**OBJECTIVES:** Analyze drug use and related costs of a RA patient cohort in UNIMED Rio de Janeiro affiliate (HMO). **METHODS:** All RA patient information of age, weight, height, sex, body mass index (BMI) data and biologic DMARDs use were collected from March/2009 to March/2011. Drugs ex-factory prices were used to estimate treatment costs. **RESULTS:** Sixty-nine patients were treated in the period of analysis. The cohort profile was: 86.9% woman and 13.1% man, mean age 51 years, mean weight 65.85kg, mean height 1.60m and mean BMI 24.31; 71.21% of patients have been diagnosed for more than 5 years, 16.67% from 2 to 5 years and 12.12%, 6 months to 2 years. Mean non-biological DMARD use was 2.27 years. From March/2009 to March/2010, 5 patients were treated with infliximab, 2 with etanercept, 5 with adalimumab, 5 with abatacept, 3 with tocilizumab and 4 with rituximab. Estimated drugs costs were BRL398,943.56, BRL145,266.68, BRL385,933.60, BRL325,719.00, BRL154,190.40 and BRL124,228.32 respectively, resulting in a total of BRL1,534,281.56 (mean BRL63,928.40/patient). From April/2010 to March/2011, 14 patients were treated with infliximab, 1 with etanercept, 5 with adalimumab, 8 with abatacept, 5 with tocilizumab and 12 with rituximab. Drugs acquisition costs were BRL1,117,041.98, BRL72,633.34, BRL385,933.60, BRL521,150.40, BRL256,984.00 and BRL372,684.96 respectively, resulting in a total of BRL2,726,428.28 (BRL60,587.30/patient). **CONCLUSIONS:** Considering first-line biologic DMARDs, tocilizumab therapy was estimated to be the less expensive. Mean costs per patient decreased in 5.23% from first to second period of analysis mainly because of growth in rituximab treatment usage (from 16.7% to 26.7%).

## MUSCULAR-SKELETAL DISORDERS - Patient-Reported Outcomes & Patient Preference Studies

### PMS53

### ASSOCIATION BETWEEN TERIPARATIDE ADHERENCE AND HEALTH CARE UTILIZATION AND COSTS IN REAL WORLD UNITED STATES KYPHOPLASTY/ VERTEBROPLASTY PATIENTS

Zhao Y[1], Johnston SS[2], Smith D[2], Mcmorrow D[3], Krege JH[1], Krohn K[4]
[1]*Eli Lilly and Company, Indianapolis, IN, USA,* [2]*Thomson Reuters, Washington, DC, USA,* [3]*Thomson Reuters, Cambridge, MA, USA,* [4]*Lilly USA, LLC, Indianapolis, IN, USA*

**OBJECTIVES:** To examine the association between teriparatide adherence and health care utilization and costs in "real world" U.S. kyphoplasty/vertebroplasty (KV) patients. **METHODS:** A large U.S. administrative claims database was used to identify patients aged 50+ with a KV between January 1, 2002-December 31, 2010 (first observed KV=index). All patients included had 6+ months of pre-index continuous enrollment, and no pre-index teriparatide, cancer, or Paget's disease. Patients initiating teriparatide were followed for up-to 36 months post-index (follow-up period), with censoring at switch to bisphosphonates, disenrollment, end of study period, or having cancer or Paget's disease. Three teriparatide adherence (measured as the proportion of days covered [PDC] over the follow-up period) cohorts were constructed: low (PDC≤0.5), medium (0.5<PDC≤0.8), and high (PDC>0.8). Repeated KV and per-patient per-month (PPPM) number of inpatient admissions and costs (total, inpatient, outpatient, and pharmacy) were compared between cohorts. Multivariable generalized linear models were used to examine the association between teriparatide adherence and health care utilization and costs, adjusting for patient characteristics. **RESULTS:** The study sample included 1568 patients (mean age: 75 years; 82% female), with 403 (26%), 382 (24%), and 783 (50%) in the low, medium, and high adherence groups, respectively. Adjusting for differences in patient characteristics, high adherence was significantly (P<0.05) associated with the lowest PPPM inpatient (low=$1,287; medium=$1,005; high=$678) and outpatient (low=$1,464; medium=$1,244; high=$1,077) medical costs but increased pharmacy costs (low=$752; medium=$1,159; high=$1,616) (all P<0.05), leading to similar total costs (low=$3,344; medium=$3,376; high=$3,351) between cohorts. The high adherence cohort also had the lowest (P<0.05) odds of repeated KV (odds ratio vs. high=1.72 [low] and 1.73 [medium]) and number of inpatient admissions (incidence rate ratio with base category=high: low =1.61; medium=1.19). **CONCLUSIONS:** Among KV patients newly-initiating teriparatide, significantly increased pharmacy costs associated with greater teriparatide adherence were offset by significantly lower odds of repeated KV and significantly lower medical resource use and costs.

