Recent evidence supports starting bisphosphonate in the acute post-fracture period.³

Objectives: To investigate the characteristics and treatment of patients admitted with fragility fracture of the hip.

Methods: This is a retrospective study on all patients admitted with fragility fracture of the hip throughout 2018, included in the hospital registry. Data collected included patients' characteristics, place of falls, types of fracture, in-patient surgical treatment and medical treatment prescribed up until one year follow-up. Outcome of hospitalisation were reported as alive, death and at-own-risk discharge. Continuous and categorical data were described using mean ($\pm$ SD) and no of patients (%). Comparison of continuous data was performed using student t-test.

Results: One-hundred and sixty-seven patients were admitted with fragility fracture of the hip. There were 44 (26.3%) male and 123 (73.7%) female patients, with a mean age of 77.1($\pm$ 9.8) years. Male patients were significantly younger compared to female patients [73.1($\pm$ 10.5) years vs 78.5($\pm$ 9.1) years, $p=0.002$]. Eighty-six (51.5%) patients were Chinese, followed 57 (34.1%) Malay and 24 (14.4%) Indian patients. Chinese patients were significantly older than Malay patients [80.4($\pm$ 8.2) years vs 74.6($\pm$ 9.8) years, $p<0.001$] and Indian patients [80.4($\pm$ 8.2) years vs 71.0($\pm$ 10.5), $p<0.001$].

Most patients, 96 (57.5%) fell within the vicinity of their homes while the other 26 (12.7%) patients fell outside of their home. The place of fall was not documented for 45 (26.9%) patients. The types of fractures were neck of femur in 70 (41.9%), inter-trochanteric fracture in 93 (55.7%) and subtrochanteric in 4 (2.4%) patients.

Of 167 patients, 100 (59.9%) patients underwent surgical treatment and 67 (40.1%) patients were treated conservatively. The prescription of calcium and vitamin D was significantly higher in female patients (Table 1). Of 167 patients, 148 (88.6%) were discharged home, 12 (7.2%) patients died during hospital admission and 7 (4.2%) patients opted for at-own-risk discharge.

Table 1. Treatment prescribed to patients admitted with fragility fracture of the hip.

Treatment	Male, no of patients (%)	Female, no of patients (%)	p-value
Surgery	Yes (n=100) 30 (30)	70 (70)	0.209
	No (n=67) 14 (20.1)	53 (79.1)	
Calcium	Yes (n=91) 18 (19.8)	73 (80.2)	0.035
	No (n=76) 26 (34.2)	50 (65.8)	
Vitamin D	Yes (n=88) 16 (18.2)	72 (81.8)	0.011
	No (n=79) 28 (35.4)	51 (64.6)	
Bisphosphonate	Yes (n=13) 0	13 (100)	NA
	No (n=154) 44 (28.6)	110 (71.4)	

Conclusion: There was a high proportion of female patients admitted with fragility fracture of the hip. Majority of patients were Chinese, who were significantly older compared to Malay and Indian patients. We found a low prescription of osteoporosis medications for patients following fragility fracture of the hip. The care of osteoporosis can be improved through multidisciplinary approach.

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AB0627

THE EFFECT OF BIOLOGICALLY ACTIVE FOOD SUPPLEMENT WITH CALCIUM AND VITAMIN D3 ADMINISTRATION ON CALCIUM HOMEOSTASIS AND FALLS INCIDENCE IN PATIENTS WITH HIGH FRACTURE RISK UNDERGOING MEDICAL REHABILITATION

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Background: Vitamin D and calcium deficiencies is of particular importance in older patients undergoing medical rehabilitation and having a high risk of fractures. Preventing falls and fractures, including during the course

of rehabilitation, is an important challenge that can be addressed in these patients, in particular through improved nutrition and vitamin D and calcium supplementation.

Objectives: To evaluate the effect of long-term calcium and vitamin D3 intake on calcium homeostasis and fall's rate in patients with high fracture risk starting rehabilitation course.

Methods: The study enrolled 119 men and women aged 50-80 y.o. with high absolute fracture probability by FRAX who started medical rehabilitation. 41 patients have been receiving antiresorptive therapy already comprised group 1, other patients were randomized into groups 2 (n=39) and 3 (control, n=39). In groups 1 and 2, a food supplement containing calcium citrate 1000mg and vitamin D3 600 IU was prescribed for 12 months. All patients undergo laboratory examination, food calcium intake and fall assessment at baseline, in 6 and 12 months.

