fracture incidence. For example, the published incidence_pop for spinal fractures for males age 80-94 is reported as 3.5/1,000 patient-years. When incidence_pop is used as incidence_no_risk, 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, the baseline incidence used in the model, can be calculated using 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.

PMS9 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 the first-line treatment and require a failure to methotrexate (MTX) with the initiation of biological disease-modifying antirheumatic drugs (bDMARDs). Biologic disease-modifying antirheumatic drugs (bDMARDs) have improved outcomes, and multiple guidelines National Institute for Health and Care Excellence (NICE) govern their prescription in England and Wales. The study aim was to evaluate the cost-effectiveness and current costs in Colombia, for the national health care system, the sequence of biological therapy in the first year, with equivalent or slightly better QALY gain (0.62 vs. 0.61). Cost saving and utility gained were maintained, and dominance was attained in more than 50% of Monte Carlo trials in the different time horizons and against the bDMARD strategy. The ICUR based on total cost in the first year was $25.51 for adalimumab, $26.96 for certolizumab, $26.94 for etanercept, $34.79 for golimumab, $25.63 for infliximab and $22.71 for tocilizumab. Tocilizumab represented a 16% less share of the cost compared to adalimumab in compliance to the different model assumptions.

PMS42 COST-EFFECTIVENESS OF ADAлимABUM 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 2009 to 5.6 in 2016. In 2018, certolizumab was the single bDMARD strategy was compared against a cDMARD strategy in a study in Germany. We set up a Markov chain model to simulate the life-time treatment ofRA patients with the cost-effectiveness and current costs in Colombia, for the national health care system, the sequence of biological therapy in the first year, with equivalent or slightly better QALY gain (0.62 vs. 0.61). Cost saving and utility gained were maintained, and dominance was attained in more than 50% of Monte Carlo trials in the different time horizons and against the bDMARD strategy. The ICUR based on total cost in the first year was $25.51 for adalimumab, $26.96 for certolizumab, $26.94 for etanercept, $34.79 for golimumab, $25.63 for infliximab and $22.71 for tocilizumab. Tocilizumab represented a 16% less share of the cost compared to adalimumab in compliance to the different model assumptions.

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 assessed 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 for TNFα inhibitors. In the Colombia market, these products available for the treatment of rheumatoid arthritis following DMARD failure: abatacept, adalimumab, certolizumab, etanercept, golimumab, infliximab and tocilizumab. We compared the annual direct medical cost of treatment (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 Colombian price regulation guidance from the Ministry of Health (Circular 04-05/2013) and official sources for payments of treatments and procedures (SISMEJ). Sensitivity analyses were performed using different dosages and patients’ weights. 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 favor the use of abatacept as a first line biologic after DMARD failure.

PMS41 ECONOMIC EVALUATION OF TOFACITINIB COMPARED WITH BIOLOGICAL THERAPIES AT INITIAL FAILURE AFTER 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 Excel-based patient level simulation model to compare, with different time horizons (1, 2, 3, 5, 10, and 20 years), cohorts of patients with tofacitinib as initial therapy compared with adalimumab, certolizumab, etanercept, golimumab or infliximab. All the patients included received rescue treatment with methotrexate. The characteristics of the patients included: age, initial weight, initial HAQ score, and clinical response to short and long term treatment, based on all available randomized controlled trials and cost-effectiveness model simulations, where applicable. All costs were in 2012 Colombian pesos (1 USD = COP8180) were obtained locally, using official databases for drug costs, and tariff manual (ISS 2001+30%) for procedures and complications. HAQ scores were used to calculate utilities, measured in QALYs. Annual discount rate specified in Hombre M.1: Total costs, in million COP, for the treatment of the first year were $25.51 for adalimumab, $26.96 for certolizumab, $26.94 for etanercept, $34.79 for golimumab, $25.63 for infliximab and $22.71 for tocilizumab. Tocilizumab represented a % share of the cost compared to adalimumab in compliance to the different model assumptions.
**THE RELATIONSHIP BETWEEN ADHERENCE AND HEALTH CARE COST AMONG PATIENTS WITH RHEUMATOID ARTHRITIS: A RETROSPECTIVE CASE COMPARISON STUDY**

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OBJECTIVES: The objective of this research report was to examine the relationship between medication adherence levels and health care cost among patients with rheumatoid arthritis (RA). METHODS: This study used a retrospective case comparison design to examine per member per month (PMPM) medical cost. The commercial population of patients with RA was extracted from two large claims data bases between years 2006 and 2009. The case cohort consisted of compliant patients (MPR ≥ 80%) receiving medication management from the Specialty division of a large pharmacy retail chain. The comparison cohort consisted of non-compliant patients (MPR < 80%) from a national benchmark pharmacy and medical claims data base. Using propensity scores, patients were matched on age, gender, risk score, socio-economic status, standard international classification code, comorbid conditions, and pre-medication gap. RESULTS: Patients with RA who were compliant to their medication regimen had 25% lower PMPM medical cost (in-patient, out-patient, professional, and emergency room cost) than patients who were non-compliant ($637 vs. $855 respectively, p<0.0001). The major cost difference was due to in-patient cost which was 16% lower for compliant patients, followed by professional cost which was 15% lower for compliant patients. A closer look at medical cost by levels of compliance reveals that medical cost decreased at each level of medication compliance described below. Patients with adherence levels less than 40% had PMPM cost of $1024, those with adherence levels between 40% and 80% had PMPM cost of $838, and patients with adherence levels greater than or equal to 80% had PMPM cost of $657. CONCLUSIONS: Medical cost decreases as adherence to the RA medication regimen increases. Given that the cost of treating RA can be extremely expensive, one approach to addressing this financial issue is to target medication adherence.

**WITHDRAWN**