### PMS54

### A RETROSPECTIVE COHORT STUDY OF PERSISTENCE & COMPLIANCE TO TREATMENT FOR OSTEOPOROSIS IN POSTMENOPAUSAL WOMEN IN HUNGARY

Lakatos P[1], Tóth E[2], Kovacs E[2], Lang Z[2], Psachoulia E[3], Intorcia M[3]
[1]*Semmelweis University, Budapest, Hungary,* [2]*Healthware Consulting Ltd., Budapest, Hungary,* [3]*Amgen (Europe) GmbH, Zug, Switzerland*

**OBJECTIVES:** Low persistence and poor compliance with prescribed medication are important factors in treatment failure. This study estimated persistence and compliance of post-menopausal (PMO) women in Hungary. **METHODS:** This retrospective analysis used patients' data from the National Health Insurance Fund Administration (NHIFA). Subjects were females, ≥50 years old with a diagnosis of osteoporosis (with ICD-10 codes, M80 or 81), who started an osteoporosis drug prescription between Jan 2004 and Dec 2010. Treatment persistence was estimated per active substance and administration types for 12 and 24 months with a 4-week grace period. Compliance was measured by Medication Possession Ratio (MPR) and a patient was considered compliant with treatment at one year if MPR≥80%. **RESULTS:** A total of 223,068 patients matched inclusion criteria, of whom 49.6% were older than 70 years, 6.4% had prior fractures at first index date, 79.5% were on oral bisphosphonates (OBPs), 8.2% on intravenous (IV) BPs and 12.3% on other therapies. Persistence analysis with a 4-week grace period showed 27.0% and 68.7% of patients persistent after 1 year for oral and parenteral drugs respectively. Sensitivity analyses with grace period of 8 weeks (43.7% and 75.8%) and 12 weeks (60.8% and 79.5%) increased persistence rates. The lowest persistence after 12 months was observed in daily (20.5%) and monthly (20.0%) compared to quarterly (48.8%) drugs, declining at 24 months to 7.6%, 4.9%, 28.5% and 34.9% for daily, monthly, quarterly and yearly drugs, respectively. Only 33.2% of all patients were compliant with treatment (i.e. MPR>80%). Compliance was higher to parenteral drugs (73.5%) than oral drugs (29.5%). The lowest compliance was observed with daily oral drugs (only 18.9%); weekly and monthly drugs had similar compliance of 31%. **CONCLUSIONS:** Persistence and compliance are very low in osteoporosis treatment of PMO women in Hungary. However, parenteral, less frequently administered drugs have higher persistence and better compliance.

### PMS55

### A RETROSPECTIVE COHORT STUDY OF PERSISTENCE & COMPLIANCE TO TREATMENT FOR OSTEOPOROTIC MEN IN HUNGARY

Lakatos P[1], Tóth E[2], Kovacs E[2], Lang Z[2], Psachoulia E[3], Intorcia M[3]
[1]*Semmelweis University, Budapest, Hungary,* [2]*Healthware Consulting Ltd., Budapest, Hungary,* [3]*Amgen (Europe) GmbH, Zug, Switzerland*

