

## Selección de Resúmenes de Menopausia

Semana del 27 de mayo al 2 de Junio 2020

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### **The Predictive Value of Sarcopenia and Falls for 2-Year Major Osteoporotic Fractures in Community-Dwelling Older Adults.**

Su Y1, Lam FMH1, Leung J2, Cheung WH3, Ho SC4, Kwok T5,6.

To evaluate the associations of sarcopenia and previous falls with 2-year major osteoporotic fractures (MOFs) in community-dwelling older adults. Four thousand Chinese men and women  $\geq 65$  years recruited from Hong Kong communities were prospectively followed up. Measures of muscle mass, grip strength, gait speed and falls in the previous year were recorded at baseline, the 2nd year and the 4th year visit for each subject. The associations of fall history, sarcopenia and its components with 2-year MOFs were evaluated using generalized linear mixed models. Poor grip strength and poor gait speed were significantly associated with a higher 2-year MOFs risk, with an adjusted OR (95% CI) per one SD decrease of 1.48 (1.17, 1.87) and 1.17 (1.00, 1.36), respectively. Falls in the previous year was a significant predictor for 2-year MOFs risk, with an adjusted OR (95% CI) per one added fall of 1.85 (1.40, 2.44) in men and 1.26 (1.01, 1.58) in women. The adjusted OR (95% CI) of height adjusted appendicular lean muscle mass (ALM/height<sup>2</sup>) per one SD decrease and sarcopenia for 2-year MOFs risk were 1.34 (0.87, 2.06) and 1.72 (0.92, 3.21) in men, and were 0.73 (0.57, 0.93) and 0.76 (0.39, 1.47) in women, respectively (P for interaction by gender = 0.012 and 0.017, respectively). Poor sarcopenia-related physical performance and falls in the previous year were significant predictors for 2-year MOFs in community-dwelling older adults. The predictive value of ALM by DXA for near-term fracture risk is limited and different across genders.

**Eur J Contracept Reprod Health Care. 2020 May 29;1-2. doi: 10.1080/13625187.2020.1766017. [Epub ahead of print]**

### **The gendered impact of coronavirus disease (COVID-19): do estrogens play a role?**

Grandi G1, Facchinetti F1, Bitzer J2.

**Objective:** Although sex-disaggregated data for COVID-19 show equal numbers of cases between men and women, there seem to be sex differences in mortality rate and vulnerability to the disease: more men than women are dying. **Methods:** We have explored the potential role of estrogens in this COVID-19 gendered impact. **Results:** Estrogens stimulate the humoral response to viral infections, while testosterone and progesterone give an immune suppression of both innate and cell-mediated immune responses. We hypothesise that estrogens, in particular estradiol but also synthetic estrogen such as ethinylestradiol, could protect women from the most serious complications of COVID-19. The use of medications that keep hormonal levels high and stable, such as combined hormonal contraceptive, could therefore play a protective role. These potential benefits overtake the thrombotic risk in healthy women. As stated by the World Health Organization, all modern methods of contraception were safe to use during the COVID-19 pandemic.

**Bone. 2020 May 25;115452. doi: 10.1016/j.bone.2020.115452. [Epub ahead of print]**

### **Timing of anti-osteoporosis medications initiation after a hip fracture affects the risk of subsequent fracture: A nationwide cohort study.**

Wang CY1, Fu SH2, Yang RS3, Chen LK4, Shen LJ5, Hsiao FY6.

**OBJECTIVE:** The optimal time after hip fracture to start prophylactic anti-osteoporosis medications (AOMs) remains uncertain, especially in real-world practice. Therefore, we investigated how AOMs initiation timing affects the risk of subsequent osteoporotic fractures, and what factors influence AOMs prescription timing. **METHOD:** Patients  $\geq 50$  years old with diagnostic codes indicating hospitalization for hip fracture (n = 77,930) were sampled from the Taiwan National Health Insurance Research Database; 9986 who were prescribed AOMs  $\leq 1$  year after a newly-diagnosed hip fracture were grouped into those who started AOMs from:  $\leq 14$  days (early); 15-84 days (very early); 85-252 days (late); and 253-365 days (very late). Associations with fracture-related hospitalizations after an index fracture were analyzed using a multivariate, time-dependent Cox proportional hazards model, and between-group differences compared by log-rank testing. Factors influencing AOMs initiation timing were elucidated using

multivariate logistic regression analyses. RESULTS: Compared to AOMs initiation from 15 to 84 days, initiation after 252 days was associated with significantly increased risk of fracture-related re-hospitalization (HR = 1.93, 95% CI 1.29-2.89). Both sensitivity and pre-specified subgroup analyses yield similar results. Among patients with high AOMs adherence, the increased risk of subsequent fracture-related hospitalization among very late users was profound (HR = 2.56, 95% CI 1.41-4.64).

