

only 28% (48% women and 17% men) had a BMD investigation and 31% (24% women and 14% men) received anti-osteoporosis medication post-fracture. A higher CCI was associated with a lower probability of both BMD investigation [CCI 2–3 vs 0–1, RR 0.73 (0.65–0.82) for women, and 0.50 (0.40–0.64) for men and CCI \geq 4 vs 0–1, RR 0.50 (0.41–0.62) for women and 0.36 (0.25–0.52) for men] and treatment initiation [CCI 2–3 vs 0–1, RR 0.88 (0.77–0.98) for women and 0.75 (0.60–0.95) for men and CCI \geq 4 vs 0–1, RR 0.75 (0.59–0.95) for women and 0.35 (0.23–0.53) for men]. **Conclusion:** Multimorbidity, despite being associated with the highest fracture risk, significantly lowers the likelihood of osteoporosis investigation and treatment. These findings suggest that fracture risk is either under-estimated or under-prioritized in the context of multimorbidity. Our findings highlight the need for improved delivery of fracture preventive care in this setting. More generally, they also point out the need for a better understanding of how problems are prioritized in complex clinical situations.

Bone and Mineral Metabolism

FRACTURE PREVENTION AND TREATMENT

Osteoporosis Care After Hip Fracture: A Regional Healthcare System Experience

Ethan Thonn, BA¹, Darin Ruanpeng, MD².

¹University of Minnesota Duluth, Duluth, MN, USA, ²St. Luke's Endocrinology Associates, Duluth, MN, USA.

Background: Pharmacologic treatment is recommended to reduce risk of future fractures and possibly reduce mortality in patients with hip fracture. We investigated osteoporosis care after hip fracture at a regional comprehensive healthcare system to identify rates of pharmacologic treatment after hip fracture and barriers to treatment. **Methods:** We identified all patients admitted with a low impact hip fracture between 1/2017–12/2018. Follow-up clinical data was collected for a minimum of 16 months after hip fracture. **Results:** 208 patients were admitted with low impact hip fractures: 130 (62%) were female, mean age was 79.6 (SD 12.6), 24 (12%) were nursing home resident, and 117 (56%) had BMI $<$ 25 kg/m². At the time of the fracture, 80% had polypharmacy, 42% used mobility aide, 24% had known osteoporosis, 22% had dementia/cognitive impairment, 20% has history of cancer, 20% had history of stroke, 19% had diabetes and 2% were on dialysis. Two hundred (96%) underwent surgery. Forty-three (20%) had vitamin D level checked, of this, 20 (46%) had level $<$ 30 ng/mL. Prior to admission prescription of vitamin D was 53% and calcium was 36%. Discharge prescription of vitamin D was 64% and calcium was 50%. Prior to fracture, 18/208 (9%) were prescribed osteoporosis medication and at 1 year following fracture, 26/192 (14%) were prescribed osteoporosis medication (11 new, 15 continuation of medication). For follow up, 114/192 (59%) were seen in orthopedics clinic, 61 (32%) in primary care clinic, 2 (1%) in endocrinology clinic and 99 (52%) in other clinics. Sixteen (8%) patients died during the hospitalization for hip fracture and 47 (22%) died within 1 year. **Conclusions:** Osteoporosis treatment after hip fracture is suboptimal and a model of care is needed to close this care gap.

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FRACTURE PREVENTION AND TREATMENT

Radiofrequency Multi Echographic Spectrometry (REMS) Technology in Patients With Bone Artifacts

Maria Dea Tomai Pitinca, MD, Carla Caffarelli, MD, Stefano Gonnelli, MD.

University of Siena, Siena, Italy.

Introduction: Dual-energy X-ray Absorptiometry (DXA) is considered the gold standard examination for the evaluation of bone mineral density (BMD). However, it is known that some conditions, such as arthrosis, vertebral collapse, or vertebroplasty, result in an overestimation of the BMD measured by DXA. Conversely, Radiofrequency Echographic Multi-Spectrometry (REMS) technology is able to automatically discard signals related to bone artifacts, such as calcifications or osteophytes, thanks to the identification of unexpected spectral features (Diez-Perez et al. 2019). The aim of this work is to assess the performance of REMS technology in patients with bone alterations that could alter the densitometric examination. **Materials:** The bone densitometry exams, both REMS and DXA, of patients with evidences of bone alterations at lumbar vertebrae or femoral neck were analysed. Written patient informed consent was obtained before the scans. **Results:** Eighty-seven patients with spinal artifacts, including 22 patients with vertebroplasty, 26 patients with bone fracture and 38 patients with osteo-arthritis were considered. At lumbar spine, the mean BMD and T-score values assessed by REMS was lower than the ones measured by DXA. Moreover, the results obtained by the two technologies were not correlated. On the contrary, the BMD and T-score values measured by REMS and DXA at the femoral site were highly correlated ($p < 0.01$), as well as BMD and the T-score values measured by DXA at the femoral neck and by REMS at the lumbar spine ($p < 0.01$). As concerning artifacts involving femoral site, a patient with an intramedullary gamma nail positioned following a displaced pertrochanteric fracture of the left femur underwent a DXA scan of the right femur and a REMS scan of both femurs. A diagnosis of osteoporosis at the right femur was posed by both technologies. At the left femur with intramedullary gamma nail, REMS only made a diagnosis of osteoporosis highly corresponding with the one performed at right femur. **Conclusions:** The results from the patient series with spinal artifacts and the clinical case with femoral intramedullary gamma nail show the ability of REMS to evaluate anatomical sites that would not be assessable by DXA, such as in case of implanted nails, or that would give unreliable higher BMD values, such as in case of vertebroplasty, osteo-arthritis and bone fracture. **References:** Diez-Perez et al. Aging Clin Exp Res 2019;31(10):1375–89

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FRACTURE PREVENTION AND TREATMENT

Targeting the Fragility Fracture Prevention Message

Robert Daniel Blank, MD, PhD¹, Yoonah Choi, PhD²,

Hae-Jin Song, PhD², Ding-Cheng (Derrick) Chan, MD, PhD, FACP³, Joon Kiong Lee, MBBS, FRCS, MS Ortho, AM, CCD⁴.