underwent to percutaneous vertebroplasty while 84.6%±17.1% had spinal orthoses. Pharmacological treatment for pain was prescribed to 98.2±7.1% of subjects: acetaminophen (42%), tapentadol (24%), opioids (24%), NSAID (6%) and codeine with acetaminophen (4%). In 95% of patients with spinal orthoses drugs for pain were assumed. In about 40% of cases NSAID was switched to acetaminophen, in 18% opioid and tapentadol switched to NSAID or acetaminophen. Only a few titration of opioids/tapentadol were reported. Not adequate pain relief (NRS scale 6.2±3.1; QUALEFFO-41 pain score 70±14.2) and impairment quality of life (mean total QUALEFFO-41 score 65.1±20.1) were reported.

Conclusions: With the limits of the study design and low number of cases, preliminary data seem to confirm an inadequate pain relief in PVF. The emerging critical issues crossing all categories of physicians are the lag of diagnosis, the inappropriate use of acetaminophen, the missing titration of opioids or tapentadol. A definition of optimal management of acute vertebral fracture is missing due to conflicting and scarce evidences in this field predisposing to chronic pain and disability.

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AB0994 **IMPACT ON THE ADHERENCE AND PERSISTENCE OF DENOSUMAB VS WEEKLY BISPHOSPHONATE IN HEALTH-RELATED QUALITY OF LIFE IN POSTMENOPAUSAL OSTEOPOROSIS**

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Background: Long term adherence and persistence in patients undergoing treatment for postmenopausal osteoporosis remains poor despite the proven efficacy of the therapy.

Objectives: In this study, we evaluated whether greater adherence and persistence in treatment can lead to an improvement in the quality of life.

Methods: A cohort of 268 patients, all women, in postmenopausal osteoporosis divided into two groups was evaluated: "DEN Group" (DEN) in treatment with denosumab (n=131) and "BIS Group" (BIS) in treatment with bisphosphonates (n=137). Table 1 shows demographic and clinical data. Patients were followed for 3 years with baseline, 6 month, 18 month, and 36 month evaluation. The evaluation criteria were the persistence in therapy and the self-related treatment compliance, as well as the quality of life assessed with the 41-item Quality of Life questionnaire for osteoporosis (QUALEFFO-41) performed at baseline, at 18 and at 36 months.

Results: Table 2 shows the percentage of patients who abandoned treatment at different times with a statistical significance towards both 18 and 36 months. In the BIS the main reason for abandonment were the adverse events (gastrointestinal, dental interventions, etc.), in the DEN the abandonment was due to drop-out. [In BIS, the most frequent reason for non-compliance with therapy was oversight, and most patients who continued treatment always used the drugs regularly on the recommended days and dosages.] In the period of time considered the majority of patients both BIS and DEN said they were satisfied with the treatment and wanted to continue it. The QUALEFFO scores (Fig 1) of patients from the baseline visit were significantly improved in the 36 month visit (BIS 79.6±25.4 vs 65.4±14.6; DEN 80.2±18.5 vs 55.6±16.4 (*p<0.001); the difference was not significant between BIS and DEN groups at both baseline visit and 36 month visit, but in the DEN group there was significance between baseline and 36 month visit.

Abstract AB0994 – Table 1. Baseline characteristics (Mean±SD)

OC=Osteocalcin, CTX=C terminal telopeptide, PTH=parathyroid hormone, 25OHD=25 hydroxyvitamin D;

Abstract AB0994 – Table 2. Percentage of patients who abandoned.

Abstract AB0994 – Figure 1. Qualeffo-41 Score (* see text)

Conclusions: In conclusion, the observation, although numerically limited, notes that the use of denosumab in patients with postmenopausal osteoporosis leads to a greater persistence in treatment and a statistically significant adherence to therapy, which allows to obtain the maximum therapeutic effect of the therapy, also determining in 36 months of treatment an improvement in the quality of life, which is not achieved in subjects treated with bisphosphonates.

Disclosure of Interest: None declared

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AB0995 **VERTEBRAL FRACTURES CASCADE: POTENTIAL ETIOLOGIES AND RISK FACTORS**

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Background: Vertebral fracture (VF) is the most common osteoporotic fracture, and a strong risk factor of subsequent vertebral fracture. Prospective studies have shown that a recent VF increases an imminent risk of a subsequent one, and attention has been paid recently to a possible cascade phenomenon i.e. the occurrence of multiples VFs in less than one year.

Objectives: This cascade could have severe consequences, and we prompted a study to identify potential causes of osteoporosis and risk factors.

Methods: Vertebral fractures cascade (VFC) observations were collected retrospectively between January 2016 and April 2017. VFC was defined as the occurrence of at least 3 vertebral fractures within one year. Patients with other etiologies than osteoporosis (i.e. malignant or traumatic VFs) were excluded. The cause of osteoporosis associated with VFC was the one retained by the physician at the time of diagnosis.

Results: Ninety-five observations of VFC (80% of women, mean age of 71 years) were collected in 10 centres (9 tertiary centres and 1 outpatient centre). The median number of incident VFs over 1 year was 4.3–11. Forty-five patients (45.9%) had a previous major fracture before the VFC and 65 (70.7%) had densitometric osteoporosis (T-Score ≤ -2.5 SD either at lumbar or femoral site). Eighteen (19%) patients currently received oral glucocorticoids treatment at the time of VFC, with a mean daily dose of 20 mg. Thirty-three (35.1%) patients received systemic glucocorticoids in the past. The main comorbidities were history of cancer (n=19) and chronic inflammatory diseases (n=21) including asthma (n=7), chronic obstructive pulmonary disease (n=7) and rheumatoid arthritis (n=7).

A secondary osteoporosis associated with the cascade was diagnosed in 54 patients (54.5%) with the following causes: glucocorticoid-induced osteoporosis (n=22, 23.7%), benign hemopathies (mastocytosis, MGUS) (n=7, 7.1%), use of aromatase inhibitors (n=3, 3.1%), anorexia nervosa (n=3, 3.1%), alcoholism (n=3, 3.1%), pregnancy and lactation-associated osteoporosis (n=2, 2.1%), primary hyperparathyroidism (n=2, 2.1%) and hypercorticism (n=1, 1.1%). In addition, 11 cases (11.3%) were reported following a vertebroplasty procedure.

Primary either postmenopausal or idiopathic osteoporosis was diagnosed in 48 patients (51.6%). A total of 29 (29.6%) patients previously received an anti-osteoporotic treatment. In six patients (6.3%), VFC occurred early (in the year) following discontinuation of an anti-osteoporotic treatment: 5 after denosumab and one 12 months after an infusion of zoledronic acid.

Conclusions: The results of this retrospective study show that almost half of VFC occurred in patients with secondary osteoporosis. While they suggest that a careful management has to be given to these patients in order to prevent VFC in these circumstances, prospective studies are needed to further explore the determinants of such a severe complication of osteoporosis.

Disclosure of Interest: None declared

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AB0996 **BONE MINERAL DENSITY AT DIFFERENT SITES AS A PREDICTOR OF RIB FRACTURES: A CASE-CONTROL STUDY**

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Background: Rib fractures commonly occur as a result of direct trauma, though pathological causes have also been identified. Literature on the specific risk factors of rib fractures is scarce. There was an American prospective cohort study