**J Clin Med. 2020 May 23;9(5). pii: E1588. doi: 10.3390/jcm9051588.**

### **Role of Menopausal Transition and Physical Activity in Loss of Lean and Muscle Mass: A Follow-Up Study in Middle-Aged Finnish Women.**

Juppi HK1, Sipilä S1, Cronin NJ2,3, Karvinen S1, Karppinen JE4, Tammelin TH5, Aukee P6, Kovanen V1, Kujala UM4, Laakkonen EK1.

In midlife, women experience hormonal changes due to menopausal transition. A decrease especially in estradiol has been hypothesized to cause loss of muscle mass. This study investigated the effect of menopausal transition on changes in lean and muscle mass, from the total body to the muscle fiber level, among 47-55-year-old women. Data were used from the Estrogenic Regulation of Muscle Apoptosis (ERMA) study, where 234 women were followed from perimenopause to early postmenopause. Hormone levels (estradiol and follicle stimulating hormone), total and regional body composition (dual-energy X-ray absorptiometry (DXA) and computed tomography (CT) scans), physical activity level (self-reported and accelerometer-measured) and muscle fiber properties (muscle biopsy) were assessed at baseline and at early postmenopause. Significant decreases were seen in lean body mass (LBM), lean body mass index (LBMI), appendicular lean mass (ALM), appendicular lean mass index (ALMI), leg lean mass and thigh muscle cross-sectional area (CSA). Menopausal status was a significant predictor for all tested muscle mass variables, while physical activity was an additional significant contributor for LBM, ALM, ALMI, leg lean mass and relative muscle CSA. Menopausal transition was associated with loss of muscle mass at multiple anatomical levels, while physical activity was beneficial for the maintenance of skeletal muscle mass.

**Menopause. 2020 May 25. doi: 10.1097/GME.0000000000001581. [Epub ahead of print]**

### **Association between waist-hip ratio and coronary artery calcification in postmenopausal women.**

Eun Y1, Lee SN2, Jung J2, Kim MS2, Moon KW2, Yoo KD2.

OBJECTIVE: Many studies have reported that body composition might be associated with cardiovascular disease, but the issue has not been fully investigated in postmenopausal women. METHODS: This retrospective study comprised 582 postmenopausal women without a history of cardiovascular disease who visited the Health Promotion Center between May 2008 and February 2018. All women were screened for body fat composition by bioelectrical impedance analysis and for degree of coronary artery calcification (CAC) by multidetector computed tomography. In addition, multivariate analysis, integrated discrimination improvement, and category-free net reclassification improvement were performed. RESULTS: The level of triglycerides, and the waist-hip ratio (WHR) in participants with CAC (coronary artery calcium score [CACS]>0) were higher than in participants with a CACS of zero points. When the participants were stratified into four groups according to WHR, participants with CAC (CACS>0) increased significantly as WHR quartile increased. A multivariate analysis showed that older age (odds ratio [OR]: 2.539; 95% confidence interval [CI]: 1.524-4.230; P<0.001), triglyceride level (OR: 1.005; 95% CI: 1.002-1.008; P=0.003), WHR (OR: 1.103; 95% CI: 1.018-1.195; P=0.017), and history of hypertension (OR: 2.701; 95% CI: 1.715-4.253; P<0.001) were significantly associated with CAC. The Brier score upon adding WHR to a clinical model was lower than that of the clinical model without WHR. Adding WHR to a clinical model better predicted CAC than a clinical model without WHR (C index: 0.761, 95% CI: 0.724-0.795, P<0.001; net reclassification improvement: 0.195, P=0.037; integrated discrimination improvement: 1.02%, P=0.043). CONCLUSIONS: In asymptomatic postmenopausal women, WHR as measured by bioelectrical impedance analysis was significantly associated with coronary atherosclerosis, supplementing information of usual clinical markers. Hence, WHR might be appropriate as a marker for early atherosclerosis. CONCLUSION: AOMs initiation timing was significantly associated with age, index year, index hospital length of stay, accreditation level and geographic region. After adjusting factors associated with AOMs initiation timing and patients' adherence, the anti-fracture benefit of AOMs still depends crucially on the timely initiation of AOMs.

**Menopause. 2020 Jun;27(6):668-678. doi: 10.1097/GME.0000000000001518.**

## **Coexistence of metabolic syndrome and osteopenia associated with social inequalities and unhealthy lifestyle among postmenopausal women in South Korea: the 2008 to 2011 Korea National Health and Nutritional Examination Survey (KNHANES).**

Lee H1, Kim J2, Lim H1,2.

