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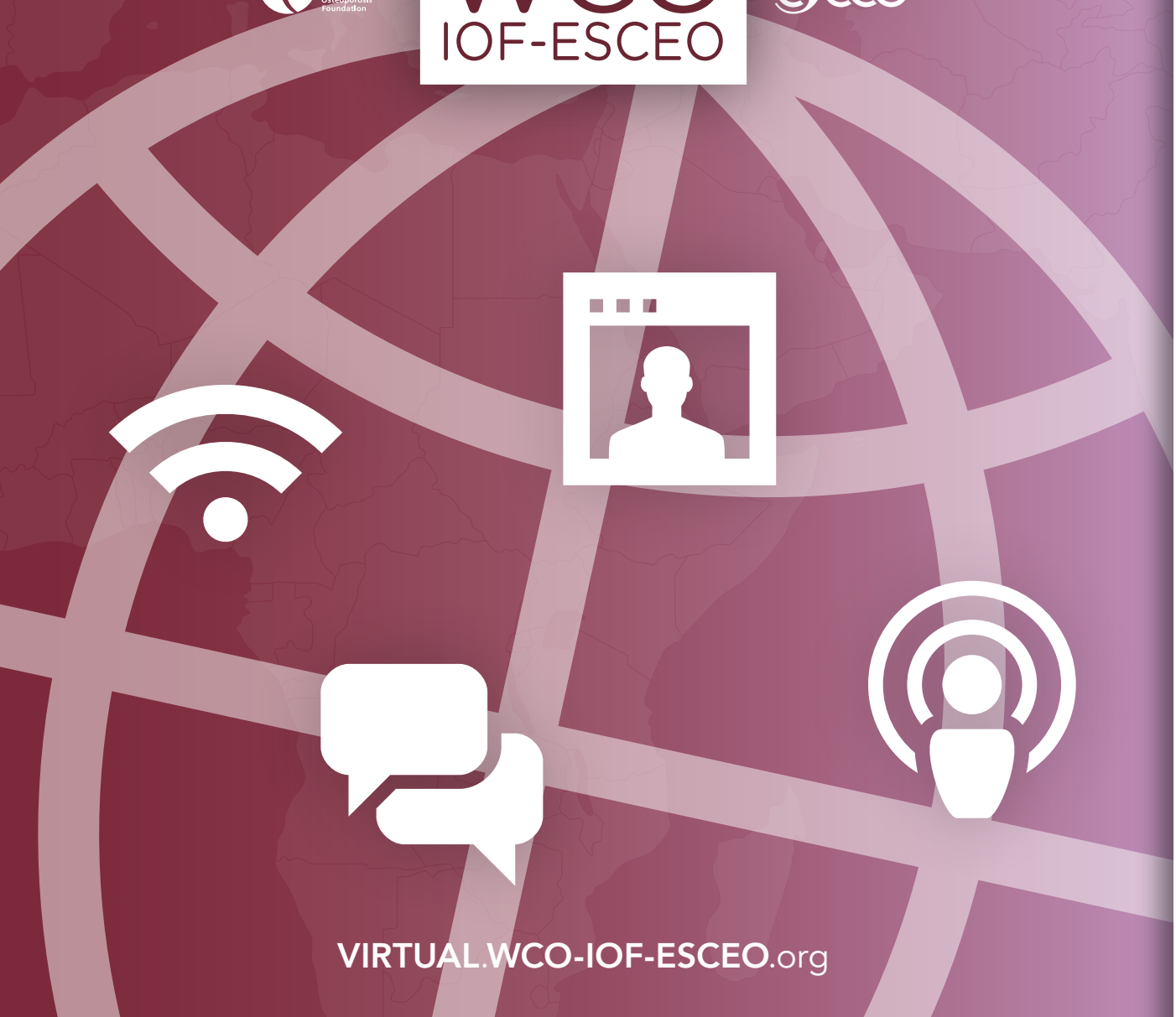

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AbstractBook

osteoporosis. In this study, we explored the causal associations between plasma protein levels and osteoporosis via Mendelian randomization (MR).

Methods: The summary-level genome-wide association studies (GWAS) for 3263 plasma protein levels were used as exposures. The genetic statistics for osteoporosis with a large sample size were acquired from UK Biobank. We selected independent GWAS SNPs for each exposure using the clumping algorithm in PLINK at a suggestive threshold (r^2 threshold=0.001 and window size=1 Mb) with the 1000 Genomes Project data as the reference for linkage disequilibrium estimation. The genome-wide significant *P-value* for protein levels was set as 1×10^{-5} to get enough instrumental variants for MR analyses. We then removed horizontal pleiotropic SNPs using RadialMR. We conducted four two-sample MR methods, including Inverse-Variance Weighted (IVW), Weighted-median, Weighted mode, and MR-Egger regression. The final results considered the directional consistency of estimate for all methods and all these analyses were performed with R package (TwoSampleMR).

