lowest for etanercept monotherapy ($22,487) and highest with the combination of infliximab and methotrexate ($24,807). For monotherapy and combination therapy regimens, etanercept was the least expensive option and most effective option compared to other treatments, although differences in cost and effectiveness across treatments were relatively small. After eliminating dominated options, etanercept + MTX therapy increased the probability of achieving an ACR 20 by 7% points and increased total costs by $199 over etanercept monotherapy agent, resulting in an incremental cost-effectiveness ratio of $2843 per additional response. The incremental cost-effectiveness of combination therapy compared to monotherapy was not markedly altered in sensitivity analyses. CONCLUSION: Findings from this study suggest that there are relatively small differences in cost and effectiveness across biological response modifiers. Combination therapy with biological response modifiers appears to provide an increase in response compared to methotrexate alone, but at a cost. Whether combination therapy can be considered cost-effective depends on the value attached to achieving ACR response.

OBJECTIVE: Evaluate the cost-effectiveness of infliximab compared to adalimumab in early arthritis from an institutional perspective in Mexico.

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METHODS: To compare the cost and effectiveness, a decision tree model was structured with a temporary horizon of 54 weeks. Only costs per drug were considered for this analysis, as the rest of the costs are similar for institutional buyers. Comparators: 3 mg/kg i.v. infliximab + 15 mg oral metotrexate (MTX) weekly. Infliximab is administered at weeks 0, 2 and 6, and every 8 weeks thereafter. Adalimumab subcutaneous injections of 40 mg every two weeks + 15 mg weekly of metotrexate (oral). The effectiveness measures considered were the percentage of patients achieving the ACR 50 and 70 response levels and were obtained from international literature. Percentage of patients achieving the ACR 50 and 70 levels with each treatment: 78% and 67% for infliximab + metotrexate and 62% and 49% respectively for the combination of adalimumab plus metotrexate. Costs were estimated using prices of 2007 and are expressed in United States dollars (exchange rate of 10.93 pesos/1 USD).

RESULTS: The expected annual treatment cost is $15,720.80 for infliximab and $15,896.20 for adalimumab. The cost-effectiveness ratios for ACR 50 and 70 per drug type are: $20,154.80 and $23,463.90 respectively for infliximab; and $15,720.80 and $15,896.20 respectively for adalimumab. The incremental cost-effectiveness ratio for infliximab vs. adalimumab is -$1096.20 for ACR 50 and $974.40 for ACR 70. The sensitivity analysis showed that these results are sensitive to drug price variations. CONCLUSION: Infliximab is a cost-effective alternative compared to adalimumab for the treatment of early arthritis from an institutional perspective in Mexico.

PMS15
COST-EFFECTIVENESS OF THE TREATMENT FOR EARLY RHEUMATOID ARTHRITIS IN MEXICO: INFLIXIMAB VS. ADA-LUMUMAB
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OBJECTIVE: Evaluate the cost-effectiveness of infliximab compared to adalimumab in early arthritis from an institutional perspective.

METHODS: To compare the cost and effectiveness, a decision tree model was structured with a temporary horizon of 54 weeks. Only costs per drug were considered for this analysis, as the rest of the costs are similar for institutional buyers. Comparators: 3 mg/kg i.v. infliximab + 15 mg oral metotrexate (MTX) weekly. Infliximab is administered at weeks 0, 2 and 6, and every 8 weeks thereafter. Adalimumab subcutaneous injections of 40 mg every two weeks + 15 mg weekly of metotrexate (oral). The effectiveness measures considered were the percentage of patients achieving the ACR 50 and 70 response levels and were obtained from international literature. Percentage of patients achieving the ACR 50 and 70 levels with each treatment: 78% and 67% for infliximab + metotrexate and 62% and 49% respectively for the combination of adalimumab plus metotrexate. Costs were estimated using prices of 2007 and are expressed in United States dollars (exchange rate of 10.93 pesos/1 USD).

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PMS16
ECONOMIC EVALUATION OF MONTHLY IBANDRONATE VS WEEKLY ALENDRONATE TO PREVENT OSTEOPOROTIC HIP FRACTURES IN MEXICAN WOMEN AGED FIFTY AND OLDER
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OBJECTIVE: To evaluate from a Mexican public health care institution perspective, the efficiency for using monthly ibandronate for prevention of osteoporotic hip fractures in Mexican women aged fifty and older.

