the forearm BMD. These findings would be helpful for osteoporosis management in RA patients.

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AB1014

EPIDEMIOLOGICAL FEATURES OF PERIPHERAL FRAGILITY FRACTURES IN WOMEN IN REPUBLIC OF MOLDOVA

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Background: Osteoporosis is a disease which is frequently asymptomatic until fragility fractures occur. The study of risk factors in osteoporosis is continuously developing, considering that there is a tremendous geographic variety in osteoporosis occurrence. We present the results of an epidemiological study of fragility fracture cases in Republic of Moldova, trying to underlie differences in fragility fracture epidemiology, based on residence region, and possibly lifestyle factors, in a female population.

Objectives: The purpose of the study was to determine the incidence and prevalence of fragility fractures in women, with comparison of epidemiological indexes between urban and rural areas in Republic of Moldova.

Methods: Approximately 6% of the state population was included in the study. Data regarding peripheral fragility fracture cases was collected from all specialised and primary medical institutions from the defined area. Fragility fractures of proximal humerus, distal forearm, proximal femur and distal calf, in women aged over 40 years old were collected. Using population statistics provided by the National Bureau of Statistics, epidemiological indexes regarding fracture incidence and prevalence were derived, with further comparison of derived epidemiological indexes for urban and rural areas, as well as separate epidemiological indexes for the four fracture regions.

Results: A general incidence of 1033.4 peripheral fragility fractures per 1 000 000 female population >40 years was determined, with a significantly higher incidence in urban areas (1216.7 vs 980.1, $p<0.05$). The incidence of proximal humerus fracture was 149 per 1 000 000 female population >40 years, with a small, but significantly higher incidence in urban areas (159.5 vs 145.9, $p<0.05$). The incidence of distal forearm fractures was 393.4 per 1 000 000 population >40 years, significantly higher in urban areas (528.5 vs 354.1, $p<0.05$). The incidence of proximal femur fracture was 208.5 per 1 000 000 population >40 years, significantly higher in urban areas (227.9 vs 202.9, $p<0.05$). The incidence of distal calf fractures was 282.5 per 1 000 000 population >40 years, with a small, but significantly higher incidence in urban areas (300.7 vs 277.2, $p<0.05$).

Conclusions: There was an overall higher incidence of fragility fractures in the urban female population compared to the rural one, with a similar relationship in all four fracture groups. The association between urban residence and increased incidence of fragility fractures in women, could be attributed to a less active physical lifestyle (known risk factor in osteoporosis) in urban areas. Distal forearm fractures showed a greater prevalence both in urban and in rural areas, compared to other fracture types. Moreover, the incidence difference between urban and rural areas was most prevalent in the distal forearm fracture group. The latter observation was not determined in a similar study in men, in the same population and period of time.

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AB1015

BONE MINERAL DENSITY IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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Background: Chronic kidney disease (CKD) is commonly associated with disorders of mineral and bone metabolism.¹ However, the relationship between renal function and bone mineral density (BMD) is controversial.²⁻³

Objectives: We aimed the relationship between markers of renal function and BMD in patients with CKD.

Methods: 95 patients both sexes with CKD aged 55.49±10.07 years were studied. Control group included 84 healthy subjects the same age. Standard laboratory analyses were performed in all patients. Renal function was assessed by the estimated glomerular filtration rate (eGFR), which was calculated using an equation based on creatinine (eGFRcr) and cystatin C (eGFRcys_c). Osteoporosis was defined as a femoral neck BMD T-score below -2.5.

Results: The serum cystatin C level was negatively correlated with BMD and T-score right and left femoral neck ($p<0.05$), but not with BMD T-score lumbar spine. The level of creatinine was negatively correlated only with BMD and T-score right femoral neck ($r=-0.653$, $p<0.05$). Higher cystatin C levels were associated with a higher prevalence of osteoporosis in CKD patients (OR 3.54; 95% CI 1.63–7.85; $p=0.002$). In logistic regression analysis, after adjusting for age, body mass index, calcium, only cystatin C showed a negative correlation with femoral BMD. In addition, the eGFRcys_c showed a stronger positive correlation with femoral BMD than the eGFRcr.

Conclusions: Our findings suggest that serum cystatin C level could be a marker for femoral BMD and might help identify patients with osteoporosis who are susceptible to fractures.

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AB1016

OSSEOINTEGRATED IMPLANTS FOR LOWER LIMB AMPUTEES: EVALUATION OF BONE MINERAL DENSITY

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Background: The use of dual-energy X-ray absorptiometry (DXA) is a standard clinical procedure for the evaluation of bone mineral density (BMD). Amputee patients are known to have decreased BMD and an increased risk of osteoporosis in the affected proximal femur and hip region. The major cause of these issues in these patients is the absence adequate loading leading to bone resorption in accordance to Wolff's law.

Objectives: In this paper, we present a prospective study reporting changes in BMD among amputees who received osseointegrated implants to determine if the loading through the Osseointegrated implant can overcome the bone resorption issues.

Methods: This is a prospective study of 33 patients, consisting of 24 males and 9 females, aged 22–77 (mean=51.0±2.0) years with one and two-year follow-up. Selection criteria included age over 18 years, unilateral amputees with socket-related problems. All patients received osseointegrated implants press-fitted into the amputated limb. BMD was assessed using DXA in the femoral neck (operative and contralateral) and lumbar spine (L2-L4) regions, and corresponding Z-scores were generated. DXA scans were taken preoperatively as well as one-year and two-years following osseointegration surgery.

Results: Mean BMD and Z-scores of spine, and operative and contralateral sides were generated for all patients. Dependent t-tests were used to test for significant differences ($p<0.05$) preoperative, one-year, and two-years for mean changes in BMD and Z-Scores following surgery. Analysis of the BMD and Z-scores indicated that patients showed improvements at one-year post-surgery.

Conclusions: These results suggest that osseointegrated implants are effective at encouraging bone growth and restoring BMD levels for amputees within a short period of time post-surgery. Osseointegrated implants therefore have the potential to address stress distribution issues associated with socket prostheses and restore the normal bone loading regime in lower limb amputees.

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