WORLD CONGRESS
ON OSTEOPOROSIS,
OSTEOARTHRITIS AND
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DISEASES

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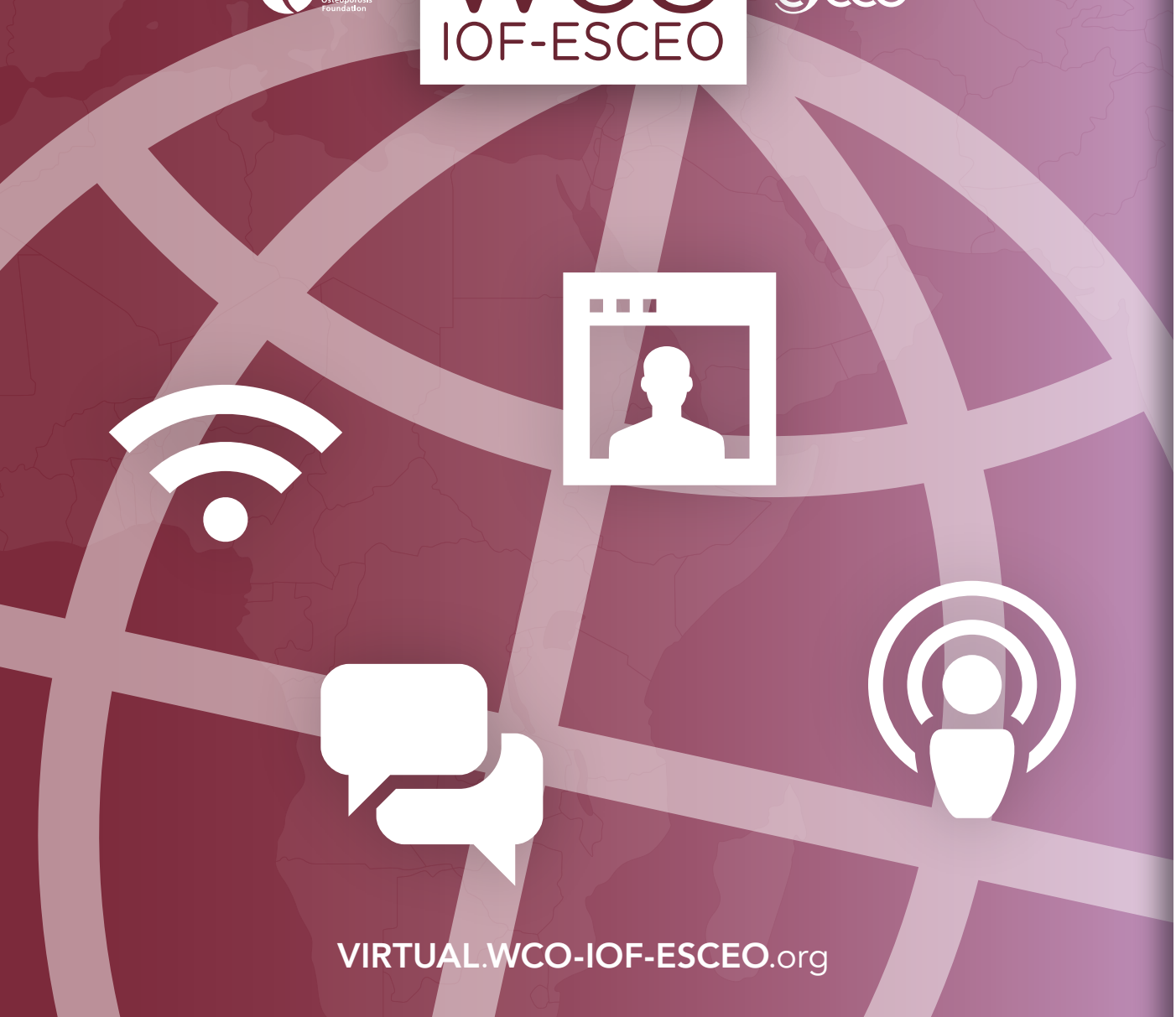

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AbstractBook

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OSTEOPOROSIS AND MANAGEMENT IMPLICATIONS ON CARDIOVASCULAR DISEASE

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Objective: Osteoporosis and cardiovascular pathology are common age-related health issues associated with a higher rate of disability, morbidity and mortality. Although this two conditions were considered to be independent and completely unrelated comorbidities, today there is a large evidence that proves how low mineral bone density has been related to accelerated subclinical atherosclerosis calcification, increasing the risk for myocardial infarction and stroke.

