scores (and changes) using results of a mixed treatment comparison (first 6 months) and post hoc analysis of landmark trials (for the remaining period). When modifiable meta-analysis data were used to estimate adverse events incidence, followed by individual trial data and registry estimates. Canadian data from published sources were used to derive healthcare resource utilization costs and EuroQol-5D scores from Canada. Costs were estimated from Canadian dollars. Tocilizumab and one-way sensitivity analyses were completed on analytical horizon, event rates, and efficacy thresholds. RESULTS: After running the model for 100,000 simulations of moderate to severe RA patients, the treatment arm including tocilizumab had lifetime costs of $298,434 with 8.17 QALYs. Comparatively, the treatment arm excluding tocilizumab had a lifetime cost of $305,158 with 7.88 QALYs. Therefore, a treatment strategy including tocilizumab is dominant with lower costs and greater effectiveness. One-way and probabilistic sensitivity analysis reflected the robustness of these results. CONCLUSIONS: The inclusion of tocilizumab into the treatment strategy for moderate to severe RA is a dominant strategy in Canada (lower cost and increased QALYS).

PM547 MODELLING THE COSTS AND OUTCOMES ASSOCIATED WITH CONCURRENT TREATMENT WITH AND WITHOUT TOCILIZUMAB FOR THE TREATMENT OF MODERATE TO SEVERE RHEUMATOID ARTHRITIS IN THE US Claxton L1, Taylor M2, Moynagh D2, Gruben D3, Wallenstein G1, Singh A1
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OBJECTIVES: Rheumatoid arthritis (RA) is a chronic inflammatory condition with significant economic burden. Tocilizumab is an oral Janus kinase inhibitor indicated in the USA for the treatment of moderate to severe RA patients intolerant to methotrexate. Given the similarity of indications across available therapies, economic evaluation of alternate treatment strategies could inform US formulary decision-making. We estimated incremental cost-effectiveness ratios (ICERs) for tocilizumab vs. abatacept after failure of methotrexate. The model considered the following: quality of life, adverse events, and drug costs. Costs and QALYs were discounted at 3%. Sensitivity analyses were performed to test the robustness of the model results.

RESULTS: The model estimated 1-year outcomes of RA patients with a pre-specified "treatment sequence" (sequential methotrexate, tocilizumab, abatacept, tocilizumab, rituximab) versus a "comparator sequence" (sequential methotrexate, etanercept, adalimumab, abatacept, tocilizumab, rituximab). Model results revealed that the treatment sequence with tocilizumab vs. the comparator sequence resulted in a lower incremental cost and incremental QALYs. Probabilistic sensitivity analysis supported the robustness of the results. CONCLUSIONS: This model can be used to inform US formulary decisions regarding the use of tocilizumab as a second-line therapy following methotrexate failure. Compared to abatacept, tocilizumab appears to be a cost-effective alternative.

PM548 COST-EFFECTIVENESS OF TOCILIZUMAB FOR THE MANAGEMENT OF INADEQUATELY RESPONDING RHEUMATOID ARTHRITIS PATIENTS Hansen RJ1, Best HJ2, Sullivan SD3, Carlson J4
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OBJECTIVES: Rheumatoid arthritis (RA) is a chronic inflammatory disorder of the musculoskeletal system. After inadequate response (IR) to anti-tumor necrosis factor (anti-TNF) treatments, the clinical and economic value of alternative biologic agents is unclear. We sought to estimate the cost-effectiveness of tocilizumab versus abatacept from a U.S. payer perspective. METHODS: We constructed a treatment-regimen based cohort model with a lifetime horizon. The model evaluated the treatment comparison of tocilizumab (162mg every other week with escalation to weekly for inadequate responders) vs. abatacept (125mg, weekly). In this comparison, treatment initiation was followed by a cetuximab- tocilizumab-rituximab-palliative care sequence. Treatment response rates were applied every 6 months. Health-related quality of life was mapped to the health assessment questionnaire (HAQ) for RA. Mortality was modelled allowing for both non-RA and RA-specific mortality predicted by the HAQ. Costs were derived from published sources and included drug treatment, monitoring, and direct medical resource utilization. Costs and QALYs were discounted at 3%. Sensitivity analyses were performed to test the cost-effectiveness of the model. RESULTS: The model identified two initial treatments, tocilizumab dominated abatacept yielding better outcomes and fewer costs. Probabilistic sensitivity analyses indicated substantial uncertainty but the model results were robust. Tocilizumab had an 89% probability of being cost-effective at $50,000/QALY. The one-way sensitivity analysis indicated that the parameters related to baseline HAQ and improvement in the ACR 50 and 70 rates had the most impact on model results. CONCLUSIONS: The Markov model was developed to model the health and economic impact of tocilizumab in the management of patients with RA. The model represents a challenge for the health care system. Compared to abatacept, tocilizumab appears to represent a lower cost treatment option with improved outcomes. However, with the attendant uncertainty, head-to-head trials of these agents may be warranted.

