fracture incidence. For example, the published incidence for spinal fractures for males age 80-84 is reported as 3.58/1,000 patient-years. When incidence is used as the risk factor, our model predicted 6.89 spinal fractures/1,000 patient-years. After adjustment, the model predicted the fracture incidence accurately as 3.45/1,000 patient-years. CONCLUSIONS: The fracture incidence in non-risk patients was based on the US risk level for health care expenditures associated with osteoporosis in the United States. This method based on the fracture incidence from the study population, the risk factor prevalence, and the relative risk increase associated with the risk factor.

PMS39 THE COST-EFFECTIVENESS OF ALTERNATIVE TREATMENT SEQUENCES IN RHEUMATOID ARTHRITIS
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OBJECTIVES: Many patients with rheumatoid arthritis (RA) fail to respond adequately to conventional disease-modifying antirheumatic drugs (cDMARDs). The use of biologics (bDMARDs) has improved outcomes, and multiple guidelines National Institute for Health and Care Excellence (NICE) govern their prescription in England and Wales. The study aimed to evaluate the cost-effectiveness of alternative bDMARDs versus cDMARDs in patients who have failed to respond to at least two bDMARDs. METHODS: A discrete event simulation model was used to explore the cost-effectiveness of bDMARDs in combination with methotrexate versus cDMARDs. Populations of interest were patients with severe and moderate to severe RA who failed to respond to at least two bDMARDs including methotrexate (cDMARD-BM) and those with moderate to severe RA without methotrexate (cDMARD-IR). In the severe population, eight alternative bDMARD strategies were compared. In 2006, TNFα inhibitors were considered among the first-line bDMARD strategy compared against a cDMARD strategy. Strategies evaluated differed by the therapy with which the strategy began (a bDMARD or cDMARD) and whether or not baseline were based on current NICE guidance. The perspective was that of the UK National Health Service and Personal Social Services. The main outcome was the incremental cost-effectiveness ratio (ICER, expressed as cost per quality-adjusted life years (QALYs) gained). In a sensitivity analysis, we examined 50,100 patients with RA at the threshold of £30,000. CONCLUSIONS: Based on the results of this analysis, a treatment strategy beginning with etanercept was considered to be the most cost-effective in patients with severe and moderate to severe RA who failed to respond to at least two conventional DMARDs.

PMS40 IMPACT OF PRICE REGULATION OF BIOLOGIC THERAPIES FOR RHEUMATOID ARTHRITIS IN COLOMBIA – A COST MINIMIZATION ANALYSIS
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OBJECTIVES: Following a recent price regulation for biopharmaceutical products in Colombia, we determine the impact on the cost of treatment with biologic therapies for rheumatoid arthritis in patients who failed to respond to oral DMARDs. METHODS: Current guidelines and evidence suggest similar efficacy and safety of TNFα inhibitors. We used a decision analytic model for osteoarthritis in Colombia for the treatment of rheumatoid arthritis following DMARD failure: abatacept, adalimumab, certolizumab, etanercept, golimumab, infliximab and tocilizumab. We compared the annual direct medical costs (including drug costs, administration and monitoring) for intravenous (IV) and subcutaneous (SC) injections of these biologics. Dosages were determined based on the approved product labels and the average weight (62 Kg) for a cohort of 275 patients with rheumatoid arthritis from a private institution in Bogota, Colombia. Costs were calculated using the data from the most current price regulation guidance from the Ministry of Health (Circular 04-105/2013) and official sources for payments of treatments and procedures (SISMED). Sensitivity analyses were performed using different dosages and patients’ weight. RESULTS: Direct annual cost of treatment with biologics was higher in the first year than in subsequent years, except for tocilizumab, etanercept, adalimumab and golimumab which do not need additional dosages in the first year. Abatacept, both IV and SC, consistently showed the lowest direct medical cost after 3 years. The additional cost of treatment with other biologic therapies compared to abatacept ranged from 11% to 48% after 3 years. Despite having additional costs of administration, IV biologics had lower total direct medical cost compared to SC, mainly due to higher cost per dosage of the drugs. CONCLUSIONS: Under the current price regulation for biologics in Colombia, the cost of treatment for rheumatoid arthritis favours the use of abatacept as the first line biological after DMARD failure.

PMS41 ECONOMIC EVALUATION OF TOFACITINIB COMPARED WITH BIOLOGICAL THERAPIES AS INITIAL THERAPY FOLLOWING FAILURE TO METHOTREXATE IN ADULTS WITH RHEUMATOID ARTHRITIS IN COLOMBIA
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OBJECTIVES: To compare, from the Colombian health care system perspective, both costs and effectiveness of tofacitinib with biological therapy as initial treatment in adults with rheumatoid arthritis after failure to methotrexate. METHODS: We used an Markov model, a decision analytic simulation model to compare, with different time horizons (1, 2, 3, 5, and 10 years), cohorts of patients with tofacitinib as initial therapy compared with abatacept, adalimumab, certolizumab, etanercept, golimumab or infliximab. All the patients failed receive 3 lines of treatment with methotrexate. The characteristics of the patients included: age, weight, initial HAQ score, and clinical response to short and long term treatment, based on all available randomized controlled trials. RESULTS: In 2012 Colombian pesos (1 US$ = COP$1800) were used to perform the analysis, current costs in Colombia, for the national health care system, the sequence initiating with tofacitinib was a cost-saving alternative compared with biological therapy as initial therapy resulting in at least the same average effectiveness in all the different time horizons considered.

