age groups, prevalence declined considerably between 2004 and 2016 in Germany. The cumulative dose per MHT user also decreased, suggesting a trend towards a shorter duration of use.

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Progressive Resistance Training for Improving Health-Related Outcomes in People at Risk of Fracture: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Objective: Osteoporosis clinical practice guidelines recommend exercise to prevent fractures, but the efficacy of exercise depends on the exercise types, the population studied, or the outcomes of interest. The purpose of this systematic review was to assess the effects of progressive resistance training (PRT) on health-related outcomes in people at risk of fracture. **Methods:** Multiple databases were searched to October 2019. Eligible articles were randomized controlled trials (RCTs) of PRT interventions in men and women ≥50 years with low bone mineral density (BMD) or fracture history. Descriptive information and mean difference (MD) and standard deviation (SD) were directly extracted for included trials. Fifty-three studies were included. **Results:** PRT does not increase the total number of falls (incidence rate ratio [IRR] = 1.05; 95% CI = 0.91 to 1.21; 7 studies), whereas the effects on risk of falls are uncertain (relative risk [RR] = 1.23; 95% CI = 1.00 to 1.51; 5 studies). PRT improved performance on the Timed "Up and Go" test (MD = -0.89 seconds; 95% CI = -1.01 to -0.78; 13 studies) and health-related quality of life (standardized mean difference [SMD] = 0.32; 95% CI = 0.22 to 0.42; 20 studies). PRT may increase femoral neck (MD = 0.02 g/cm²; 95% CI = 0.01 to 0.03; 521 participants, 5 studies) but not lumbar spine BMD (MD = 0.02 g/cm²; 95% CI = -0.01 to 0.05; 4 studies), whereas the effects on total hip BMD are uncertain (MD = 0.00 g/cm²; 95% CI = 0.00 to 0.01; 435 participants, 4 studies). PRT reduced pain (SMD = -0.26; 95% CI = -0.37 to -0.16; 17 studies). Sensitivity analyses including PRT-only studies confirmed these findings. **Conclusion:** Individuals at risk of fractures should be encouraged to perform PRT, as it may improve femoral neck BMD, health-related quality of life, and physical functioning. PRT also reduced pain; however, whether PRT increases or decreases the risk of falls, the number of people experiencing a fall, or the risk of fall-related injuries is uncertain.

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Non-Pharmacological Interventions in Osteosarcopenia: A Systematic Review

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Background: Osteosarcopenia is a geriatric syndrome defined by the concomitant presence of osteopenia/osteoporosis (loss of bone mineral density (BMD)) and sarcopenia (loss of muscle mass and/or function), which increases the risk of falls, fractures, and premature mortality. **Objective:** To examine the efficacy of non-pharmacological (exercise and/or nutritional) interventions on musculoskeletal measures and outcomes in osteosarcopenic adults by reviewing findings from randomized controlled trials (RCTs). **Methods:** This review was registered at PROSPERO (registration number: CRD42020179292) and conducted in accordance with the PRISMA guidelines. Electronic databases were searched for RCTs assessing the effect of at least one non-pharmacological intervention (any form of exercise and/or supplementation with protein, vitamin D, calcium or creatine) on any musculoskeletal measure/outcome of interest (BMD, bone strength/turnover, muscle mass and strength, physical performance, falls/fractures) in adults with osteosarcopenia as defined by any proposed criteria. **Results:** Two RCTs (of n=106 older osteosarcopenic adults (≥ 65 years)) assessing the effects of progressive resistance training (RT) (via resistance bands or machines; 2-3 times/week; ~60 minutes in duration) were eligible for inclusion. The two RCTs demonstrated moderate quality evidence that RT increases muscle mass, strength, and quality, with changes in strength and quality occurring before muscle mass (12 vs 28 weeks). There was low quality evidence that RT increases lumbar spine BMD and maintains total hip BMD when performed for 12 and 18 months, respectively, and moderate quality evidence that RT has no effect on markers of bone turnover or physical performance. No major adverse effects were recorded in either of the RCTs. There were no eligible RCTs examining the impact of nutritional interventions. **Conclusion:** Chronic RT is safe and effective at potentiating gains in muscle mass, strength, and quality, and increasing or maintaining BMD in older osteosarcopenic adults. No RCT has examined the effects of protein, vitamin D, calcium, or creatine against a control/placebo in this high-risk population.

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The impact of bisphosphonates on mortality and cardiovascular risk among osteoporosis patients after cardiovascular disease

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Background/purpose: Bisphosphonates (BPs) impact on the survival and cardiovascular safety of osteoporosis patients after acute coronary syndrome (ACS) or acute ischemic stroke (AIS) was evaluated. **Methods:** A nationwide epidemiological study was conducted using the Taiwan National Health Insurance Research Database from 2000 to 2010. From the 1456 osteoporosis patients with previous ACS or AIS, mortality and cardiovascular safety was compared between 464 patients who used BPs and 464 patients who did not. Primary outcomes included all-cause mortality, and major adverse cardiovascular events. **Results:** The BPs group had a lower risk of all-cause mortality than the control group after the 8-year follow-up (HR, 0.64; 95% CI, 0.46-0.88; P = 0.006). The risks of myocardial infarction, ischemic stroke, cardiovascular death, hospitalization for heart failure or other causes of mortality were similar across groups. However, there was a higher risk of hospitalization for atrial fibrillation in the BPs group than the control group (HR, 1.76; 95% CI, 1.26-2.46; P = 0.001). **Conclusion:** Among osteoporosis patients after ACS or AIS, BPs use was associated with a reduced risk of all-cause mortality. However, patients with previous cardiovascular disease who received BP treatment should be careful about the risk of atrial fibrillation.