Multiple Sclerosis (MS). The primary purpose of this study was to examine the relationship between patients’ compliance to MS specialty medications and the total health care (pharmacy and medical) costs. METHODS: The study was conducted using a retrospective study design utilizing all MS-related pharmacy and medical claims maintained by a large PBM. Patients who were diagnosed with MS and who had at least one prescription for specialty medications between July-December 2005 were identified and selected for the analysis. Patient’s compliance to specialty medications was assessed in terms of MPR. Patients were categorized into three different groups as—compliant (MPR > 0.8), partially compliant (MPR 0.5–0.8), and non-compliant (MPR < 0.5). All drug costs; all medical non drug costs as well as total health care costs were computed and compared across the three groups using independent t-tests.

RESULTS: A total of 104 patients met the inclusion criteria and were included for the analysis. Compliant group patients had significantly high all drugs cost and significantly lower medical non-drug cost as compared to the non-compliant and partially compliant groups. The total health care costs were found to be comparable and non-significant among the three groups. CONCLUSION: Patients who were compliant to their specialty medications reported higher pharmacy cost and lower medical cost, thereby implying that there exists an inverse relationship between compliance and medical costs.

A TWO-YEAR EVALUATION OF HEALTH OUTCOMES IN OSTEOARTHRITIS PATIENTS AFTER TOTAL KNEE REPLACEMENT

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OBJECTIVE: To evaluate pain, physical functioning, and health-related quality of life (HRQoL) in patients after total knee replacement (TKR) and to identify factors affecting these outcomes. METHODS: This was a two-year non-randomized prospective observational cohort study in knee osteoarthritis (OA) patients undergone who as TKR. Patients were interviewed one week before, six months after, and two years after surgery using a standardized questionnaire including the SF-36, the Oxford Knee Score (OKS), and the Knee Society Clinical Rating Scale. Repeated measures ANOVA was performed to determine which measurements significantly changed over time. Univariate and multiple linear regression analyses were used to identify factors significantly influencing the post-surgery outcomes.

RESULTS: A total of 298 (at baseline), 176 (at 6-months), and 83 (at 2 years) patients were categorized into three different groups as—compliant (MPR > 0.8), partially compliant (MPR 0.5-0.8), and non-compliant (MPR < 0.5). Drug costs; all medical non drug costs as well as total health care costs were computed and compared across the three groups using independent t-tests. RESULTS: A total of 104 patients met the inclusion criteria and were included for the analysis. Compliant group patients had significantly high all drugs cost and significantly lower medical non-drug cost as compared to the non-compliant and partially compliant groups. The total health care costs were found to be comparable and non-significant among the three groups. CONCLUSION: Patients who were compliant to their specialty medications reported higher pharmacy cost and lower medical cost, thereby implying that there exists an inverse relationship between compliance and medical costs.

QUALITY OF LIFE AMONG OUTPATIENTS WITH RHEUMATOID ARTHRITIS IN A REAL-LIFE SETTING IN GERMANY

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OBJECTIVE: To assess quality of life (QoL) of outpatients with rheumatoid arthritis (RA) in a real-life setting in Germany. METHODS: This is a retrospective study analyzing records of patients suffering from RA who were treated within an ambulatory rheumatology specialty. We assessed demographic data, information on medication and additional therapies. QoL was assessed using the Short Form-36 (SF-36). We performed a baseline analysis (t0) followed by an analysis after 3, 6, 12, 18, and 24 months (t3–t24). RESULTS: A total of 636 patients were included in the baseline analysis: 20.3% (n = 129) were male, mean age was 55 years and average disease duration was 5.2 years. 83.3% (n = 530) patients were diagnosed with RA at the first visit (t0), in 16.7% (n = 106) of the cases, the RA was diagnosed subsequently. Longitudinal data were available for 431 patients. On all SF-36 dimensions RA patients scored significantly lower than the general population matched for gender and age (p = 0.05): A sub-group analysis revealed the following significant differences: in bodily pain insurees of the statutory health insurance scored significantly worse than enrollees of private health insurance plans (p < 0.01). No significant differences were observed between female and male RA patients at baseline. QoL was higher at each assessment compared to baseline for all dimensions but Role Emotional and General Health. The longitudinal analysis showed QoL improved in all but one dimension (Role Emotional) over the observation period of 24 months. This analysis is based on the last observation carried forward method. CONCLUSION: RA patients have a significant reduction of QoL compared to the general population. Results indicate that specialist treatment may help to improve QoL.

IMPROVEMENT IN SLEEP QUALITY FROM ABATACEPT TREATMENT IN RHEUMATOID ARTHRITIS PATIENTS

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OBJECTIVE: Patients with rheumatoid arthritis (RA) perceive sleep quality as an important component of their quality of life. Sleep is multi-dimensional and the objective is to investigate what aspects of sleep improve when patients are treated with abatacept. METHODS: We used data from two randomized, double-blind clinical trials of abatacept in patients with active RA in this study: AIM and ATTAIN, in methotrexate and anti-TNF failures respectively. Sleep quality was assessed using the validated Medical Outcomes Study sleep questionnaire (MOS-sleep). The treatment groups were compared on the seven derived MOS-sleep scales: awakened short of breath or with headache, snoring, sleep adequacy, sleep disturbance, somnolence, and sleep problems Index I and II. In addition, sleep duration (in hours) and optimal sleep (yes vs no) based on the MOS-sleep module were compared. Items are scored 0-100 with higher scores indicating more of the attribute under consideration. Since all the attributes for the scale scores are negative, a smaller number is better except for sleep adequacy which is a positive attribute. Optimal sleep is a binary variable with one indicating optimal sleep, so a higher proportion on this variable is better. RESULTS: There was no pertinent difference at baseline in the various items on the MOS...
sleep questionnaire or on the derived MOS sleep scales. Significant improvement in the abatacept group compared to control on sleep adequacy, sleep disturbance, somnolence and both sleep problem indices I and II were found. For both studies, sleep quantity was not significantly different between treatment groups, but optimal sleep significantly improved in the abatacept vs control group: ATTAIN (18% vs –12%, p < 0.0001) and AIM (16% vs 5%, p = 0.0214). CONCLUSION: Treatment with abatacept improves several different aspects of sleep in RA patients. In particular, sleep disturbance and sleep problems given by index II are reduced, and optimal sleep is improved.

**PMS37**  
**ASSESSING THE VALIDITY AND RELIABILITY OF A SIMPLE ACTIVITY PARTICIPATION MEASURE FOR RHEUMATOID ARTHRITIS CLINICAL TRIALS**  
1Bristol-Myers Squibb, Princeton, NJ, USA; 2University of Ottawa, Ottawa, ON, Canada  
**OBJECTIVE:** To examine the validity, reliability, and sensitivity to change of a simple measure of activity participation for rheumatoid arthritis (RA) clinical trials. Joint damage from RA significantly limit patients’ participation of daily work and non-work activities, however, few instruments were available to measure treatment effect on this aspect. **METHODS:** We measured activity participation in two randomized clinical trials of abatacept in active RA patients. Activity participation was assessed by two items: 1) the number of days in the past month a patient was unable to perform usual activities (paid or unpaid work, or any other daily activities), and 2) how often a patient was unable to perform usual activities (paid or unpaid) in the past month. Intra-class correlation coefficient (ICC) was used to assess test-retest reliability, and standardized effect sizes (SES) were calculated to evaluate sensitivity to change. **RESULTS:** In both studies at baseline, patients were limited for 15 days per month in usual activities and the score on activity completion was 3.7. After treatment, patients with EULAR clinical responses of good, moderate, none, gained back 11, 9, and 4 days of activity respectively, and patients who achieved minimal disease activity state gained back 11, 9, and 4 days of activity respectively, and patients with EULAR clinical responses of good, moderate, none, gained back 11, 9, and 4 days of activity respectively, and patients who achieved minimal disease activity state gained back 11, 9, and 4 days of activity respectively. **CONCLUSION:** The simple activity participation measure reflects true changes in patient clinical status and quality of life. It is valid, reliable, and sensitive to change, which suggests it is a suitable outcomes measure for clinical trials.

**PMS38**  
**ESTIMATING WORK PRODUCTIVITY: EFFECTS OF TRAMADOL EXTENDED-RELEASE TREATMENT**  
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**OBJECTIVE:** To estimate work productivity for patients treated with tramadol extended–release (ER) or placebo. **METHODS:** Intent-to-treat patients (18–65 years old) with chronic osteoarthritis pain from a 12-week, randomized, double-blind, placebo-controlled, fixed-dose study and treated with tramadol ER (100–400 mg) or placebo were compared. Work productivity was not assessed within the study, it was estimated using an imputation methodology. This imputation method cross-walks other health measures into Work Limitations Questionnaire (WLQ) scores. The WLQ is a validated questionnaire assessing health-related decrements in job performance and work productivity (“presenteeism”). According to this method, mean change in the Western Ontario and McMaster Universities (WOMAC) Osteoarthritis total index scores were multiplied by the regression coefficients established for the WLQ and WOMAC. Productivity gains were translated to annual US dollars inflated to 2007. **RESULTS:** Baseline characteristics of tramadol ER and placebo groups were comparable. After 12 weeks of treatment, the tramadol ER treated patients significantly improved than placebo (WOMAC score of 23 vs. 16 points, p = 0.002). This 23 points improvement in WOMAC when imputed to WLQ translated into improvement of WLQ time management (8.15%), physical demands (11.78%), mental-interpersonal (5.99%), overall output demands (6.95%) and improvement in work productivity (11.43%). The improvement observed in the tramadol ER patients when aggregated to annual dollars per employee in 2007 ranged from $1201–$7218, was numerically higher than placebo treated patients [$882–$5098]. Sensitivity analyses using other health-measures resulted in similar findings. **CONCLUSION:** Treatment with tramadol ER resulted in significant improvement in pain and physical function, when imputed to WLQ corresponded to productivity improvement.

**PMS39**  
**LOSS OF EMPLOYABLE LIFE-YEARS IN PATIENTS WITH RHEUMATOID ARTHRITIS: A PRELIMINARY ANALYSIS USING MARKOV MODEL**  
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**OBJECTIVE:** To estimate loss of employable life-years over time in patients with rheumatoid arthritis (RA). **METHODS:** We used a Markov model to estimate employable life-years using data from ASPIRE, a randomized clinical trial comparing the efficacy and safety of infliximab + methotrexate (MTX) (IFX group) and placebo + MTX (MTX group) among early RA patients. Employability state was defined as ‘unemployable’ if patients were unemployed and felt unable to work even if a job was available or ‘employable’ if patients were employed or felt well enough to work if a job were available. The one-year transition probability of employability was estimated using a logistic regression model, and loss of employable life-years was estimated using a two-state Markov model. **RESULTS:** For a patient at age 45 years, 31.4 % of female and 29.7% of male were unemployable using the regression model. For patients starting at age 45 and employable, the probability of remaining employable after one-year of treatment was 0.928 in males and 0.905 in females in the IFX group, and 0.899 in males and 0.867 in females in the MTX groups, respectively. For patients unemployed, the probability to be employable after one-year treatment was 0.481 in males and 0.405 in females in the IFX groups, and 0.390 in males and 0.319 in females in the MTX groups, respectively. In the Markov model, after 10 years at age 55, 18.5% of females and 14.1% of males in the IFX groups, and 30.7% of females and 24.2% of males in the MTX groups will be unemployable. On average, 0.99 employable life-years will be saved per patient over 10 years in IFX-treated patients compared to MTX-treated patients. **CONCLUSION:** This analysis presents a new method to estimate employable life-years using a Markov model, and