Results: Daily calcium intake in the study sample (n=119) was 782.9 $\pm$ 243.4 mg. Vitamin D deficiency was detected in 38.4% of the examined. An increase in 25(OH)D level was noted in groups 1 and 2 after 6 and 12 months ($p<0.01$). Patients in group 1 showed an increase in serum osteocalcin and calcium levels after 6 and 12 months ($p<0.05$). In group 3, there was an increase of immuno-reactive parathyroid hormone levels after 6 ($p<0.05$) and 12 months ($p<0.01$), C-terminal telopeptide of type I collagen level and alkaline phosphatase activity after 12 months ($p<0.05$). In group 1, there was also a decrease in proportion of patients who fell after 6 months ($\chi^2=4.97$, $p=0.026$) and a decrease in the total number of falls after 12 months ($\chi^2=4.89$, $p=0.027$). Group 2 showed a decrease in the number of patients who fell after 6 and 12 months ($\chi^2=48.58$, $p=0.0034$ at both stages of the study) and the number of falls in general after 6 months ($\chi^2=6.02$, $p=0.0142$).

Conclusion: The obtained data allow us to recommend prescription of dietary supplements containing calcium and vitamin D3 as a part of complex rehabilitation of patients with high fracture risk.

Disclosure of Interests: None declared.

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Crystal diseases, metabolic bone diseases other than osteoporosis

AB0628

PRE-INFUSION GLUCOCORTICOID ELIMINATION IN PATIENTS WITH UNCONTROLLED GOUT TREATED WITH PEGLOTICASE: A CASE SERIES

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Background: Pegloticase is indicated for treating uncontrolled gout, but some patients develop anti-drug antibodies that have been associated with a loss of efficacy and infusion reactions (IRs).¹ Per the pegloticase prescribing information, pre-infusion medications, including glucocorticoids (GCs), should be given to minimize IR risk.² Given that GCs have a significant side effect profile and patients with uncontrolled gout generally have multiple comorbidities,^{3,4} minimizing steroid exposure is desirable.

Objectives: The current case series examines a community rheumatology practices' experience with pre-infusion GC elimination in uncontrolled gout patients treated with pegloticase.

Methods: This retrospective chart review was conducted at a rheumatology practice that discontinues pre-infusion GC use in patients treated with pegloticase. Patients treated from 2016-2020 who had pre-infusion GCs discontinued during therapy were included. Pre-infusion prophylaxis at this practice includes methylprednisolone (125 mg IV), diphenhydramine (50 mg oral + 12.5 mg IVP), famotidine (40 mg oral), and acetaminophen (1000 mg) administered immediately before infusions. All other IR prophylaxis continued when GCs were stopped without tapering. Demographics, number of pegloticase infusions, and safety (adverse events [AEs], clinical lab values) were examined. Patients self-managed gout flares with oral methylprednisolone (24 mg then 5-day taper).

Results: Nine patients (8 male) with tophaceous gout met inclusion criteria. Mean age was 72.3 $\pm$ 6.9 years (65-84 years), mean BMI was 28.7 $\pm$ 5.6 kg/m², and mean pre-therapy serum uric acid (sUA) was 7.3 $\pm$ 2.7 mg/dL (3.9-12.7 mg/dL). Two patients were co-treated with oral methotrexate (15 and 20 mg/week) and one patient was on hemodialysis. Most common comorbidities included osteoarthritis (9 patients), hypertension (8 patients), chronic kidney disease (5 patients), kidney stones (5 patients), and diabetes (5 patients). A median of 27 pegloticase infusions (range: 9-84) were administered, with 8 of 9 patients receiving $\geq$ 12 infusions. Median number of infusions before and after initial GC

discontinuation was 7 (range: 2-56) and 10 (range: 2-48), respectively. Pre-infusion steroids were re-started in 3 patients after a rise in sUA, with 1 regaining sUA response (patient 2) and 2 discontinuing therapy (patients 4 and 9). An additional patient had a loss of sUA response (patient 7) and discontinued, 1 patient discontinued due to hospitalization (patient 6), and 1 patient chose to discontinue therapy (patient 8). At the time of data collection, 4 patients remained on therapy (patients 1-3, 5). Eight patients had at least one AE (all deemed unrelated to treatment), including influenza, hypertensive crisis, and toe amputation. No IRs occurred.