METHODS: A hypothetical intervention to compare ibandronate monthly versus alendronate weekly to prevent osteoporotic hip fractures in Mexican fifty years and older women was modeled. The model considers both efficacy reported to each drug and the effectiveness for their massive use based on the adherence to the therapy reported. Taking into account both groups of women, those that completed treatment and those that abandoned it, the model estimates the total number of hip fractures possibly avoided for each alternative and the investment required, only in terms of direct cost. Considering that in Mexico there is not a defined cost-effectiveness threshold, the attention cost for hip fracture was proposed like this. RESULTS: The attention cost for a hip fracture in Mexico is reported at approximately USD$5100. Although the model estimated a higher total direct cost for using ibandronate (due to its higher price of adherence) the estimated ICER was USD$4734; this means the cost for additional hip fracture avoided compared to alendronate. CONCLUSION: The use of monthly ibandronate to treat osteoporosis and prevent osteoporotic hip fractures is a cost-effective alternative. Although the public health care institutions could be spending a maximum amount near to actual cost for hip attention, it is possible to obtain additional savings if the indirect costs of hip fractures and their associated deaths are considered.

PMS17
LONGITUDINAL ESTIMATES AND COST-EFFECTIVENESS ANALYSIS OF ANTI-RESORPTIVE AGENTS FOR GLUCOCORTICOID-INDUCED OSTEOPOROSIS AND FRACTURES BASED ON US NATIONAL SURVEYS
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OBJECTIVE: Long-term glucocorticoid use may lead to glucocorticoid-induced osteoporosis and fractures which require proper management. This study aims to aid decision-making on preventive use of anti-resorptive agents for female long-term oral glucocorticoid tablet users. METHODS: A retrospective analysis of 1996–2004 Medical Expenditure Panel Survey data was conducted to evaluate “actual use” outcomes. Direct medical costs (in 2006 dollars) including selected adverse events related to anti-resorptive agents were evaluated. Logistic analysis was performed to estimate odds ratios of new fractures and osteoporosis in treatment groups compared to the control group. Markov modeling with second-order Monte Carlo simulations was used to yield long-term estimates of these outcomes and address parameter uncertainty. RESULTS: Of 1692 qualified female long-term glucocorticoid users (representing 2.65% of the female non-institutionalized U.S. population; average age = 49.8 years; average prednisone-equivalent dose = 10.7 mg/day; average therapy length = 215 days; white = 85.6%), 29.9% reported use of any anti-resorptive agent; of those, 76.5% used hormone replacement therapy (HRT) only, 12.1% used bisphosphonates only, 2% used calcitonin only, 1.6% used raloxifene only and 7.8% used more than one anti-resorptive agent. Compared to those who did not use any agent, 2% used calcitonin only, 1.6% used raloxifene only and 7.8% used more than one anti-resorptive agent. Compared to the controls, the estimated 10-year/lifetime incremental cost-effectiveness ratios (ICERs; cost per fracture avoided) are $2,250/$7,776 for HRT, $10,149/$28,078 for bisphosphonates, $27,891/$46,102 for raloxifene and $60,862/$61,660 for calcitonin in hypothetical 50-year-old female glucocorticoid users. By using the cost-effectiveness acceptability curve, different decision makers may find the corresponding range of probabilities that consider the public health care institutions could be spending a maximum amount near to actual cost for hip attention, it is possible to obtain additional savings if the indirect costs of hip fractures and their associated deaths are considered.
CONCLUSION: HRT is the most cost-effective option, followed by bisphosphonates, for 50-year-old hypothetical females, but some assumptions and limitations apply (including small sample sizes for the calcitonin and raloxifene groups, and a likely selection bias in that bisphosphonate users are more likely to report longer duration of glucocorticoid therapy). Because few guidelines included cost-effectiveness information, consideration of these results may facilitate better management of glucocorticoid-induced osteoporosis.

PMS18

COST-EFFECTIVENESS OF ABATACEPT IN PATIENTS WITH MODERATELY TO SEVERELY ACTIVE RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE TO METHOTREXATE IN BRAZIL

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OBJECTIVE: Abatacept is a new selective co-stimulation modulator recently approved in Brazil for the treatment of patients with moderately to severely active rheumatoid arthritis (RA) and inadequate response to one or more disease-modifying anti-rheumatic drugs (DMARDs). We estimated the cost-effectiveness of Abatacept in patients with inadequate response to Methotrexate.

METHODS: We developed a Markov simulation model to depict progression of functional disability over time in patients with moderately to severely active RA and inadequate response to MTX. Functional disability was expressed in terms of the Health Assessment Questionnaire Disability Index (HAQ-DI). Patients were assumed to receive weekly pulse MTX alone or weekly pulse MTX plus abatacept administered on days 1, 14, and 29, and every 4 weeks thereafter. Costs with drug acquisition, administration and monitoring were considered. Estimates used data from a Phase III clinical trial of abatacept in patients with inadequate response to MTX (AIM) plus secondary data sources. Cost-effectiveness of abatacept was expressed in terms of the incremental cost (2006 Brazil R$) per quality-adjusted life-year (QALY) gained versus MTX therapy alone; lifetime horizons was employed in the analyses. Costs and health effects were discounted at 3% annually.