Results: The fixed-effect IVW meta-analysis demonstrated a risk effect of protein PSAPL1 on osteoporosis after multiple testing corrections (OR=1.348, 95%CI: 1.196-1.519, P=9.77×10^{-7}). MR-Egger regression analysis did not produce evidence of directional horizontal pleiotropy (OR=1.002, 95%CI: 0.951-1.056, P=0.943), and identified a similar causal effect of PSAPL1 level on osteoporosis (OR=1.334, 95%CI: 0.988-1.801, P=0.079). Sensitivity analysis also demonstrated similar causal effects using the weighted median (OR=1.297, 95%CI: 1.095-1.535, P=2.60×10^{-3}) and weighted mode (OR=1.261, 95%CI: 1.003-1.586, P=0.0649), respectively.

Conclusion: We investigated the causal effect of plasma protein levels on osteoporosis using two-sample MR methods. Our results suggest the risk effect of protein PSAPL1 on osteoporosis.

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TAPENTADOL IN AN OF COMPLEX PAIN SYNDROME IN OSTEOPOROTIC VERTEBRAL FRACTURES

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Objective: Severe neuropathic pain, which does not allow rehabilitation, can join acute pain in osteoporotic vertebral fractures. We aimed to evaluate the effectiveness of using tapentadol with poor tolerance to nonsteroid drugs, tramadol, gabapentin/pregabalin.

Methods: 19 patients with poor tolerance of standard drugs were given tapentadol tablets 50 mg, 2 times a day. After 3 days, 1 week, 1 month and 3 months, YOUR pain level, the number of tablets taken and the tolerance of the drug were evaluated.

Results: At the time of administration of tapentadol, pain according to YOUR more than 80 mm. By day 3, pain reduction by YOUR 30% (up to 51.8±12.5 mm). By day 7, 11 patients had reduced the rate of taking tapentadol by 32%, by the end of 1 month only 6 patients had continued taking tapentadol. The level of pain in the 1st group was 39.3±10.6 mm, in the 2nd - 58.7±8.3 mm. 17 out of 19 patients reported regular exercise recommended for muscle building. Vertebroplasty was performed on 2 patients with neuropathic pain syndrome and the pain syndrome was stopped. By the 3rd month of therapy, all patients stopped taking tapentadol due to lack of need, took simple analgesics on demand. The average pain level for YOUR was 37.5±16.4 mm for YOUR.

Conclusion: The use of tapentadol allows you to effectively stop mixed pain with poor tolerance of other drugs. Adequate analgesia contributes to the early activation of patients with AKI, favorably affects rehabilitation, and improves the quality of life of patients.

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PATHOLOGICAL FRACTURES IN WOMEN IN MENOPAUSE WITH TYPE 2 DIABETES AT NORMAL MINERAL DENSITY

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Objective: To assess the incidence of pathological fractures in menopausal women with type 2 diabetes mellitus with normal BMD.

Methods: The study included 50 menopausal women aged 50-75 y. The average age of the patients is 62.2±5.7 y. Gr 1 with newly diagnosed type 2 diabetes - 15 people, Gr 2 with type 2 diabetes for more than 10 y - 20 people, Gr 3 control - 15 people, not suffering from diabetes, comparable in age and BMI. The average T-criterion detected during osteodensitometry in the 1st gr (-0.8)±1.1; in gr 2 (-0.7)±1.7; in gr 3 - (-0.7)±1.8. Osteodensitometry was performed on a DPX bone x-ray densitometer Lunar, GE (USA). According to WHO recommendations, the assessment of bone tissue was carried out according to the T-criterion, a 10-y risk of fractures was evaluated using the FRAX.

Results: A history of low-traumatic fractures was observed in 5 from the 1st group (33%), 13 from the 2nd (65%) and 3 out of 3 (20%). Moreover, out of 50 women with normal BMD in the presence of one or more pathological fractures, a high risk of major osteoporotic fractures was identified only in the group under 68 y of age, provided that a femoral neck fracture occurred in blood relatives, and a high risk of femoral neck fracture in patients older than 73 y, in the absence of a history of fractures, a high risk of a femur fracture was revealed in a 75-year-old patient, which is determined by the age criteria of the evaluated group.

Conclusion: Low-traumatic fractures in the group with newly diagnosed type 2 diabetes are observed 2 times more often than in healthy individuals, and in patients with type 2 diabetes more than three times more than 10 y, which indicates a negative effect of type 2 diabetes on bone mass with its normal mineralization.