Conclusion: In this case series, 8 of 9 patients received 6 months or more (≥ 12 infusion) of pegloticase. These cases suggest that pre-infusion GC discontinuation may be possible in some patients treated with pegloticase (particularly those over 70 years). Further investigation exploring this concept is warranted, including evaluating the optimal time and conditions to discontinue pre-infusion GCs with pegloticase.

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Figure. Pegloticase infusions administered with and without pre-infusion IV methylprednisolone at time of data collection

*patient administered oral methotrexate before and during pegloticase therapy.
Patients 4, 7, and 9 (ages 65-67) discontinued due to loss of sUA response.

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AB0629

ACCURACY OF SYNOVIAL FLUID ANALYSIS FOR THE IDENTIFICATION OF CALCIUM PYROPHOSPHATE CRYSTALS: AN ANCILLARY STUDY OF OMERACT CRITERION VALIDITY STUDY FOR ULTRASOUND IN CPPD

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Background: Synovial fluid analysis (SFA) via compensated polarized light microscopy is still considered the gold standard for the identification and diagnosis of Calcium Pyrophosphate Deposition disease (CPPD)-related arthropathies[1], but very few studies have been published about its diagnostic accuracy.

Objectives: The aim of this study was to evaluate the accuracy of SFA in the identification of calcium pyrophosphate dihydrate (CPP) crystals compared to microscopic analysis of joint tissues as the reference standard.

Methods: This is an ancillary study of an international, multicentre cross-sectional study performed by the CPPD subgroup of the OMERACT Ultrasound working group[2]. Consecutive patients with knee osteoarthritis (OA) waiting for total knee replacement surgery were enrolled in the study from 2 participating centres, Mexico and Romania. During surgical procedures synovial fluid (SF), menisci and hyaline cartilage were collected and analysed within 48 hours after surgery under transmitted light microscopy and compensated polarised light microscopy for the presence/absence of CPP crystals. All slides were analysed by expert examiners on site, blinded to other findings. A dichotomic score (absence/presence) was used for scoring both SF and tissues. Microscopic analysis of knee tissues was considered the gold standard. Sensitivity, specificity, accuracy, positive and negative predictive values (PPV and NPV) of SFA in the identification of CPP crystals were calculated.

Results: 15 patients (53% female, mean age 68yo $\pm$ 8.4) with OA of grade 3 or 4 according to Kellgren-Lawrence scoring were enrolled. 12 patients (80%) were positive for CPP crystals at SFA and 14 (93%) at tissues microscopic analysis. Among 12 SFA positive patients, all were positive for CPP crystals in either medial or lateral meniscus, and 11 were positive in both; 10 patients were positive at the hyaline cartilage, and all 10 were also positive for at least one meniscus. Regarding the 3 SFA negative patients, only one had no crystals in the examined tissues, while the other 2 patients had CPP crystals in both menisci and hyaline cartilage. The overall diagnostic accuracy of SFA compared to histology analysis for CPPD was 87%, with a sensitivity of 86% and a specificity of 100%, the PPV was 100% and the NPV was 33% (Table 1).

Table 1. sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic accuracy of synovial fluid analysis compared to the reference standard. CI: Confidential Interval. SF: synovial fluid, in parentheses: numerators and denominators for all percentages provided.

	Sensitivity	Specificity	PPV	NPV	Accuracy
SF analysis	86% (12/14) (0.65-0.99) CI 95%	100% (1/1) (0.0-0.25) CI 95%	100% (12/12) (0.65-0.99) CI 95%	33% (1/3) (0.0-0.25) CI 95%	87% (13/15)

Conclusion: SFA demonstrated to be an accurate test for the identification of CPP crystals in patients with advanced OA. However, is not always feasible and carries some risks for the patient. Considering the availability of validated imaging techniques for the detection of CPPD, such as US, SFA could be used in those patients where imaging and clinical data are not definitely confirmatory of the disease.

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AB0630

PEGLOTICASE/METHOTREXATE CO-THERAPY IMPROVED JOINT AND PATIENT-REPORTED HEALTH ASSESSMENTS IN PATIENTS WITH UNCONTROLLED GOUT: 12-MONTH EXPLORATORY OUTCOMES OF THE MIRROR OPEN-LABEL TRIAL

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