model were obtained from published clinical trials and were complemented with Mexican expert opinion surveys. Effectiveness measure was the number of patients with articular pain controlled without adverse events (peptic ulcers, gastrointestinal bleeding, and others). The analysis was conducted from the healthcare payer’s perspective. Resource use and costs were obtained from hospital records and Mexican official databases. Threshold and probabilistic sensitivity analysis was performed and acceptability curves were constructed. RESULTS: The model indicates that the use of celecoxib could lead to the avoidance of a significant number of adverse events associated to NSAIDs and acetaminophen. Celecoxib showed on the six-months period similar (p = 0.52) expected costs per patient (US$609.8) than the treatment with NSAIDs (US$615.6) and lower costs (p < 0.01) compared with acetaminophen (US$656.7). On the other hand, celecoxib was associated with higher effectiveness (371 patients, CI 95% 255–452) followed by NSAIDs and acetaminophen (274 and 270 patients, respectively). Results were robust to Monte Carlo first order sensitivity analysis. Acceptability curves showed the same results with a mean of 44.5% of certainty. CONCLUSIONS: Despite its higher cost in the Mexican market, celecoxib was cost—effective for the management of articular pain in patients with osteoarthritis.

**PAR10**

**COST-EFFECTIVENESS OF RITUXIMAB THERAPY FOR RHEUMATOID ARTHRITIS: A PAN-EUROPEAN ANALYSIS**

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**OBJECTIVES:** Clinical studies such as REFLEX established the efficacy of rituximab (RTX) in patients with rheumatoid arthritis (RA) who have had an inadequate response to anti-TNF therapy. This analysis evaluated the cost-effectiveness of treating such patients with RTX across different EU countries.

**METHODS:** Our cost-effectiveness model assessed RA treatments in real-life settings based on practices in Germany, Spain, France, and the UK. The model is based on ACR response rates for RTX and current treatment options (adjusted for the different study populations), complemented with epidemiological data from observational studies. It simulates a cohort of 10,000 patients who have failed to respond to anti-TNF therapy. Baseline patient characteristics were from the REFLEX study. For each country, the cost-effectiveness of providing RTX either as an additional treatment or an alternative to a second-line biologic DMARD was examined using a treatment duration for biological therapy (in combination with methotrexate) of up to 4.25 years. QALYs were mapped from a disease severity measure (HAQ score) and resource utilization data were UK or German registry data. The model included costs related to drug therapy (including administration and monitoring), palliative care and reduced productivity (indirect costs) (2004-5 Euros [€]). Costs and benefits were discounted at 3.5% per annum. RESULTS: Using RTX resulted in lower average annual cost compared to any of the anti-TNF treatments. The cost per QALY (direct medical cost) was in the range of €18,000 to €23,000 across all health care systems. When RTX is replacing a treatment option in the current treatment sequence, average annual treatment costs can be reduced. CONCLUSIONS: This pan-European analysis shows that adding RTX to the therapeutic armamentarium for patients with RA who respond inadequately to anti-TNF therapy is highly cost-effective, with an incremental cost per QALY gained that is favourable compared to other disease-modifying, biological therapies.

