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.

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

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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.

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

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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