P352

## The relationship between leptin and obesity in postmenopausal osteoporosis

A. Doventas, I.M. Bolayirli, S. Incir, H. Yavuzer, D.S. Erdincler, D. Konukoglu, T. Beger, A. Seven
*University of Istanbul, Cerrahpasa Medical School, Department of Internal Medicine, Division of Geriatrics, Istanbul, Turkey/University of Istanbul, Cerrahpasa Medical School, Department of Biochemistry, Istanbul, Turkey*

*Background.*– Obesity and bone metabolism are interrelated. The excessive secretion of leptin in obesity may either affect bone formation directly or indirectly affect bone resorption through up-regulated proinflammatory cytokine production. The overall effects of leptin on bone metabolism results from a balance between negative control, brain mediated effects and positive peripheral effects. The aim of this study is to investigate the relationship between obesity leptin/insulin resistance in postmenopausal osteoporosis.
*Material and methods.*– Four study groups were included in the study. Group 1 ($n=19$): Osteoporosis (T Score < - 2.5 at the lumbar spine and/or femoral neck) + obese, group 2 ($n=29$): Non-osteoporosis + obese, group 3 ($n=25$): Osteoporosis + non-obese, group 4 ($n=14$): Non-osteoporosis + non-obese as control. The serum levels of leptin wwere measured by ELISA. Glucose and insulin levels were analyzed by colorimetric and electrochemiluminescence methods respectively.
*Results.*– Comparison of group 1 with group 3 revealed significantly higher ($P<0.001$) leptin levels in the former. Leptin levels were significantly higher in group 1 compared to control group ($P<0.05$). Leptin levels were significantly higher in group 2 vs. control group ($P<0.05$).
*Conclusion.*– Leptin levels are significant predictors in the development of osteoporosis and/or obesity in postmenopausal women.

http://dx.doi.org/10.1016/j.eurger.2013.07.416

P353

## Influence of the Source of Protein Intake on Muscle Function of Elderly Women: The EPIDOS Study

F.C. Lemieux, G. Gouspillou, S. Barbat-Artigas, Y. Rolland, B. Vellas, M. Aubertin-Leheudre
*Faculty of Science, Department of Kinanthropology, Université du Québec à Montréal & Gérontopôle, Department of Geriatric Medicine, Toulouse University Hospital, France*

*Introduction.*– Protein intake contributes to the preservation of muscle mass and strength in older individuals, which are both related to functional capacities. Furthermore, the source of protein intake also seems to influence muscle mass preservation. Objective: To examine the role of milk protein (MP) intake compared to animal protein (AP) intake on muscle function in the elderly women.
*Methods.*– 1462 women aged 75 years and older were recruited. Body composition (fat & fat-free mass; DXA), handgrip and knee extensors strength (dynamometer), physical function (SPPB) and protein intake (questionnaires) were evaluated. Participants were divided into tertiles based on their MP intake and into tertiles based on their AP intakes. Participants were then divided into 4 groups (Low-MP/Low-AP, High-MP/Low-AP, Low-MP/High-AP and High-MP/High-AP) based on previous tertiles.
*Results.*– We observed no significant difference in age, BMI, waist circumference and total lean or fat mass between groups. High-MP/Low-AP group showed significantly higher physical functions (going downstairs, lifting an object and global mobility score) than the Low-MP/Low-AP group. In addition, physical functions (climbing stairs, lifting an object and rising from a chair) were significantly better in the High-MP/High-AP group compared to the Low-MP/Low-AP group. However, no other difference was observed between other groups for functional tests. Handgrip strength was significantly higher in the High-MP/Low-AP group compared to all others.
*Conclusion.*– Our results indicate that milk protein intake could contribute to the preservation of muscle function in elderly women. Further investigations are needed to support our results.

http://dx.doi.org/10.1016/j.eurger.2013.07.417

P354

## Survey of dietary calcium intake in calcium supplement users

B. Ibrahim, D. Digby, F. Dockery
*Department of Ageing & Health, St. Thomas' Hospital, London, United Kingdom*

*Background.*– Calcium supplements are widely-prescribed in older people at doses of 1000–1200 mg because combined with vitamin D, they may reduce fracture and falls risk. Recommended daily calcium intake (RDA) is quoted as from 700–1200 mg daily. Diet is a good source of calcium however when prescribing supplements, this is not generally taken into account. Moreover, recent reports have linked high calcium intake (both dietary and supplemented) with higher risk of cardiovascular events and mortality.
*Methods.*– Dietary calcium intake was assessed using a simple online calcium calculator (Centre For Molecular Medicine Rheumatic Diseases Unit, Edinburgh, UK), on a convenience sample of 51 patients aged $\geq$65years from inpatient medical and orthopaedic wards and a medical outpatient clinic who were already taking prescribed calcium supplements.
*Results.*– Twenty were male, 31 female; age 6–93 years; 31 (60%) had a fracture history; 19 (37%) had known coronary artery disease. All took supplements containing 1200 mg of elemental calcium daily. Mean daily dietary calcium intake was $1220 \pm 699$ mg; median: 1050 mg, range: 450–3700 mg. $n=23$ (45%) already had the RDA of dietary calcium ($\geq$ 1200 mg). Of these, 12 had a daily intake > 1400 mg (a dietary level associated with higher cardiac risk from a recent longitudinal study). With supplementation, this gave them a daily calcium intake of 2400–2600 mg/d. There were no significant differences in dietary intake according to age category, cardiac or fracture history.
*Conclusion.*– A dietary calcium screen should be considered before prescribing calcium supplements in older people as they may be unnecessary and, according to recent reports, possibly harmful.

http://dx.doi.org/10.1016/j.eurger.2013.07.418

P355

## BMI might be overestimated in elderly and old osteoporosis patients suffering vertebral fracture(s)

A.G. Frederiksen, A.L. Lysgaard, E. Iversen, N.R. Jørgensen, P. Schwarz
*Research Center for Ageing and Osteoporosis, Depart. of Diagnostics and Medicine (Geriatrics), Copenhagen University Hospital Glostrup, Denmark*

*Text.*– BMI measurement in elderly and old geriatric patients might be significantly affected by vertebral fractures leading to misleading BMI. In this study we evaluated the BMI in 207 consecutive enrolled osteoporosis patients of February 1, 2013. One hundred and sixty-nine postmenopausal women (82%) and 28 men (18%) suffering osteoporosis where zoledronic acid (ZA) treatment was planned. The ages were $71.8 \pm 12.3$ years and $73.6 \pm 9.6$ years for women and men, respectively (mean $\pm$ SD). BMI was very similar between women and men $24.2 \pm 4.2$ vs. $24.4 \pm 4.2$, respectively (ns). Forty-six women (28%) suffered at least one vertebral fracture ($2.2 \pm 1.4$) whereas 14 (50%) of the men suffered at least one