PMS42 COST-EFFECTIVENESS OF ADAлимUMAB FOR RHEUMATOID ARTHRITIS IN GERMANY
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OBJECTIVES: Rheumatoid Arthritis (RA) can be treated with TNFα inhibitors after the failure of conventional disease-modifying antirheumatic drugs like methotrexate. The percentage of German patients treated with TNFα inhibitors has been rising from 2% in 2000 to 20% in 2008. In 2012, adalimumab was the best selling drug in the German statutory health insurance system with net expenditure of 581 m\text{€}. We aim to analyze the cost-effectiveness of adalimumab for the treatment of RA in Germany. METHODS: We set up a Markov Chain Monte Carlo lifetime model to simulate 10,000 hypothetical patients. Initially, patients can achieve one of three responses according to American College of Rheumatology criteria or fail the therapy. Each response is associated with an initial improvement in functional status. In each cycle, treatment might be discontinued due to loss of efficacy or adverse events. RESULTS: In the base case, patients gain 2.64 quality-adjusted life years (QALYs) with methotrexate monotherapy and 6.25 QALYs if adalimumab combination therapy is added to methotrexate therapy. The incremental cost-effectiveness ratio (ICUR) is £32,210 per QALY gained. Our analysis shows that cost-effectiveness analysis of drugs for chronic diseases need to consider indirect costs and need to take a lifetime modeling perspective.

PMS43 HEALTH CARE EXPENDITURES ASSOCIATED WITH DEPRESSION AMONG INDIVIDUALS WITH OSTEOARTHRITIS: POST-REGRESSION LINEAR DISCRIMINANT FUNCTION APPROACH
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OBJECTIVES: With no co-occurrence with osteoarthritis being a potential way to control for the health care expenditures associated with poor health outcomes and high economic burden. The objective was to examine the contributions of the factors to total health care expenditures associated with depression among those with osteoarthritis using a post-regression linear discriminant function approach. METHODS: Data were derived from the 2010 Medical Expenditure Panel Survey (MEPS) and self-reported osteoarthritis and depression were identified. Chi-square tests and ordinal least square regressions (OLS) on log-transformed expenditures were used to determine the association between depression status and health care expenditures after controlling for predisposing (gender, race, age), enabling (marital status, education, employment, poverty status, insurance coverage, lifestyle (Body-Mass index, exercise, and smoking status), and external environment factors (metro versus non-metro). Post-regression linear decomposition technique was used to estimate the relative contribution of individual level variables to the total expenditures associated with depression and osteoarthritis compared to those without depression. RESULTS: Among individuals with osteoarthritis 20.6% reported having depression. The average total health care expenditures were $13,684 for those with depression compared to $9,284 among those without depression. OLS regression on log-transformed total health care expenditures revealed that those with depression had 38.8% greater health care expenditures ($235,531). The OLS regression on total cost is 15,728 (9,274 after deducting taxes and rebates). ICURs further improve for younger baseline age. Limiting the simulation time to 5 or 10 years increases ICURs. CONCLUSIONS: Adequate data on costs and impact of the cost of living on the cost-effectiveness analysis of drugs for chronic diseases need to consider indirect costs and need to take a lifetime modeling perspective.

PMS44 RESOURCE USE RELATED TO VERTEBRAL FRACTURES BASED ON DATA FROM ICRUS
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OBJECTIVES: To compare, from the Swedish healthcare system perspective, both costs and effectiveness of tofacitinib with biological therapy as initial treatment in adults with rheumatoid arthritis after failure to methotrexate. METHODS: We used an Markov model, a decision analytic simulation model to compare, with different time horizons (1, 2, 3, 5, and 10 years), cohorts of patients with tofacitinib as initial therapy compared with abatacept, adalimumab, certolizumab, etanercept, golimumab or infliximab. All the patients failed receive 3 lines of treatment with methotrexate. The characteristics of the patients included: age, weight, initial HAQ score, and clinical response to short and long term treatment, based on all available randomized controlled trials. RESULTS: In 2012 Colombian pesos (1 US$ = COP$1800) were used to perform the analysis, current costs in Colombia, for the national health care system, the sequence initiating with tofacitinib was a cost-saving alternative compared with biological therapy as initial therapy resulting in at least the same average effectiveness in all the different time horizons considered.