

Results: Of the 1870 patients who were identified, 230 (12.30%) were already followed for osteoporosis. 227 patients (12.14%) died, between the diagnosis and hip fracture invitation to participate in our program. Our target population was 1413 patients. Out of them, 381 (26.97%) visited our FLS clinic. The main reasons given by the nonparticipating individuals were lack of interest or not reachable ($n=766$; 54.21%), primary care doctor refusal ($n=57$; 4.04%), physically unable to attend the clinic ($n=208$; 14.72%). Among the 381 patients (273 women, 71.65% - mean (SD) age: 79.25 (11.01) y), the following risk factors were highlighted: low BMI ($n=41$; 10.76%), early menopause (53 women, 19.41% of women), prior fragility fracture ($n=136$; 35.70%), prior family fragility fracture ($n=52$; 13.64%), taking corticosteroids ($n=24$; 6.30%), alcohol consumption ($n=22$; 5.77%), active smoking ($n=72$; 18.89%). Within the population who attended the clinic, 246 patients (64.57%) were receiving calcium and/or vitamin D supplementation. 8.92% ($n=24$) were treated at the time of consultation by an inhibitor of bone resorption and 7.61% ($n=29$) had been previously treated.

After DXA, and according to the WHO criteria, 18.52% of patients ($n=70/378$) had trabecular osteoporosis and 46.80% ($n=154/329$) had cortical osteoporosis. Using the FRAX algorithm, 44.88% ($n=171$) and 39.90% ($n=152$) of patients, respectively, were considered at increased 10-year probability of hip fracture or major osteoporotic fracture based on the normative data for Belgium.

Conclusion: In a population with a non-traumatic hip fracture, only 8.92% of patients having sustained a hip fracture were receiving an anti-osteoporosis medication. With the implementation of a FLS, in close collaboration with the Department of Orthopedic Surgery, 359 additional patients (25.41% of our sample) were screened for osteoporosis and were offered an appropriate treatment to prevent subsequent fracture.

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IDENTIFICATION, THROUGH A FRACTURE LIAISON SERVICE, OF UNDIAGNOSED VERTEBRAL FRACTURES IN PATIENTS HOSPITALIZED FOR A PREVALENT HIP FRAGILITY FRACTURE

R. Deroisy¹, A. Neuprez¹, Y. Léonard¹, M.-P. Lecart¹, V. Massenet¹, P. Gillet², J.-Y. Reginster³, J.-F. Kaux¹

¹Rehabilitation and Sports Traumatology Department, CHU Liège, ²Orthopedic Surgery Department, CHU Liège, ³Department of Public Health, Epidemiology and Health Economics, WHO Collaborating Center for Public Health Aspects of Musculo-Skeletal Health and Aging, University of Liège, Liège, Belgium

Objective: The prevalence of undiagnosed vertebral fragility fracture (VFF) is high in elderly people. This study aims to identify through a Fracture Liaison Service (FLS), the prevalence of undiagnosed VFF in patients presenting with a hip fragility fracture.

Methods: Patients with hip fragility fracture were identified by the FLS of a large Belgian university hospital from 2012-2018. A subset visited our FLS and benefited from a DXA measurement and of a spinal x-ray.

Results: A total of 381 patients were assessed (273 women, 71.65% - mean (SD) age: 79.25 (11.01) y). During the anamnesis, 143 patients (37.53%) reported a history of other fragility fracture including only 17 patients (4.46%) reporting spinal fracture. After spinal X-ray, 171 patients (44.88%) were identified as presenting a VFF, 97 (56.73%) of them having multiple fractures. Within those, DXA identified 25.15% of patients with trabecular osteoporosis and 47.95% of patients with cortical osteoporosis following the WHO diagnostic criteria. Mean (SD) age was nonsignificantly higher in those with vertebral fractures compared to those without: 75.64 (10.54) y vs. 74.66 (10.92) y (p -value=0.38). The

age category (based on the median age of 77) did not increase the risk of having multiple fractures ($p=0.51$).

Conclusion: The implementation of a FLS allowed us to identify 154 patients, out of a sample of 381 patients with hip fragility fracture, presenting with undiagnosed vertebral fracture. They were offered a management strategy to prevent subsequent fractures. Age was not related to an increase in the presence of multiple fractures.

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INTERLIMB MUSCULOSKELETAL ABNORMALITIES IN PATIENTS IN RECOVERY FROM A UNILATERAL RUPTURE-REPAIRED ACHILLES TENDON

Y. Gu¹, D. Sun¹

¹Faculty of Sports Science, Ningbo University, Ningbo, China

Objective: Our previous study has found kinematic and kinetic gait asymmetries after an Achilles tendon rupture (ATR). The purpose of this study was to compare the interlimb joint kinematics, joint moments, muscle forces and joint reaction forces in patients after an ATR during walking, jogging and running via subject-specific musculoskeletal modeling.

Methods: Six patients recovering from a surgically repaired unilateral ATR were included in this study. The bilaterally Achilles tendon (AT) lengths were evaluated using ultrasound imaging. The three-dimensional marker trajectories, ground reaction forces and surface electromyography (sEMG) were collected on both sides during self-selected speed walking, jogging and running. Subject-specific musculoskeletal models were developed to compute joint kinematics, joint moments, muscle forces and joint reaction forces. One-dimensional statistical parametric mapping (SPM1d) with a two-sample t-test was conducted to assess differences over a stance phase on the variables of interest between the involved and uninvolved sides.

Results: AT lengths were significantly longer in the involved side. The side-to-side triceps surae muscle strength deficits were combined with decreased plantarflexion angles and moments in the injured leg during walking, jogging and running. However, the increased knee extensor femur muscle forces were associated with greater knee extension degrees and moments in the involved limb. Greater knee joint moments and joint reaction forces vs. decreased ankle joint moments and joint reaction forces in the involved side indicate elevated knee joint loads compared with reduced ankle joint loads that are present during normal activities after an ATR. In the frontal plane, increased subtalar eversion angles and eversion moments in the involved side were demonstrated only during jogging and running.

Conclusion: After an ATR, the elongated AT accompanied by decreased plantarflexion degrees and calf muscle strength deficits indicates ankle joint function impairment in the injured leg. In addition, increased knee extensor muscle strength and knee joint loads may be a possible compensation mechanism for decreased ankle function. These data suggest patients after an ATR may suffer from increased knee overuse injury risk.

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VITAMIN D RECEPTOR ATTENUATES MUSCLE ATROPHY BY SUPPRESSING THE RENIN-ANGIOTENSIN SYSTEM

W.-X. Li¹, J.-L. Zhang¹, Y.-J. Wang², Q. Shi¹, Y. Zhang¹

¹Longhua Hospital, Shanghai University of Traditional Chinese Medicine, ²Spine Disease Research Institute, Shanghai University of Traditional Chinese Medicine, Shanghai, China

Objective: Vitamin D deficiency is associated with a range of muscle disorders, including muscle atrophy, but its functional role and the