**OBJECTIVE:** The prevalence of metabolic syndrome (MetS) and osteoporosis (OP) among postmenopausal women has been rapidly increasing. We examined the associations between socioeconomic status-related factors, unhealthy lifestyle, and the coexistence of MetS and osteopenia or OP. **METHODS:** One thousand nine hundred ninety-one postmenopausal women aged 45 to 65 years were used to select a representative sample of the civilian, noninstitutionalized South Korean population from the 2008 to 2011 Korea National Health and Nutrition Examination Survey data. Women were grouped as neither MetS nor OP (normal), MetS, OP, and both MetS and OP (MetS+OP). Socioeconomic status (education, household income, place of residence, employment status), health-related behaviors (physical activity, alcohol consumption, smoking), and diet-related factors (intake of nutrients and food groups, eating habits, food insecurity) were obtained. Logistic regression models were used to examine the odds ratio (OR) and 95% confidence interval (CI). **RESULTS:** The prevalence of MetS+OP was 32.5%. The average number of MetS risk factors in MetS+OP was 3.5, higher than that of normal and OP groups ( $P<0.001$ ). Bone mineral density at all sites was significantly lower in MetS+OP than normal and MetS groups ( $P<0.001$ ). Also, calcium, phosphorus, vitamin A, riboflavin, and niacin levels were lowest in the MetS+OP group compared with the three other groups ( $P<0.05$ ). After controlling for covariates, low-income and low-education women were more likely to have MetS+OP (OR 1.97, 95% CI 1.04-3.72); high-income and high-education group was 70% less likely to have MetS+OP (OR 0.30, 95% CI 0.10-0.86) compared with the middle-income and middle-education group. **CONCLUSIONS:** Social inequalities might be powerful contributors in Korean postmenopausal women with coexistence of MetS and OP. Therefore, social and political perspective approaches are required in this population for prevention and treatment of MetS and OP. Future studies should explore to find controllable factors and thereby improve health status in postmenopausal women.

**Exp Gerontol. 2020 May 25;110974. doi: 10.1016/j.exger.2020.110974. [Epub ahead of print]**

## **Prevalence of muscle dysfunction concomitant with osteoporosis in a home-dwelling Danish population aged 65-93 years - The Copenhagen Sarcopenia Study.**

Nielsen BR1, Andersen HE2, Haddock B3, Hovind P4, Schwarz P5, Suetta C6.

**INTRODUCTION:** As life expectancy increases, a growing percentage of older individuals with age-related diseases such as osteoporosis and sarcopenia are expected. Patients with both conditions, i.e. patient with osteosarcopenia, are suggested to have a higher risk of fall and fracture compared to individuals with either condition. **AIM:** To investigate the potential relationship between low bone mineral density (BMD) and muscle dysfunction in a Danish cohort of older home-dwelling individuals. Furthermore, to examine the prevalence of osteosarcopenia and alterations in prevalence depending on cut-off values chosen. **METHOD:** Measures of BMD, relative appendicular lean mass and hand grip strength were assessed in 529 individuals aged 65+ from the population-based cross-sectional Copenhagen Sarcopenia Study (CSS). Osteoporosis was diagnosed according to the World Health Organization guidelines. Sarcopenia was diagnosed in accordance with the guidelines from the European Working Group on Sarcopenia in Older People (EWGSOP2) with application of cut-off values from the EWGSOP2 paper compared to cut-off values derived from a local cohort (CSS). **RESULTS:** 19.2% had osteoporosis (66 women and 35 men), whereas 2.7% (6 women and 8 men) and 4.2% (7 women and 15 men) had sarcopenia with application of EWGSOP2 and CSS cut-off values, respectively. Using the EWGSOP2 cut-off values, 1.5% (4 women and 4 men) were diagnosed with osteosarcopenia compared to 1.4% (4 women and 3 men) using CSS cut-off values. In the osteoporosis sub-population, 8% (EWGSOP2) and 7% (CSS) had sarcopenia and within the sarcopenia sub-population, 61.5% (EWGSOP2) and 33.3% (CSS) had osteoporosis. At all sites, BMD was lower among individuals with sarcopenia and sarcopenia increased the risk of osteoporosis (odds ratios: EWGSOP2: 7.3 ( $p<0.001$ ) and CSS: 2.2 (ns)). **CONCLUSION:** Osteosarcopenia was present in 1.5% of a group of healthy home-dwelling older individuals. Notably, individuals with sarcopenia had lower BMD and a higher risk of osteoporosis, whereas the opposite (prevalence of sarcopenia in individuals with osteoporosis) was not as frequent. Our data indicate that screening for sarcopenia and osteoporosis should be performed simultaneously in older individuals at high risk of falls and fractures. However, further studies with outcome-related results are needed to identify optimal measures of osteosarcopenia and cut-off values for sarcopenia.