P342
CLINICAL CHARACTERISTICS, INCLUDING HISTORY OF MYOCARDIAL INFARCTION AND STROKE, AMONG US PMO WOMEN INITIATING TREATMENT WITH ROMOSOZUMAB AND OTHER ANTIOSTEOPOROSIS THERAPIES

T. C. Lin[1], Y. Liu[2], H. C. Chien[1], T. Arora[3], M. Oates[1], D. Betah[1], J. R. Curtis[2]

[1]Amgen Inc., Thousand Oaks, [2]University of Alabama at Birmingham, Birmingham, [3]FASTER Medicine, Hoover, USA

Objective: This ongoing FDA postmarketing requirement study (2020–24) assesses the impact of the boxed cardiovascular (CV) warning on romosozumab (Romo) treatment and informs feasibility of a future comparative safety study.

Methods: This retrospective study uses repeated analyses within five 1-year blocks since Romo approval (2019) and includes women (≥ 55 years) newly initiating Romo, denosumab (DMAb), intravenous zoledronate, PTH analogs, or oral bisphosphonates. From data identified using Optum and Medicare databases, we compared baseline demographics and clinical characteristics (including myocardial infarction [MI] or stroke within 1 year before treatment initiation and history of CV, fracture, and other CV risk factors) in patients initiating Romo vs. other osteoporosis (OP) treatments (clinically significant difference = absolute standardized mean difference [SMD] > 0.10). We also conducted propensity score matching (PSM) of clinical characteristics (referent Romo).

Results: From April 2019 to September 2021, we identified 16,475 Romo users (Optum 1879; Medicare 14,596). The proportion of patients with a history of an MI or stroke was very low (0.1–0.2%) in both Optum and Medicare databases and was numerically lower in patients initiating Romo vs. other OP treatments (all absolute SMDs < 0.10) (Table). Patients initiating Romo vs. other treatments (except DMAb) were older, and a higher proportion (except PTH users) had prior baseline healthcare utilization and OP-related history (fractures, OP treatment). The proportion of patients with a history of other CV risk factors were similar between Romo and other treatment groups. Romo was most frequently administered by rheumatologists in the Medicare population (34.9%). All baseline clinical characteristics were balanced after PSM.

Table: Baseline CV and OP History and CV Risk Factors in Optum and Medicare Populations Before PSM