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FRAILTY AND SARCOPENIA IN INFLAMMATORY RHEUMATIC DISEASE

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Objective: The incidence of rheumatoid arthritis (RA) and spondylarthritis (SpA) increases with age. In the ageing population, therefore, it is expected that the number of patients with RA and SpA will grow proportionally and more patients will have comorbidities but also so called geriatric syndromes (GS). GS are clinical and multifactorial conditions in older persons that are associated with poor health outcomes, do not fit into disease categories (comorbidities) and require a multidimensional treatment approach. Limited awareness of the risk for GS in patients with inflammatory rheumatic disease among rheumatologists may lead to ineffective management of RA and SpA. Sarcopenia, the loss of skeletal muscle mass, is associated with adverse individual physical and metabolic changes contributing to morbidity and mortality. Sarcopenia is a core component of physical frailty that together impact negatively on an individual's capability to live independently. Sarcopenia and frailty are important problems among elderly individuals. Although relationships between sarcopenia and various chronic inflammatory diseases have been shown, the role in rheumatologic disease is currently unknown. The aim of this study was to assess the prevalence of sarcopenia and frailty syndrome in patients with RA and SpA.

Methods: Cross-sectional, observational and descriptive study in patients with RA and SpA (ACR and ASAS criteria) older than 50 y. We measure sarcopenia and frailty in each patient..

Sarcopenia was defined as per EWGSOP definition as Skeletal muscle mass index (SMI) ≤ 8.87 kg/m^2 in men and ≤6.42 kg/m^2 in women. Body composition analysis was performed using bioelectrical impedance analysis (BIA): fat mass, fat-free mass and predicted skeletal muscle mass were collected. Skeletal muscle mass index (SMI) was calculated by appendicular skeletal muscle mass (sum of predicted muscle mass in all 4 limbs) divided by height squared. Fragility was measured according to the 5 criteria proposed by Fried, using the Frail scale, and it was considered fragile to the patient who met at least 3 and prefragiles to those who met at least 2. Frail scale: Based on 5 items, reflecting performance, self reports and common comorbidities (1).

Results: 523 consecutive RA and SpA patients were included, 79.3 %) were female. Mean age was 55.4 y. Patients with SpA were 39.3% ankylosing spondylitis, 31.6% psoriasis arthritis, 20.1% undifferentiated SpA, 9% SpA associated with inflammatory bowel disease.

Mean number of comorbidities was 1.47, with systemic hypertension and obesity as the most frequent ones (32.6% and 27.1%, respectively). Polypharmacy was found in 94.2% and 63.9% received more than five drugs simultaneously. RA patients: 21.5% met frailty criteria (42% in ≥65 years old patients). SpA patients:18.9% met frailty criterion (37% in ≥65 years old patients).

Conclusion: Prevalence of frailty in this study was high. Sarcopenia and frailty is significantly higher in our patients with RA and SpA over 50 y of age than in the general population of the same age and sex. Rheumatologists should make an early detection of signs of frailty. The screening and early detection of frailty can spur reforms to make routine care less hazardous, can focus on outcomes most relevant to patients and can aid in understanding effectiveness of health care interventions, including at the population level.

In the European population over 50 years of age, the prevalence of prefrailty in women is 25.8%, and that of frailty is 7.8%, while in the male population, the prevalence of prefrailty is 14.6%, and of fragility 3.1% (2). Sarcopenia and frailty in our series are significantly more frequent than in the general population of the same age and sex.

References:

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HYBRID FIXATION THAT METAL PLATE WITH BIORESORBABLE SCREWS AND WIRES FOR ROBINSON TYPE 2B CLAVICLE FRACTURES IN OSTEOPOROTIC PATIENTS

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Shaft fracture of clavicle is well union and less complication even with conservative treatment. Nonunion or malunion often occur in displaced clavicle fractures or comminuted shaft fractures. The treatment of clavicle shaft fractures with these displaced comminuted fractures is performed by holding the free fragments with interfragmentary screws or wires and then fixing the clavicles with a plate. Therefore, we performed interfragmentary fixation using open reduction and internal fixation with bioresorbable screws (Resomet™ Bioresorbable bone screw, U&I Corporation, Gyeonggi-do, Korea) and bioresorbable wires (Resomet™ Bioresorbable K-wire and pin, U&I Corporation, Gyeonggi-do, Korea) for the displaced comminuted clavicle fractures (Robinson Type 2B) in osteoporotic patients and additionally using a metal plates. We report those 4 cases that were treated in this way.