

women with unsuccessful recovery and 94 of the 185 women with successful rehabilitation (sensitivity=82%, specificity=51%, positive predictive value=40%, negative predictive value=88%). The odds ratio to gain successful rehabilitation was 2.68 (95%CI from 1.19 to 6.04) for the women with a grip strength ≥ 16 kg, after adjustment for age, Barthel index scores before rehabilitation, hip-fracture type, cognitive impairment and circulating levels of 25-hydroxyvitamin D.

Conclusion: We supply an external validation of the 16 kg cut-off point for grip strength released by the EWGSOP in 2019: dichotomization according to the 16 kg threshold significantly predicted the short-term recovery in ability to function after hip fracture in older women.

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COST-EFFECTIVENESS OF FRAX® BASED INTERVENTION THRESHOLDS FOR MANAGEMENT OF OSTEOPOROSIS IN SINGAPOREAN WOMEN

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Objective: FRAX-based intervention thresholds (ITs) have recently been identified for osteoporosis management in Singapore⁽¹⁾. The aim of this study was to estimate the cost-effectiveness (CE) of major osteoporotic fracture (MOF) age-dependent ITs in women >50 y.

Methods: A previously validated Markov-microsimulation model was adapted to the Singaporean healthcare context to estimate the lifetime costs (expressed in SGD2019) per quality-adjusted life-years (QALY) of generic alendronate (assuming full as well as real world adherence), and of denosumab. Age-dependent FRAX MOF ITs were derived from Chandran et al⁽¹⁾ and were 2.87% (50y), 4.84% (55y), 8.09% (60y), 13.01% (65y), 18.37% (70y), 23.98% (75y), 26.07% (80y), 28.39% (85y) and 28.21% (90 y). Fracture incidence and costs data were obtained from the Ministry of Health and from Chandran et al⁽²⁾. We used CE threshold of SGD65,000 per QALY gained, based conservatively on 0.7 times the Singapore GDP per capita.

Results: Generic alendronate was shown to be cost-effective at age-dependent FRAX MOF ITs from the age of 60 y. Cost-saving was shown in women aged 80 years and older. Denosumab was shown to be cost-effective from the age of 70 y. Treatment with the above osteoporosis medications was not shown to be cost-effective at age-dependent FRAX ITs below 60 y.

Conclusion: This study suggests that treatment of Singaporean women with alendronate and denosumab is cost-effective at age-dependent FRAX intervention thresholds at ages more than 60 and 70 years respectively. Cost-effective access to therapy for elderly patients at high fracture probability based on FRAX could contribute to reduce the growing burden of osteoporotic fractures in Singapore. However, further work is needed to investigate ITs that would lead to cost-effective use of osteoporosis medications in younger postmenopausal Singaporean women.

References:

— Chandran M et al. Arch Osteoporos 2018;13:130

— Chandran M et al. Arch Osteoporos 2019;14:114

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EFFECTS OF ANDROGEN DEPRIVATION THERAPY ON BONE QUALITY (TBS) IN PATIENTS WITH PROSTATE CANCER

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Objective: Androgen deprivation therapy (ADT), by inducing severe hypogonadism, leads to a loss of BMD and an increased risk of fragility fractures after 6 months of treatment in men with prostate cancer¹. However, its effect on bone quality has not been described. We aimed to evaluate the changes on bone microarchitecture (bone quality) assessed by TBS (trabecular bone score) in male patients with prostate cancer after one year of treatment with ADT.

Methods: All patients diagnosed with prostate cancer candidates for long-term ADT admitted to Urology Department of Hospital Universitari Parc Taulí (reference population of 450,000 inhabitants) between April 2017 and December 2019 were included. Patients who received chemotherapy, previous hormonal therapy or specific treatment for osteoporosis in the last year or those who had a very impaired functional capacity (Barthel index <30) were excluded.

Demographic, clinical and analytical data (testosterone, calcium, phosphorus, alkaline phosphatase, 25-hydroxyvitamin D, PTH) were collected in all patients. A bone densitometry (GE-Lunar Prodigy) including the measurement of lumbar spine TBS (L1-L4) using Medimaps Software was performed at baseline and at 12 months of treatment with ADT.

Results: 78 patients were included. Mean age 77.9±8.3 y. The median Gleason score was 7.88±1.05. Three patients had previous fragility fracture (one sacral fracture, one fibula and one multiple vertebral fracture). Baseline analytical values in patients were the following: testosterone 11.6±74.9 nmol/L.; 25-hydroxyvitamin D 20.8±10.4 ng/ml; PTH 51.8±23.0 pg/ml; CTX 0.58±0.66. The daily calcium intake was 573±207 mg/d. According to BMD, 17 patients (21.8%) had osteoporosis before starting ADT, with the following average T-score values: lumbar spine +0.15±1.85, femoral neck -1.75±1.00, and total hip -1.19±1.16. Mean baseline TBS value of the entire cohort was 1.279±0.122. 30.5% of the patients showed very degraded microarchitecture (TBS<1.230), 28.8% had partially degraded microarchitecture (TBS 1.230-1.310) and in 40.7% showed normal microarchitecture (TBS >1.310). After one year of ADT treatment, TBS mildly worsened in this cohort, with a median value of 1.256±0.131 (p=NS). However up to 43% of patients reached highly degraded microarchitecture, 27% partially degraded and only 29.5% had a normal TBS (p=NS).

Conclusion: Most patients with prostate cancer have an altered bone quality before starting ADT. After 12 months of treatment, the percentage of patients with highly degraded bone microarchitecture increases, although not significantly. More studies are needed to confirm this trend and to evaluate if these patients present more long-term fractures.

Reference: 1. Loe R et al. Bone 2011;48:88.