	Optum					Medicare		
n (%) (unless otherwise noted)	Romo N = 1879	DMAb N = 39020	IV Zol N = 16530	PTH analogs N = 3152	Oral BPs N = 96259	Romo N = 14596	DMAb N = 182919	IV Zol N = 74850
Age, mean (SD)	73.2 (8.2)	74.4 (7.9) SMD −0.15	72.8 (7.7) SMD 0.05	70.5 (8.4) SMD 0.32	72.3 (7.6) SMD 0.11	75.7 (7.2)	76.2 (7.5) SMD 0.07	74.8 (6.9) SMD 0.13
CV history								
MI (recent)[‡]	2 (0.1)	117 (0.3) SMD −0.04	43 (0.3) SMD −0.04	8 (0.3) SMD −0.03	249 (0.3) SMD −0.04	22 (0.2)	587 (0.3) SMD 0.04	195 (0.3) SMD 0.02
Stroke (recent)[‡]	3 (0.2)	150 (0.4) SMD −0.04	53 (0.3) SMD −0.03	10 (0.3) SMD −0.03	270 (0.3) SMD −0.03	17 (0.1)	628 (0.3) SMD 0.05	206 (0.3) SMD 0.04
MI (history)[‡†]	94 (5.0)	2728 (7.0) SMD −0.08	970 (5.9) SMD −0.04	241 (7.6) SMD −0.11	5555 (5.8) SMD −0.03	510 (3.5)	8326 (4.6) SMD 0.05	2641 (3.5) SMD < 0.01
Stroke (history)[‡†]	137 (7.3)	3326 (8.5) SMD −0.05	1112 (6.7) SMD 0.02	255 (8.1) SMD −0.03	5857 (6.1) SMD 0.05	500 (3.4)	7715 (4.2) SMD 0.04	2534 (3.4) SMD < 0.01
TIA	64 (3.4)	1631 (4.2) SMD −0.04	569 (3.4) SMD < 0.01	137 (4.3) SMD −0.05	2869 (3.0) SMD 0.02	301 (2.1)	4460 (2.4) SMD 0.03	1562 (2.1) SMD < 0.01
Heart failure	215 (11.4)	4775 (12.2) SMD −0.02	1491 (9.0) SMD 0.08	405 (12.8) SMD −0.04	8451 (8.8) SMD 0.09	1282 (8.8)	19340 (10.6) SMD 0.06	5360 (7.2) SMD 0.06
OP-related history								
OP diagnosis	1620 (86.2)	27884 (71.5)*	11581 (70.1)*	2656 (84.3)	26167 (27.2)*	11353 (77.8)	95727 (52.3)*	40967 (54.7)*
Hip fracture	243 (12.9)	2422 (6.2)*	755 (4.6)*	352 (11.2)	3352 (3.5)*	1604 (11.0)	9637 (5.3)*	2798 (3.7)*
Vertebral fracture	426 (22.7)	4086 (10.5)*	1405 (8.5)*	741 (23.5)	4043 (4.2)*	2942 (20.2)	13997 (7.7)*	4697 (6.3)*
Other fractures	428 (22.8)	5597 (14.3)*	1980 (12.0)*	752 (23.9)	8822 (9.2)*	2268 (15.5)	14641 (8.0)*	4768 (6.4)*
History of fall	328 (17.5)	4220 (10.8)*	1359 (8.2)*	554 (17.6)	6397 (6.6)*	N/A	N/A	N/A
Oral BPs	619 (32.9)	16115 (41.3)**	5658 (34.2)	1353 (42.9)**	N/A	2907 (19.9)	50273 (27.5)*	16805 (22.5)
IV BPs	213 (11.3)	2821 (7.2)*	70 (0.4)*	208 (6.6)*	806 (0.8)*	1214 (8.3)	10132 (5.5)*	N/A
DMAb	529 (28.2)	N/A	1863 (11.3)*	541 (17.2)*	2863 (3.0)*	4820 (33.0)	N/A	7254 (9.7)*
PTH analogs	204 (10.9)	1423 (3.6)*	505 (3.1)*	N/A	499 (0.5)*	794 (5.4)	4894 (2.7)*	1828 (2.4)*
CV risk factors								
Hypertension	1206 (64.2)	27688 (71.0)**	10774 (65.2)	2036 (64.6)	63776 (66.3)	9130 (62.6)	123000 (67.1)	44842 (59.9)
Type II diabetes	350 (18.6)	8968 (23.0)**	3233 (19.6)	679 (21.5)	22985 (23.9)**	2008 (13.8)	33797 (18.5)*	11434 (15.3)
CKD without dialysis	456 (24.3)	10386 (26.6)	3350 (20.3)	733 (23.3)	19791 (20.6)	2736 (18.7)	37992 (20.8)	10728 (14.3)
CKD with dialysis	4 (0.2)	97 (0.2)	12 (0.1)	3 (0.1)	91 (0.1)	63 (0.4)	1523 (0.8)	170 (0.2)
Arrhythmia	324 (17.2)	6811 (17.5)	2514 (15.2)	531 (16.8)	11853 (12.3)*	2932 (20.1)	36577 (20.0)	12740 (17.0)
Smoking	633 (33.7)	12507 (32.1)	5378 (32.5)	1136 (36.0)	28914 (30.0)	3067 (21.0)	33433 (18.3)	13310 (17.8)

BP: bisphosphonate; CKD: chronic kidney disease; CV: cardiovascular; DMAb: denosumab; IV: intravenous; MI: myocardial infarction; N/A: not applicable; OP: osteoporosis; PSM: propensity score matching; PTH: parathyroid hormone; Romo: romosozumab; SD: standard deviation; SMD: standardized mean difference; TIA: transient ischemic attack; Zol: zoledronate

[‡]Within 1 year before treatment initiation; [†]Using all available historical data; *Signals prematching imbalance, based on SMD > 0.10 with romosozumab > comparator; **SMD < −0.10 signaling prematching imbalance with romosozumab < comparator

Conclusion: Romo initiating patients were mostly older and had a greater history of fractures and OP treatment, similar history of hypertension, type II diabetes, arrhythmia, and smoking, and similarly low or numerically lower rates of MI or stroke before Romo initiation compared with patients initiating other OP treatments. These data suggest the FDA-required boxed CV warning continues to have its intended effect on patient selection.