**PAR11**

**COST-EFFECTIVENESS ANALYSIS FOR TREATMENTS IN ANKYLOSING SPONDYLITIS**

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**OBJECTIVE:** To perform a cost-effectiveness analysis on TNF- alpha inhibitors (Anti-TNFα) for treatment of Ankylosing Spondylitis (AS) in comparison to standard therapy alone from a societal perspective. **METHODS:** Decision-tree analysis was performed to estimate the incremental cost-effectiveness ratio (ICER) for Anti-TNFα treatments in AS patients. All model parameters (e.g. cost, response rates, EQ-3D derived utility values, etc.) were obtained from published literature and/or expert opinion. Total cost included cost relating to illness, drug, drug-related side effects, chest radiography for tuberculosis (TB) screening, TB treatment for TB+ patients, and annual drug monitoring. Cost of Illness (COI) included direct costs (e.g. total ambulatory/hospital care, diagnostic testing, assistive devices, travel to visits, nonallopatic treatments, etc) and indirect costs (e.g. short-term leave, paid work disability, etc.). Informal caregiver cost was not included. Cost was linked to BASDAI and BASFI scores reported in the Kobelt study by performing OLS regression. The two resulting models (BASDAIUn and BASFIUn) with regression equations: log COST = 3.168 + 0.145455 * BASFI and log COST = 3.594667 + 0.049879 * BASDAI, respectively, were then used to estimate COI. Univariate Sensitivity Analysis was conducted to estimate percent changes in ICER from the base-case using parameters such as response rates, discount rates, and discontinued rates. QALYs and cost were discounted at 3%. RESULTS: The BASDAIUn model revealed an ICER of €46,990. Meanwhile, the BASFIUn model had an ICER of €38,636. In the UA analysis, the ICERS in the BASDAIUn and BASFIUn models varied from €36,068 to €66,472 and €22,766 to €66,539, respectively. Both models were sensitive to changes in response rates. However, overall, the ASDAIcost model was more robust than the BASFIcost model. CONCLUSIONS: In the UK, the threshold level recommended by NICE for treatment was about £30,000/QALY. This translates into US$53,589. Using the NICE threshold, Anti-TNFα treatment for AS is cost-effective from the societal perspective.

**PAR12**

**A COST-EFFICACY ANALYSIS MODEL FOR ANTI-TNF AGENTS IN PSORIATIC ARTHRITIS**

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**OBJECTIVES:** To provide a cost-efficacy (CE) analysis from a third-party payer perspective of etanercept and infliximab, compared to placebo in psoriatic arthritis patients. **METHODS:** An Excel based CE model was developed to estimate number needed to treat (NNT) and cost per successful outcome using published, 24-week CE data for etanercept and infliximab. Dosing information was obtained from product labels. Plan-specific drug costs, and administration costs were utilized in the model. The cost of adverse events was not included in the model. The NNT and cost per successful outcome were estimated using the American College of Rheumatology scores (ACR 20, 50, 70), the Psoriasis Area and Severity Index scores (PASI 50, 75, 90), and a combination of ACR and PASI scores. **RESULTS:** Based on the ACR scores, the NNT ranges were 2.6 to 4.0 for infliximab and 2.7 to 12.5 for etanercept. Using the PASI score, the NNT ranges were 1.5 to 2.6 for infliximab and 3.5 to 33.3 for...
etanercept. For the combined ACR & PASI scores, the NNT ranges were 2.3 to 7.0 for infliximab and 2.9 to 33.3 for etanercept. Using average wholesale price minus 15% (AWP−15%), the cost per successful outcome based on the ACR score ranged from $54,235 to $82,435 for infliximab and from $43,000 to $198,860 for etanercept. For PASI scores, the cost per successful outcome ranged from $30,900 to $53,390 for infliximab and from $54,860 to $530,280 for etanercept. For the combined ACR & PASI scores, the cost per successful outcome ranged from $46,280 to $144,220 for infliximab and from $46,790 to $530,280 for etanercept. CONCLUSIONS: This Excel based CE model enables payers to perform CE analyses for anti-TNF agents used in the treatment of psoriatic arthritis, utilizing plan-specific cost and utilization data.

PAR13

A PROSPECTIVE STUDY COMPARING DRUG UTILIZATION PATTERNS AND COST OF TREATMENT OF PATIENTS FOR RHEUMATOID ARTHRITIS IN KERALA, INDIA

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OBJECTIVES: This prospective, observational, study evaluated the drug utilization patterns and cost of treatment of patients treated for rheumatoid arthritis at a government institution versus a private institution in Kerala, India. METHODS: Patients with a diagnosis of rheumatoid arthritis were enrolled into the study and were followed for a period of six months. Data regarding demographics, clinical outcome, laboratory results, drug utilizations, and cost was collected. The cost of drug therapy for each patient was calculated utilizing the Current Index of Medical Specialties 2004. Nominal data was analyzed using Chi square and Fisher’s exact test and logistic regression univariate analysis was conducted to determine the association between disease improvement and treatment factors. RESULTS: One hundred thirty-one patients were enrolled in the study, 96 at the government institution and 35 at the private institution. The mean age was 42.61 and 80% of the patients were female. The most frequently utilized DMARD was methotrexate, 66% for the government institution and 80% for the private institution. The most common DMARD combination therapy was methotrexate plus hydroxychloroquine (62.96%). Compliance was 68.75% in the government patients versus 94.28% in the private patients (P = 0.003). Logistic regression results indicated that increased WBC (p = 0.032), ESR (0.003), and COX-2 usage (p = 0.039) was associated with poorer clinical outcome, while methotrexate use (p = 0.029) and physiotherapy (p = 0.041) was associated with improved outcome. The clinical outcome was not significantly associated with the site of care. The average cost of care was Rs. 420.13 per month at the government institution versus Rs. 713.14 per month at the private institution, and 16.1% of the total noncompliance was due to financial constraints. CONCLUSION: The treatment of rheumatoid arthritis is best managed with a protocol that includes methotrexate. While financial constraints affect the compliance rate, the site of care did not have any impact on clinical outcome.

