

long bones (femur, tibia, humerus and radius) showed osteosclerosis. They have asymmetric bilateral diaphyseal involvement with cortical thickening due to endocortical and subperiosteal bone accretion. Periostitis was observed as a wavy contour. Metaphysis were spared. Soon after diagnosis she was treated with IFN- $\alpha$  for 18 months and later with zoledronic (for 9 months, 4 mg monthly), with relief of skeletal symptoms. Follow-up was carried out with plain radiographs, bone scintigraphy and  $^{18}\text{F}$ -FDG PET/CT, showing no skeletal progression or extraosseous involvement. Conclusion: Presence of bilateral sclerosis exclusively in long bones should raise suspicion of ECD. The patient reported has some special features a) Exclusively bone involvement at 10 years of follow up b) Bilateral and non-symmetric involvement c) Endosteal and periosteal cortical sclerosis. d) Radiological signs that suggest periostitis d) Absence of metaphyseal involvement, which has been rarely described.

### **Vascular response to stress: protective action of the bisphosphonate alendronate**

Cutini PH, Campelo AE, Massheimer ML

*Instituto de Ciencias Biológicas y Biomédicas del Sur (Inbiosur), Universidad Nacional del Sur (UNS), CONICET, Departamento de Biología, Bioquímica y Farmacia, Bahía Blanca, Argentina.*

Bisphosphonates are first-line drugs in the treatment of postmenopausal osteoporosis, a period in which the prevalence of cardiovascular diseases in women increases significantly. The aim was to study the effect of alendronate (ALN) on the vascular response to extracellular environmental stress. We focused on alterations in cell growth and migration patterns and the capacity for vascular repair by angiogenesis. Primary cultures of endothelial cells (EC) and vascular smooth muscle cells (VSMC) isolated from murine aorta were used. In order to induce stress conditions, cells were exposed to the

pro-inflammatory agent LPS or incubated in a pro-osteogenic medium (OM). Using the MTT assay, we observed that 5  $\mu\text{M}$  ALN totally or partially prevented VSMC proliferation induced by LPS (31% vs control,  $p < 0.02$ ) or OM (108% vs control,  $p < 0.001$ ), respectively. The mechanism of action of this effect involves MAPK, PKC or NOS participation. We also demonstrated that ALN did not modify the basal pattern of VSMC migration (wound healing technique). However, the simultaneous treatment with ALN, reversed the stimulation of cell migration induced by LPS or OM. In addition, ALN increases VEGF synthesis by EC (35.7% vs control,  $p < 0.05$ ) and enhances tube formation ( $5.34 \pm 0.48$  vs  $7.52 \pm 0.5$  mm, control vs ALN,  $p < 0.05$ ) in a VEGF dependent manner, since the presence of the VEGF receptor antagonist SU5416 (1  $\mu\text{M}$ ), completely suppressed the angiogenic stimulus of ALN. Vascular stress conditions did not affect the proangiogenic action elicited by ALN. In summary, the results presented suggest that, under stress conditions, ALN exhibits a protective action on vascular homeostasis, preserving cell growth and mobility patterns and promoting angiogenesis.

### **Calcium absorption and bone retention in a model of growing rats: effect of feeding an experimental yogurt-reduced in lactose-containing galactooligosaccharides (GOS).**

Seijo M,<sup>1</sup> Bonanno MS,<sup>1</sup> Vénica C,<sup>2</sup> Pita Martin de Portela ML,<sup>3</sup> Bozzini C,<sup>4</sup> Bergamini C,<sup>2</sup> Wolf I,<sup>2</sup> Perotti MC,<sup>2</sup> Zeni SN.<sup>1</sup>

1. CONICET INIGEM. 2. UNL/CONICET Inst. Lactología Industrial UNL/CONICET. 3. Catedra de Nutrición. Facultad de Farmacia y Bioquímica UBA. 4. Cátedra de Fisiología Facultad de Odontología UBA. Argentina

GOS are natural prebiotic of maternal milk. They can be enzymatically synthesized in yogurt manufacture from milk lactose obtaining a dairy product reduced

in lactose containing prebiotics and potentially probiotics. It was evaluated if this yogurt containing GOS and reduced in lactose (EY) offered some extra advantages as compared to a regular yogurt (RY) in calcium (Ca) and phosphate (Pi) absorption (Abs) and bone retention during normal growth. Male weaning rats received control diet (C), EY or regular yogurt (RY) during 28 days. Results showed no differences in food consumption and body weight between C and yogurts groups. EY showed the highest increase in fecal lactobacillus colonies, in short chain fatty acids production especially propionate and butyrate, in large intestinal crypt deep, and the lowest caecum pH, CaAbs% increased significantly as follows: EY>RY>C ( $p<0.05$ ); PiAbs% was higher in EY vs. RY. Femur Ca and Pi content, bone mineral content, density and biomechanical parameters were similar in EY and C but lower in RY ( $p<0.05$ ). The epiphyseal and hypertrophic cartilage widths were lower in EY and RY than in C ( $p<0.05$ ) while total cartilage width was similar in EY and C. Conclusion: EY reduced in lactose increased mineral Abs attaining C group bone retention and quality while RY diet consumption did not achieve bone growth and quality of C group. Then EY would be a good strategy to attain an adequate peak bone mass during growth, especially in lactose intolerant subjects. Grant of UBACyT and CONICET.

### **Osteoporosis in men: DXA scans in Mendoza, 2004-2019**

Saraví FD, Henríquez M

*DXA Service, FUESMEN, and Facultad de Ciencias Médicas, UNCuyo, Mendoza, Argentina.*

DXA scans should be performed in all men aged 70 or older and those aged 50 to 69 with fracture risk factors. In Argentina, men account for 28% of hip fractures. We analyzed requests for DXA scans from Greater Mendoza between 2004 and 2019, to find out whether there is a growing awareness of the

impact of male osteoporosis. The database of our densitometry service was reviewed. Total number of studies per year was determined and the proportion of female and male patients at or above 50-year-old. Male patients were classified according to the T-score of the lumbar spine and proximal femur as normal, low bone mass or osteoporosis. The evolution of the total DXA studies and those carried out in men was statistically analyzed. A total of 93,659 studies were carried out, of which 4.4% (4166) were men. Of these, 1,333 subjects (32%) were normal, 1,625 (39%) had low bone mass, and 1208 (29%) had osteoporosis. In 71% of the men (2958), at least one risk factor was identified, among them smoking (32%), low-impact fractures (25%), and glucocorticoids (18%). Other factors were present in 9%. About 14% had two or more risk factors. The trend in the total number of studies grew linearly until 2010, and then flattened out as the operational capacity was approached. Studies requested in men increased ( $p=0.0003$  in linear regression). However, the fraction carried out in men did not change significantly, with a range from 2.9% in 2012 to 6.8% in 2014 and an average of 4.4% for 2004-2019. In Greater Mendoza there are about 200,000 people over 50 years of age, of which 43% are men. However, only 4.4% of DXA scans are performed in males. The results suggest that physicians' attitude regarding osteoporosis in men has not changed in the last 16 years. Further teaching and clarification are clearly required on this issue.

### **Spurious hypocalcemia due to interference with leflunomide**

Komornicki M, Buttazzoni M, Diehl M, Denaday LR, Kitaigrodsky AV.

*Hospital Italiano de Buenos Aires. Argentina*

Calcemia has to be in a narrow range to allow optimal activity of metabolic functions. 50% of calcium circulate as ionized calcium (Ca-i).