Acknowledgment: Funding from Amgen Inc, UCB Pharma.

Disclosures: TCL, HCC, MO, and DB are employees and stockholders of Amgen; JRC has received grant support and consulting fees from Amgen and Lilly.

P343
IS THE RATE OF RESPONDERS TO HYALURONIC ACID INJECTION FOR PATIENTS WITH KNEE OSTEOARTHRITIS STABLE OVER TIME? POST HOC ANALYSES OF A 6-MONTH FOLLOW-UP STUDY

O. Bruyère[1], G. Honvo[1], E. Vidovic[2], B. Cortet[3]

[1]ULiège, Liège, Belgium, [2]Aptissen, Plan-les-Ouates, Switzerland, [3]University Hospital of Lille, Lille, France

Objective: Recently, a study showing the non-inferiority of a single injection of sodium hyaluronate plus sorbitol (Synolis VA®) compared to hylan G-F20 (Synvisc-One®) over a 24-week period was published. The objective of the present study is to assess if a short term response to a single injection of sodium hyaluronate plus sorbitol can be maintained over a 6 month-period and if the maintenance of the response to treatment is dependent on the functional status at baseline.

Methods: Responders to treatment at Day 28, Day 84 and Day 168 were evaluated according to the responder criteria proposed by the OMERACT-OARSI. WOMAC function index was used to assess functional status at baseline. All analyses were adjusted for age, gender, BMI and baseline WOMAC total score, using data from the intention-to-treat (ITT) population.

Results: Out of the 96 patients included in the study who were receiving Synolis VA, 59.38% were responders at Day 28 according to the OMERECT/OARSI responder criteria, 59.78% at Day 84 and 64,52% at Day 168. Among the responders at D28, the probability of being responder at D84 and D168 was significantly higher than among non-responders, with corresponding odds ratio (95% CI) of 2.85 (1.07–7.59) and 7.28 (2.53–20.93), respectively. Patients with a poorer physical function at baseline were more likely to respond to the treatment at all time-points, compared to those with a better physical function (OR 3.74 [1.37–10.21]).
Conclusion: An early response of a single injection of sodium hyaluronate plus sorbitol is predictive of the long term response, up to 24 weeks. Patients with a poorer physical function may best benefit from the treatment.

P344
OUR EXPERIENCES IN TREATMENT ON POSTMENOPAUSAL OSTEOPOROSIS WITH PHYSICAL THERAPY

V. Koevska[1], E. Nikolic-Dimitrova[1], B. Mitrevska[1], C. Gjerakaroska-Savevska[1], M. Gocevska[1], B. Kalcovska[1], M. Manoleva[1]

[1]University Clinic for Physical Therapy and Rehabilitation, Faculty of Medicine, Ss Cyril and Methodius University in Skopje, Skopje, North Macedonia

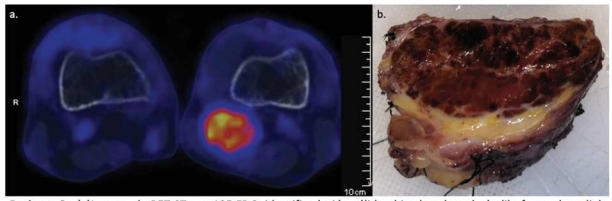
Objective: Osteoporosis is a multifactorial progressive skeletal disease characterized by a decrease in bone density and disruption of bone microarchitecture, predisposing the bone to fracture. These fractures are very often associated with increased morbidity, mortality, loss of function, and high economic cost. We aimed to assess the effectiveness of physical therapy in the treatment of pain and BMD of the spine in patients with primary osteoporosis.
Methods: The research included 92 patients diagnosed with osteoporosis who signed an informed consent to participate in the study. A numerical pain scale was used to assess pain. BMD was determined by DXA. Quality of life was determined by Qualeffo-41, specific for osteoporosis. The patients were followed for one year.
Results: The results showed that 83.69% of respondents have deformity, i.e. 58.69% have kyphosis. After one year, the results of the biochemical analyzes showed a significant decrease in β-Cross-Laps ($p < 0.001$) and a significant increase in the average vitamin D in the blood ($p < 0.001$). After one year, pain in female patients was significantly reduced ($p = 0.002$). KMG showed a significant difference after one year from lumbar spine treman ($p = 0.001$).
Conclusion: Physical therapy and rehabilitation have a significant role in reducing pain and improving BMD and improving the quality of life in patients with osteoporosis.