Methods: We report the case of a 67 years old, female patient, known with severe osteoporosis and systemic arterial hypertension grade 2. This patient is a nonsmoker, alcohol-free and doesn't have any other comorbidities. The patient presents in our clinic for her annual follow-up, complaining about dizziness, fatigue and generalized pain. At presentation BP=100/60 mmHg (on chronic medication for BP control), HR=74 bpm, SO2=98%, walking impairment and partially muscle hypotrophy. Blood work was unremarkable, except for low calcium and vitamin D. We also performed a standard ECG and an transthoracic echocardiography, without pathological parameters regarding the other visits.

Results: Neurological and rheumatological exams were both negative, so we concluded that the patient symptoms (dizziness and fatigue) were related to low BP and we adjusted her treatment appropriate for her actual status. To her next visit symptoms improved, but BP described important fluctuation related to her physical activities, which needed further treatment adjustment.

Conclusion: Osteoporosis has many clinical implications on systemic arterial hypertension management as we showed in our case. To treat this two major conditions can be sometimes very challenging to prevent the worst clinical scenario.

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IRISIN DETERMINATION FOR FRACTURES FORECASTING IN RHEUMATOID ARTHRITIS PATIENTS: RESULTS OF 3 YEARS FOLLOW-UP

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Objective: There is evidence that, in response to muscle contraction, a panel of cytokines and proteins called myokines are secreted. Myokines perform an autocrine function in regulating muscle metabolism and a paracrine (endocrine) function for distant organs and tissues such as bones, adipose tissue, liver and brain. Exercise stimulates the expression of a fibronectin type III domain containing gene 5 (FNDC 5) of irisin protein. With rheumatoid arthritis, a decrease in the level of irisin (IR) is detected, leading to the occurrence of secondary osteoporosis. There is a violation of the microarchitectonics of bone tissue, which leads to the development of low-energy bone fractures. Some studies show that serum IR level inversely correlated with vertebral fractures in postmenopausal patients. We aimed to study relationship between low-energy bone fractures in rheumatoid arthritis (RA) patients and serum IR level.

Methods: We have studied 170 people: 110 RA patients (mean age 53.58±12.32; hereinafter M±SD) and 60 healthy controls. All patients with RA were examined using DXA using Lunar DPX-Pro densitometer. Serum IR level was measured once at the beginning of the study by indirect solid-phase enzyme immunoassay (BioVender, Cat No. RAG018R). After 3 y of control period, 22 patients were excluded from the trial because of lost contacts. History of low-energy fractures was obtained from remaining 88 patients. Low-energy fractures were confirmed by X-ray examination and/or by anamnesis data.

Results: The mean concentration of IR in RA group was 14.48±7.07 μg/ml, which was significantly lower than in healthy donors – 20.49±4.82 μg/ml ($p<0.001$). After 3 y of follow-up we divided the RA patients into two groups: the first group (n=11) included patients with low-energy fractures, the second group (n=77) consisted of patients without low-energy fractures in anamnesis. In 1st group IR level was lower than in 2nd one (9.957±3.775 μg/ml and 15.109±7.189 μg/ml accordingly, $p=0.022$). To study prognostic value of IR determination in RA for fractures forecasting we performed ROC-analysis. Area under the receiver operating characteristic curve was 0.702, 95%CI 0.596-0.795. Optimal decision threshold of IR was equal 11.45 μg/ml (sensitivity 81.82%, specificity 61.04%).

Conclusion: We suppose serum IR determination may be prognostic laboratory test for low-energy fractures forecasting in RA patients.

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INFLUENCE OF SMOKING ON THE VITAMIN D STATUS AND INCREASE OF BONE MINERAL DENSITY IN WOMEN WITH POSTMENOPAUSAL OSTEOPOROSIS

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Objective: Smoking was identified as a risk factor for osteoporosis and fractures and was included in the Fracture Risk Assessment Tool. The tobacco smoking causes an imbalance in bone turnover, leading to lower bone mass and making bone vulnerable to osteoporosis and fracture. Tobacco smoke influences bone mass indirectly through alteration of body weight, PTH-vitamin D axis, adrenal hormones, sex hormones, and increased oxidative stress on bony tissues. Also, tobacco smoke influences bone mass through a direct effect on osteogenesis and angiogenesis of bone. The aim of this study is were to compare vitamin D levels in smokers to nonsmokers in women with newly diagnosed