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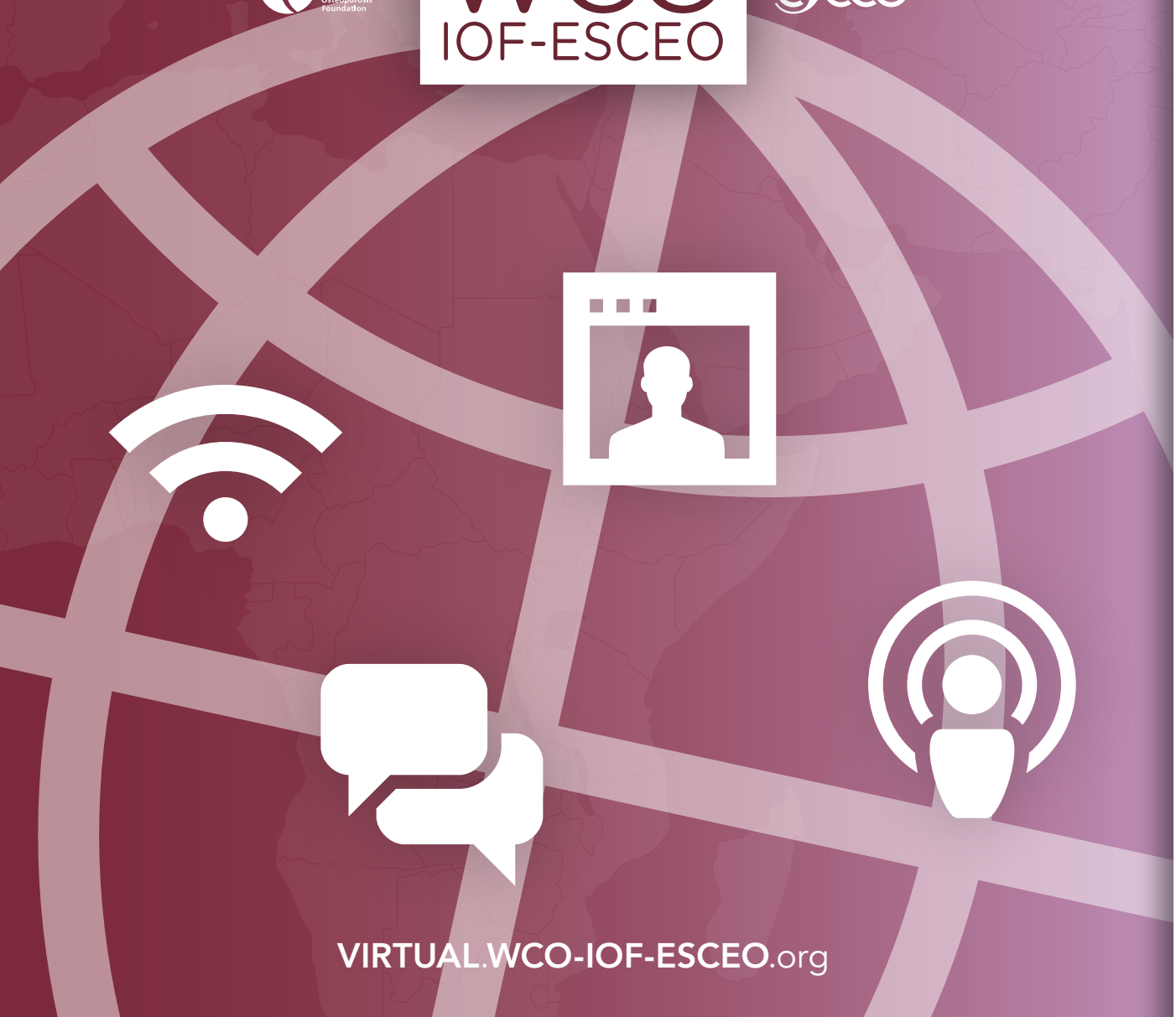

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AbstractBook

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.