P345
TUMOR-INDUCED OSTEOMALACIA. A CASE SERIES FROM MEDIUM INCOME COUNTRY

C. Prieto-Saldarriaga[1], J. Gutierrez-Restrepo[2], D. Contreras[3], G. Varela-Aguirre[3], A. Roman-Gonzalez[4]

[1]Hospital Pablo Tobon Uribe. Universidad Pontifica Bolivariana, [2]Universidad de Antioquia-Clinica Somer, [3]Hospital Pablo Tobón Uribe, [4]Universidad de Antioquia-Hospital Universitario San Vicente Fundación, Medellín, Colombia

Objective: Tumor-induced osteomalacia (TIO) is a rare paraneoplastic syndrome secondary to mesenchymal tumors, presenting with bone pain, osteomuscular deformity, fractures, and occasionally weight and height loss. The main laboratory findings are hypophosphatemia, phosphaturia, and elevated alkaline phosphatase. It is caused by elevated serum levels of FGF23, secreted by these types of tumors, leading to renal inhibition of phosphorus reabsorption, resulting in urinary losses and altered bone metabolism. There are few reports from Latin America and limited information regarding diagnostic difficulties in medium-income countries from Latin America. Here, we present our experience with TIO in Colombia.
Methods: A multicentric retrospective chart review of surgically treated TIO patients was performed and was approved by all participants centers. An invitation was sent to Colombian endocrinologist to participate.
Results: We found 4 cases of TIO, three women and one man, with an average age at diagnosis of 47 years and an average time between symptom onset and diagnosis of 4.75 years. These patients presented with osteomuscular symptoms and significant sequelae. Hypophosphatemia, phosphaturia, and elevated FGF-23 were highlighted in the studies. Complementary functional and anatomic studies allowed tumor localization. Surgical resection was complete, with normalization of phosphorus and FGF-23 levels and functional clinical improvement.



Paciente 3: (a)Imagen de PET-CT con 18F-FDG, identifica lesión sólida ubicada sobre el cóndilo femoral medial, con SUVmáx de 5,46, mide 3x4cm. (b)Espécimen quirúrgico, al corte es color café explicado por hemosiderina en su interior; rodeado por pseudocápsula de tejido conectivo.

Case 3: 18F-FDG PET CT showing a soft tissue mas. SUVMAX 5.46 Size 3*4 cm. Macroscopic photography of the specimen.
Conclusion: TIO is a rare paraneoplastic syndrome that can present with significant bone and muscle symptoms. The diagnosis is based on laboratory findings such as hypophosphatemia, phosphaturia, and elevated FGF23 levels. The localization of the tumor is crucial for treatment, and surgical resection is necessary for a complete recovery, with normalization of laboratory values and improvement in clinical symptoms. There is an important delay (4.75 years) to diagnose TIO. These cases emphasize the importance of early diagnosis and prompt intervention in TIO.
Disclosure: ARG and JG have received honoraria from Ultragenyx.

P346
ASSOCIATIONS BETWEEN OSTEOPOROSIS AND THE SEVERITY OF SARCOPENIA IN VETERAN HOMECARE SENIORS IN TAIWAN

H. J. Chen[1]

[1]Pingtung Veterans General Hospital, Pingtung City, Taiwan

Objective: To investigate the relationship between sarcopenia staging and BMD according to the Asian Working Group for Sarcopenia (AWGS) 2019 definitions in veteran homecare older patients in Taiwan.
Methods: BMD (DXA), appendicular lean mass (DXA), handgrip strength (hydraulic dynamometer) and gait speed (over 4-m) were used to screen for osteoporosis and sarcopenia. Participants were categorized as osteoporotic according to the WHO definition (T score ≤ -2.5), and classified with probable sarcopenia or confirmed sarcopenia according to the AWGS 2019 definitions.
Results: A total of 249 long-term care older adults (81.9% men) with a median age of 82.23 years were included in this study. The prevalence of osteoporosis increased across sarcopenia staging by