

WORLD CONGRESS
ON OSTEOPOROSIS,
OSTEOARTHRITIS AND
MUSCULOSKELETAL
DISEASES

VIRTUAL CONGRESS

August 26-28, 2021



2021 VIRTUAL



VIRTUAL.WCO-IOF-ESCEO.org

AbstractBook

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THE VALUES OF BONE RESORPTION MARKER β -CTX FOR EARLY DETECTION OF POSTMENOPAUSAL OSTEOPOROSIS

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Objective: 30-40% of healthy women develop postmenopausal osteoporosis after the last menstruation due to a loss of estrogenic hormones. Until recently, the measure of bone density was the most commonly used method for osteoporosis detection. The disease was diagnosed very late, often after voluminous osteoresorption. For timely intervention it is necessary to detect the extent of the bone resorption what has been enabled by usage of biochemical markers for assessment of osteoresorption and osteoformation. This study aimed to determine the values of serum β -CTx in perimenopausal and postmenopausal women.

Methods: A total of 350 women were included in this study. 45 of them were in the control group of healthy women with regular menstrual cycles.

The other 305 women were divided in 6 subgroups:

PeriM: 51 women in perimenopausal period

M1: 52 women with duration of postmenopause <2 y

M2: 52 women with duration of postmenopause 2-6 y

M3: 50 women with duration of postmenopause 6-10 y

M4: 52 women with duration of postmenopause > 10 y

Mt: 48 women with postmenopausal osteoporosis, treated with antiresorptive therapy

β -CTx was determined in serum, with ECLIA method and measured in ng/ml.

Results: In the control group all of the respondents had normal values of beta CTx. In perimenopausal group (PeriM), the values of β -CTx were above the upper limit (0.299 ng/ml) in 39.22% of women. In postmenopausal groups, the values of β -CTx were above the upper limit for postmenopausal women (0.556 ng/ml) in 39.22% of women in PeriM group; in 38.46% of women in M1 group; in 51.92% of women in M2 group, in 61.54% of women in M3 group and in 59.62% of women in M4 group. Patients treated with antiresorption therapy had normal values of serum β -CTx.

Conclusion: β -Ctx derived from collagen type 1 is an important biochemical marker that reflects the intensity of bone resorption, determines the individual risk of bone loss and fractures, especially in postmenopausal women. The percentage of women with increased markers for bone resorption, and thus an increased risk of postmenopausal osteoporosis, increases with age and duration of postmenopause.

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MOTOR CONTROL AND ERGONOMIC INTERVENTION HOME BASED PROGRAMME DURING COVID-19 PANDEMIC: PRELIMINARY RESULTS OF THE MCHEELP STUDY

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Objective: To investigate the effects of a 12 week "Motor Control Home Ergonomics Elderlies' Prevention of Falls" (McHeELP) on functionality and fear of falling among Greek older adults.

Methods: 52 older adults (aged ≥ 65 y) who had experienced at least one fall incident in the past 12 months were randomly assigned into two groups. The first group (n=26) received motor control exercises combined with ergonomic arrangements of the home environment and the second group served as control (n=26). The McHeELP programme includes motor control exercises, divided into six domains: "Warm up," "Serial skills," "Cognitive skills," "Balance," "Sensory strategy," and "Dynamic control." Regarding home modification, a booklet that contained basic advice and tips on the modification for their home environment was provided to all participants. Functional assessments included 4-m, timed-up and go (TUG) and chair stand (CS) tests. Fear of falling was assessed via the Falls Efficacy Scale (FES-I) questionnaire. All participants were assessed at baseline and immediately post intervention (week 12). The Ethics Committee of the University of Patras, Greece, approved the study protocol.

Results: A total of 52 participants (20 men; 32 women) with a mean age of 76.26 ± 6.33 y participated in this study. Comparison between pre- and post-intervention changes in functional measures and fear of falling showed significant interaction between "intervention" and "time" in 4-m test ($p=0.014$), TUG ($p<0.005$), CS test ($p=0.011$) and fear of falling ($p=0.041$). Pairwise comparisons presented statistically significant difference between baseline and 3 months for all variables. No statistically significant differences between time measurements were found for the control group.

Conclusion: Results suggest that the McHeELP programme is feasible and beneficial for older adults. This novel home-based exercise programme is low cost and may help to increase functionality and decrease falls in older adults. Further research is needed to understand the effects of this targeted exercise program on older adults' motor control.