Conclusion: Therefore, we can affirm that age is not a contraindication of TKA. However, we should try to decrease the need of transfusion and consider that more social resources may be needed after the hospital discharge in octogenarian patients.

P140

ASSESSMENT OF NUTRITIONAL STATUS AND BOWEL HABITS IN OSTEOPOROSIS: A CROSS-SECTIONAL, MULTICENTER STUDY OF TURKISH ELDERLY FEMALE POPULATION

A. Y. Karahan[1], S. Bagcaci[2], B. Ordahan[3], B. Sevinc[4], K. Ozkuk[5], B. Kuran[6], N. Sahin[7], A. Karakoyun[8], E. Salbas[9], S. Ketenci[10], P. Yildirim[11], B. Uysal[12], O. Sert[2], G. Gokmen[13], E. Kaydok[9], S. Savas[14], M. Sahin[15], B. Sarifakioglu[16]
[1]Faculty of Medicine of University of Usak / Department of Physical Medicine and Rehabilitation, Usak, [2]Faculty of Physical Therapy and Rehabilitation of KTO Karatay University / Department of Physical Medicine and Rehabilitation, Konya, [3]Konya Training and Research Hospital of health Science University / Department of Physical Medicine and Rehabilitation, Konya, [4]Faculty of Medicine of Usak University / Department of General Surgery, Usak, [5]Faculty of Medicine of Usak University / Department of Medical Ecology and Hydroclimatology, Usak, [6]University of Health Sciences, Şişli Hamidiye Etfal Training and Research Hospital / Department of Physical Medicine and Rehabilitation, Istanbul, [7]Faculty of Medicine of University of Balikesir / Department of Physical Medicine and Rehabilitation, Balikesir, [8]Faculty of Medicine of Aksaray University / Department of Physical Medicine and Rehabilitation, Aksaray, [9]Department of Physical Medicine and Rehabilitation, University of OHD Nigde, Nigde, [10]University of Giresun/ Department of Rheumatology, Giresun, [11]Kocaeli Health Sciences University Derince Training And Research Hospital / Department of Physical Medicine and Rehabilitation, Kocaeli, [12]Ababant Izzet Baysal University Izzet Baysal Physical Medicine and Rehabilitation Training and Research Hospital / Department of Physical Medicine and Rehabilitation, Bolu, [13]Seferihisar Necat Hepkon State Hospital / Department of Physical Medicine and Rehabilitation, Izmir, [14]Karapinar State Hospital / Department of Physical Medicine and Rehabilitation, Konya, [15]Magnet Hospital / Department of Physical Medicine and Rehabilitation, Kayseri, [16]Faculty of Medicine of Namik Kemal University, Tekirdag / Department of Physical Medicine and Rehabilitation, Tekirdag, Turkey

Objective: To investigate the differences in nutritional status and bowel habits between osteoporotic and nonosteoporotic elderly females

Methods: Design: A multicenter cross-sectional study. Setting: 12 different provinces of Turkey. Subjects: A total of 1224 elderly free-living postmenopausal Caucasian women (age>65). This study was conducted in accordance with the Declaration of Helsinki. Ethical approval was obtained from the University of Usak Human Research Ethics Committee (HREC) approval number HREC/2018/11. The study was conducted in outpatient clinic of 15 different physical medicine and rehabilitation clinics from 12 different provinces. Participants were informed that the study aimed to determine the differences in nutritional status and bowel habits between osteoporotic and nonosteoporotic elderly females. Written informed consent was obtained from all participants. Inclusion criteria: elderly women (>65) who were performed DXA scans (lumbar spine and hip scan) within 1 month, volunteers for the study who had not received previous treatment for osteoporosis. Exclusion criteria: Chronic glucocorticoid use, malignancy, metabolic bone disease, neurogenic bladder, neurogenic bowel, other malnutrition diseases, use of drugs causing malabsorption, use of drugs causing constipation, nonambulatory status renal failure, and rheumatologic disease. Evaluated variables; Nutritional status as determined by the Mini-Nutritional Assessment (MNA). Bowel habits as assessed by gastrointestinal symptom rating scale (GSRS) and Bristol Stool Form Scale (BSFS). Measurements of BMD of the lumbar spine and left hip using DXA. BMD: DXA measurements were evaluated with the criteria of WHO. T-score between -1.0 and -2.5 accepted as osteopenia and -2.5 and below T-scores accepted as osteoporosis. The patients were divided into the nonosteoporotic group (NOP), osteopenic (OPN) and osteoporotic (OPR) groups. Statistical analysis: The SPSS for Windows 12.0 software package was used for the statistical evaluation of the data. All data were analyzed separately for women and men. Descriptive statistics were analyzed and reported as mean (with standard deviation), or as percentiles as appropriate. One-way ANOVA (analysis of variance) for comparing for three groups on each variable.