RESULTS: Over the lifetime, abatacept therapy was estimated to yield an average of 1.61 additional QALYs per patient (vs. MTX alone) at a mean incremental cost of R$146,095/QALY (US$83,483, US$1 = R$1.75). CONCLUSION: Abatacept presented the best cost-effectiveness ratio vis-à-vis etanercept, adalimumab, and infliximab, with its incremental costs of R$202.581/QALY, R$189.100/QALY and R$236.479/QALY, respectively vs. Methotrexate alone.

PMS19

COST MINIMIZATION AND BUDGET IMPACT ANALYSIS OF RITUXIMAB VERSUS INFliximab, ADALIMUMAB, ETANERCEPT AND ABATACEPT IN RHEUMATOID ARTHRITIS FROM A PAYER PERSPECTIVE IN BRAZIL

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OBJECTIVE: Rituximab is a monoclonal antibody with demonstrated efficacy (REFLEX trial) in rheumatoid arthritis patients who responded inadequately to anti-TNF drugs (Cohen et al. 2006). The study assessed the total cost of rituximab therapy in comparison with infliximab, adalimumab, etanercept and abatacept under a private payer perspective in Brazil. A budget impact analysis was performed. METHODS: This study assumed the same efficacy for all drugs, since there has not been any head-to-head trial available until now, although indirect comparisons show higher ACR response rates for rituximab. Direct annual medical costs for biological drugs, IV administration, weekly methotrexate (MTX) and routine exams were taken from a panel of Brazilian rheumatologists. Base case dosages considered were: rituximab (2 g every 8 months), abatacept (750 mg at weeks 0, 2, 4 and then every 4 weeks), infliximab (4 mg/kg at weeks 0, 2, 6 and every 8 weeks), adalimumab (40 mg every other week) and etanercept (50 mg every week). Local administration costs were obtained from Scheinberg et al. 2005. Costs were reported in 2007 Brazilian Reais and discounted at a 5% rate in the BIA. Therapies were evaluated using a 5-year horizon. In order to assess uncertainty, one and two-way sensitivity analyses were performed.

RESULTS: In the base case scenario, rituximab therapy resulted in a total annual cost of R$46,388 per patient. Total annual costs per patient for the comparators were: R$79,394 for infliximab, R$90,831 for adalimumab, R$120,351 for etanercept and R$77,118 for abatacept. In the BIA, rituximab therapy resulted in total savings of R$94,201,413 in 5 years considering the population in the private health care system only. Results were sensitive to dosage schedule (rituximab, infliximab and abatacept) and drug costs. CONCLUSION: Results of this study suggest that therapy with rituximab is a dominant alternative for patients with rheumatoid arthritis in the Brazilian private health care system.

PMS20

THE ECONOMIC CONSEQUENCES OF RHEUMATOID ARTHRITIS: AN ANALYSIS OF THE MEDICAL EXPENDITURE PANEL SURVEY (MEPS)

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OBJECTIVE: To assess the direct and indirect economic consequences of rheumatoid arthritis (RA) using real-world data.

METHODS: Medical Expenditure Panel Survey (MEPS) 2004 data was used to identify non-institutionalized U.S. persons with RA. MEPS is a comprehensive survey of approximately 35,000 individuals consisting of detailed health care resource use expenditures by payer, employment and income, insurance details and quality of life (QoL) information. These data are novel because they are nationally representative, capture the elderly and their expenditure better than managed care databases, and contain direct and indirect costs and QoL measures in the same population. Multiple linear and semi-log regressions were applied to estimate the total annual health care expenditure and income loss associated with RA. Covariates in expenditure equations included demography, comorbidities and overall health status. Semi-log regression for income rendered the distribution of income symmetric. Covariates in the income equations included demography, comorbidities, education, occupation and health status.

RESULTS: A total of 136 patients with RA were identified in the data; 76% were women, and 56% were 41–64 years of age. Total annual incremental expenditure associated with RA was $4422 (P < 0.01) with adjusted R² of 0.16 in the linear regression and 0.41 in the semi-log regression. 14% of those expenses were paid by the individual or their family, 28% by Medicare, 39% by private insurance and 14% by Medicaid. As expected, deterioration in overall health status increased health care expenditures monotonically. In the income equation (adjusted R² = 0.39), persons with RA earned $3352 less annually (P = 0.03) than the mean income of $26,594 consistent with the US Census Bureau, translating into a 13% decrease. Income increased with education and with improved overall health status. CONCLUSION: Even when controlling for other factors,