ARTHRITIS—Health Care Use and Policy Studies

PAR14

WITHDRAWAL OF COX-2 INHIBITOR ROFECOXIB AND VALDECOXIB: IMPACT ON NSAID AND PPI PRESCRIPTIONS AND EXPENDITURES

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OBJECTIVES: Cyclo-oxygenase (COX)-2 inhibitor rofecoxib and valdecoxib were withdrawn from the market because of their association with heart problems. There is a lack of information on the impacts of COX-2 withdrawal on the utilization of related drug classes. The objective is to evaluate to what extent prescriptions and expenditures of non-selective non-steroidal anti-inflammatory drugs (NSAIDs) and proton pump inhibitors (PPIs) changed after the removal of two COX-2 drugs. METHODS: Prescription records from January 1, 2004 through November 30, 2005 were obtained from pharmacy claims database in a pharmacy benefit management (PBM) organization. Clients continuously enrolled in the PBM but not enrolled in COX-2, PPI, or Prilosec OTC Step Care programs during the study period were included. Number of prescriptions per thousand eligible members per month, per member per month (PMPM) total costs for non-selective NSAIDs and PPIs were calculated and compared between the pre withdrawal (January 1, 2004 through September 30, 2004) and the post withdrawal (May 1, 2005 through November 30, 2005). RESULTS: This study included 536,569 patients. After the withdrawal of the two COX-2 inhibitors, the average non-selective NSAID prescriptions per thousand eligible members per month and PMPM total costs increased by 37.72% (from 13.94 to 19.20) and 75.56% (from $0.52 to $0.91). PPI prescriptions and PMPM total costs increased by 7.21% (from 25.73 to 27.58) and 12.32% (from $4.38 to $4.92). In contrast, the average prescriptions and PMPM total costs for COX-2 inhibitors dropped by 70.99% (from 16.52 to 4.79) and 66.16% (from $2.07 to $0.70). CONCLUSIONS: After the withdrawal of COX-2 inhibitor rofecoxib and valdecoxib, there has been a large increase in non-selective NSAID prescriptions and only slight increase of PPIs. Given the safety concerns with the NSAIDs, further studies are warranted regarding the health outcomes associated with the increased use of non-selective NSAIDs.

ARTHRITIS—Methods and Concepts

PAR15

PRELIMINARY INVESTIGATION OF THE DISCRIMINATORY CAPACITY OF MEASURES OF LOW INTENSITY SYMPTOM STATE-ATTAINMENT USING THE WOMAC PAIN SUBSCALE SCORE IN PATIENTS TREATED WITH HYLAN G-F 20 FOR KNEE OSTEOARTHRITIS

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OBJECTIVES: Different pain thresholds were investigated, using the WOMAC Pain Scale (WOMAC-P) to determine if they could differentiate between treatment groups (hylan G-F 20 vs appropriate care) at low and very low levels of state-attainment in patients with knee osteoarthritis. A method, termed the BLISS (Bellamy et al Low Intensity Symptom State-attainment) Index, for analyzing Osteoarthritis (OA) knee clinical trials data, was proposed. METHODS: Five analyses were performed: time to first BLISS day, BLISS days over 12 months, patients with a BLISS response at month 12, patients with a BLISS response at any time, and number of BLISS periods over 12 months. For each analysis, five levels of WOMAC-P were examined: ≤5 Normalized Units (NU), ≤10, ≤15, ≤20 and ≤25 (higher = more pain). RESULTS: More patients in the hylan G-F 20 group achieved BLISS states in all five analyses. These differences were statistically significant for all pain threshold levels except ≤5 NU. CON-