Results:

	NOP 586 (47.9%)	OPN 369 (30.1%)	OPR 269 (21.9%)	p
Age (years)	69.8± 5.5	71.4±6.3	74.4±7.8	< 0.05
BMI (kg/cm²)	28.7±4.7	28.4±4.1	27.6±4.9	> 0.05
Vitamin D	14.47±7.9	15.78±8.8	10.32±8.8	< 0.05
Mid-arm C (cm)	29.1±4.6	28.8±4.1	27.4±4.6	> 0.05
Hemoglobin	12.75±2.36	11.95±2.48	11.24±1.97	> 0.05
Vitamin B12	345.48±87.15	359.51±101.4	284.97±115.78	> 0.05
IoL (glass/day)	10.2±6.8	9.8±7.4	8.7±7.1	< 0.05
MNA	25.4±4.2	24.2±4.1	23.1±5.3	< 0.05
BSFS	2.62±1.54	2.44±1.50	1.75±1.11	< 0.05
GSRS				
Reflux	3.86±1.12	3.80±1.18	3.88±1.23	> 0.05
Abdominal pain	3.0±1.45	3.16±1.53	3.26±1.69	> 0.05
Indigestion	3.34±1.14	3.31±1.26	3.59±1.73	> 0.05
Diarrhoea	1.85±0.45	1.16±0.29	0.98±0.18	> 0.05
Constipation	2.96±0.89	3.05±1.12	3.54±1.48	< 0.05

NOP: non-osteoporotic group, OPN: osteopenic group, OPR: osteoporotic group, MNA, Mini Nutritional Assessment Bristol Stool Form Scale (BSFS), GSRS: Gastrcintestinal-symptom rating scale, Mid-arm C: Mid-arm circumference (cm), IoL: Intake of liquids (glass/day)

Conclusion: In general, the nutritional status was good in our study population. However, we found poorer status in nutrition and bowel habits in osteoporotic patients. While some similar results detected in four symptom clusters of GSRS (reflux, abdominal pain, indigestion, diarrhea), constipation was significantly more often in osteoporotic patients according to both GSRS and BSFS results. Healthcare professional should be careful to add the right amount of fiber to osteoporotic diets.

P141

MYOSTATIN AND INSULIN GROWTH FACTOR-1 ARE BIOMARKERS OF MUSCLE STRENGTH, MUSCLE MASS AND MORTALITY IN HEMODIALYSIS PATIENTS

P. Delanaye[1], S. Bataille[2], K. Quinonez[1], F. Buckinx[3], X. Warling[4], J.-M. Krzesinski[1], H. Pottel[5], S. Burtey[6], O. Bruyère[3], E. Cavalier[7]
[1]Department of Nephrology Dialysis and Transplantation, University of Liège, CHU Sart Tilman, Liège, Belgium, [2]Centre de Néphrologie et Transplantation Rénale, Assistance Publique des Hôpitaux de Marseille, Marseille, France, [3]Department of Public Health, Epidemiology and Health Economics, University of Liège, CHU Sart Tilman, Liège, Belgium, [4]Department of Nephrology-Dialysis, Centre Hospitalier Régional (CHR) " La Citadelle ", Liège, Belgium, [5]Department of Public Health and Primary Care @ Kulak, University of Leuven, Kulak, Kortrijk, Belgium, [6]Aix-Marseille University, INSERM, INRA, C2VN, Marseille, France, [7]Department of Clinical Chemistry, University of Liège, CHU Sart Tilman, Liège, Belgium

Objective: Muscle strength is frequently altered in hemodialysis patients. In the present work, five potential muscle biomarkers have been studied in their ability to assess muscular strength, muscular mass and to predict mortality of hemodialysis patients: activin-A, procollagen III N-terminal peptide, follistatin, myostatin and insulin-like growth factor-1 (IGF-1).
Methods: In the current observational prospective study, three independent cohorts of prevalent hemodialysis patients (2 from Liège, Belgium and 1 from Marseille, France) were considered. The biomarkers were first measured in the Liege1 cohort. Two of them, myostatin and IGF-1, were then assessed in the whole population of patients (Liege1, Liege2 and Marseille). Muscle strength was assessed with handgrip strength (HGS) and muscle mass with bioimpedance analysis. One-year mortality predictive value of biomarkers was also studied in the Liège1 and Marseille cohorts.
Results: In the Liège1 cohort (n=67), HGS was only associated with concentrations of myostatin and IGF-1. These associations were confirmed in the whole population of 204 patients (r=0.37, p<0.001 and r=0.46, p<0.001, respectively) and remained significant (p<0.05) in multivariable models. The association between muscle mass and concentrations of myostatin and IGF-1were also significant. The ability of myostatin, IGF-1 and serum creatinine to detect a low HGS compared by Receiver Operating Characteristic curves analysis were not significantly different. Both myostatin and IGF-1 had a significant and comparable area under the curve to predict one-year mortality: 0.73 (95%CI: 0.64 to 0.83) and 0.72 (95%CI: 0.61 to 0.82), respectively.
Conclusion: Our results suggest that myostatin and IGF-1 are two biomarkers of interest to assess muscle status of dialysis patients. Both biomarkers are associated with HGS, muscular mass, and one-year mortality.

P142

HIGH FORCE SHORT DURATION COMPRESSION FORCES ON BONE RESULTS IN SIGNIFICANT OSTEOBLASTIC ACTIVITY

J. Conviser[1], J. Koehler[2]
[1]Ascend - Consultation in Healthcare, Chicago, Illinois, USA, [2]Performance Health Systems, Northbrook, Illinois, USA

Objective: he relationship between bone geometry and mechanical influences on bone and suggests that when significant forces are applied to bone, the compression will stimulate an adaptive response, commonly known as Wolff's Law. While the American College of Sports Medicine recommends exercise as a treatment for those diagnosed with osteoporosis, traditional exercise has not been able to create the forces needed to stimulate bone growth in a safe and effective manner. A three year study conducted in multiple clinical locations with a novel apparatus allowed for significant compressive force to the level required to have an effect on the osteoblastic function offering high force production within a short duration, i.e. osteogenic loading (OL) was utilized. OL has been suggested as a non-pharmaceutical option to improve bone health. The purpose of this study was to examine if OL was 1) safe when generating forces required for osteoblastic function and 2) effective for individuals dealing with osteoporosis.
Methods: Twenty-six women ranging in age from 41-87 y from three independent clinical locations with a diagnosis of osteoporosis were selected to participate in a one-year study using an exercise device that allows the individual to create significant forces on the bone with four unique exercise movements. Since the study was conducted over a three year period, a subset of the 26 subjects (9 individuals) were followed for one additional year after the conclusion of the 48 sessions to determine if additional benefits could be obtained with additional exposure to higher forces on bone. All three centers had the same equipment, settings and protocol. Subjects completed a minimum of 48 sessions once a week over the year, each session lasting approximately 15 min. DXA scans were conducted at the same testing location for both pre-and post-assessments. Subjects self-reported their body weight, weekly minutes of traditional exercise, diet and prescription medications.
Results: Of the 26 subjects, 16 individuals demonstrated a significant reduction (improvement in bone) in their mean DXA score, 6 had no significant change and 4 individuals