**OBJECTIVES:** To estimate persistence and compliance with prescribed osteoporosis medication in male patients in Hungary. **METHODS:** This retrospective analysis used patient data from the National Health Insurance Fund Administration (NHIFA). Subjects were males ≥50 years old with a diagnosis of osteoporosis (ICD-10 code M80 or 81) who filled an initial osteoporosis drug prescription between Jan 2004 and Dec 2010. Treatment persistence was estimated per active substance and administration types for 12 and 24 months with a 4-week grace period. Compliance was measured by Medication Possession Ratio (MPR) and a patient was considered compliant with treatment at 1 year if MPR≥80%. **RESULTS:** Of 19,905 patients, who matched inclusion criteria, 47.7% were older than 70 years and 6.4% had prior fractures at first index date; 99.0% were on oral bisphosphonates (OBPs), 0.9% on intravenous (IV) BPs and 0.1% on other therapies. Persistence analysis with a 4-week grace period showed 26.1% of patients were persistent after 1 year for oral drugs declining after 2 years to 10.5%. For parenteral drugs, 16.4% of patients were persistent after 2 years. Sensitivity analyses with grace periods of 8 weeks (21.7% for oral and 19.1% for parenteral drugs) and 12 weeks (34.7% for oral and 55.0% for parenteral drugs) increased persistence rates at 2 years. The lowest persistence after 12 months was observed in weekly (26.1%) & monthly (37.6%) drugs, reaching after 24 months 10.5%, 37.6% & 16.4% for weekly, monthly and yearly drugs, respectively. Only 27.8% of all patients were compliant with treatment (i.e. MPR≥80%). Compliance was higher to parenteral drugs (100%) than oral drugs (27.5%). **CONCLUSIONS:** Persistence and compliance with oral osteoporosis treatments are very low in male patients in Hungary. However, parenteral, less-frequently administered drugs are associated with higher persistence and better compliance.

### PMS56

### IMPACT OF COMPLIANCE ON FRACTURE RISK FOR OSTEOPOROSIS IN POSTMENOPAUSAL WOMEN IN HUNGARY

Lakatos P[1], Tóth E[2], Kovacs E[2], Lang Z[2], Psachoulia E[3], Intorcia M[3]
[1]*Semmelweis University, Budapest, Hungary,* [2]*Healthware Consulting Ltd., Budapest, Hungary,* [3]*Amgen (Europe) GmbH, Zug, Switzerland*

**OBJECTIVES:** Compliance to osteoporosis drugs is frequently very low leading to increased fracture risk in patients. This study examined the factors associated with fracture risk of post-menopausal osteoporotic (PMO) patients in Hungary with key interest in compliance. **METHODS:** This retrospective analysis used patients' data from the National Health Insurance Fund Administration (NHIFA). Subjects were females, ≥50 years old with a diagnosis of osteoporosis (ICD-10 codes, M80 or 81), who started an osteoporosis drug prescription between Jan 2004 and Dec 2010. The relationship between all factors and fracture risk was assessed using a dynamic Cox regression model and the Andersen-Gill analysis estimating 95% confidence intervals. **RESULTS:** A total of 223,068 patients were analysed and 128,610 matched inclusion criteria for the fracture risk analysis with 46.9% older than 70 years; 6.4% had prior fractures at index date (i.e. the start of the analysis period). Analysis showed that compliant patients have an 18% (RR=0.82, CI=0.75-0.89) fracture risk reduction versus non-compliant patients. Moreover, patients older than 70 years had an increase in fracture risk of 26% (RR=1.26, CI=1.15-1.38) compared to patients aged 50-60 years old. Prior fractures were associated with a two-fold increased risk of a new fracture (RR=2.01, CI=1.76-2.30) and almost with a three-fold increased fracture risk (RR=2.91, CI=2.37-3.58) in patients with one and 2+ prior fractures respectively compared to patients with no prior fractures. Moreover, a relationship was found between any co-medication and fracture risk with a 9% (RR=1.09, CI=1.00-1.20) increase with one co-medication and a 32% (RR=1.32, CI=1.19-1.47) with 2+ co-medications compared to none. **CONCLUSIONS:** Age, any co-medication and prior fractures were associated with an increased relative risk of fracture. Compliance, however, was associated with protection against fracture (reduction of relative fracture risk).

### PMS57

### EFFECT OF DIFFERENT METHODS ON ESTIMATING PERSISTENCE TO ORAL BISPHOSPHONATE THERAPY IN PORTUGUESE PMO PATIENTS – AN OBSERVATIONAL PROSPECTIVE STUDY

Guerreiro J[1], Torre C[1], Mendes Z[1], Machado M[2], Ferreira I[3], Feudjo-tepie M[4], Canhão H[5], Branco J[6], Miranda A[1], Cristino J[2]
[1]*INFOSAÚDE, Lisboa, Estremadura, Portugal,* [2]*Amgen Portugal, Paço D'Arcos, Lisboa, Portugal,* [3]*Amgen, Cambridge, Cambridge, UK,* [4]*Amgen, Uxbridge, Uxbridge, UK,* [5]*Faculdade de Medicina, Universidade de Lisboa, Lisboa, Portugal,* [6]*Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisboa, Lisboa, Portugal*

**OBJECTIVES:** The use of historical or prospective cohorts of patients retrieved from automated databases can provide different persistence estimates from self-re-