PM549 ECONOMIC EVALUATION OF TOFACITINIB AS INITIAL MEDICATION IN ADULTS WITH RHEUMATOID ARTHRITIS AFTER FAILURE TO METHOTREXATE IN CHILE Velasquez ZM1, Bustos Medina I2, Da de Puenta AC3, Zator SC4, Gutierrez: Ardila MV5
1Universidad de La Frontera, Temuco, Chile, 2Pfizer Chile S.A., Santiago, Chile
OBJECTIVES: Rheumatoid Arthritis (RA) destroys synovial joints and generates a challenge for the health care system. Compared to abatacept, tocilizumab appears to be a cost-effective alternative. Therefore, the objective of this study is to compare the costs-effectiveness of tocilizumab relative to biological therapies as an initial treatment in adults with RA after failure of methotrexate in Chile. METHODS: A Markov model of individual patients was constructed to compare tocilizumab vs biological therapy as initial medications; always assuming a combination therapy with methotrexate. The model included tocilizumab, abatacept, infliximab, tocilizumab, rituximab and salvage therapy defined by experts. The characteristics of the patient included: age, weight, initial HAQ score, and clinical response to short and long term treatment. HAQ scores were used to calculate utilities, measured in QALYs based on CHILEAN patient preference and quality of life. Costs were collected and estimated using a Chilean administrative claims database. The analysis was made from third party payer perspective. The cost-effectiveness analysis was performed taking into account the uncertainties. RESULTS: The inclusion of tofacitinib into the treatment strategy for RA patients with lumbar disc herniation in Japan is expected to reduce medical costs compared to conventional surgery treatment even taking into account the uncertainties.

PM550 ECONOMIC EVALUATION OF TOFACITINIB AS INITIAL MEDICATION IN ADULTS WITH RHEUMATOID ARTHRITIS AFTER FAILURE TO METHOTREXATE IN CHILE Velasquez ZM1, Bustos Medina I2, Da de Puenta AC3, Zator SC4, Gutierrez: Ardila MV5
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rate-cost-age curve at 70yo prompted further consideration. Markov analysis indicated that CoP can be cost-effective. CONCLUSIONS: Shifting from MoP to CoP can be justified depending on the patient age, cost of the device, and actual CoP revision rate. All else equal, shifting all THAs in patients below age 70 to CoP and over 70 to MoP can be cost justified, even in the highest cost difference case.

PM52  

ECONOMIC EVALUATION OF TIMELY VERSUS DELAYED USE OF ANTI-TUMOR NECROTIZING FACTOR (TNF) BIOLOGICS IN THE TREATMENT OF PSORIATIC ARTHRITIS (PsA) IN THE US

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OBJECTIVES: Progress of PsA can lead to irreversible damage, functional impairment, and associated healthcare costs. Anti-TNF biologics have been shown to delay PsA progression [1,2] and may be more efficacious than conventional options such as non-steroidal anti-inflammatory drugs (NSAIDs) [3]. The objective is to compare the costs and effectiveness of the timely versus delayed use of anti-TNF biologic therapies (ETN, CZP, GLM) for PsA.

METHODS: A Markov model was developed to evaluate the costs and outcomes of two treatment sequences over a one-year time horizon. One sequence received ETN first followed by CZP or GLM. The other sequence received CZP followed by ETN or GLM. The model was validated with PsA treatment data from the published literature.

RESULTS: The annualized incremental cost-effectiveness ratio (ICER) was $12,433/QALY for GLM-CoP and $20,921/QALY for CZP-CoP. ETN-CoP was the most cost-effective strategy with an ICER of $12,404/QALY.

CONCLUSIONS: In the US, timely use of anti-TNF biologics can be cost-effective compared to delayed use. Future research is needed to validate the findings in real-world settings.

REFERENCES: