Abstracts

model (five-year horizon, three-month cycles) evaluating NSAID treatment in OA, the overall AE related costs and their constituents associated with celecoxib and ibuprofen treatment were quantified and compared. The individual costs (11 in total) were aggregated to four categories relevant to OA treatment: (i) costs directly attributable to clinical trial (CT) and post trial (PT) financial (GI) AE(s); (ii) costs directly attributable to dyspepsia; (iii) costs associated with myocardial infarction (MI); and (iv) co-medication (mainly proton pump inhibitors) costs. The model, which has a health care perspective, was populated with UK data and a discount rate of 3.5% per year was used. Except for the MI risks which were adjusted for age, all absolute and relative risks were taken from a meta-analysis in a recent NICE HTA report. Costs were aggregated to 1000 patients on treatment. RESULTS: Although 9 of the 11 adverse event related individual costs were lower with celecoxib than ibuprofen treatment, the overall cost difference ($14.560 vs. $17.277 of celecoxib) was attenuated by the relatively high MI related costs associated with celecoxib treatment ($92,734). CONCLUSIONS: Whilst the GI safety profile of celecoxib yields cost advantages, the MI costs associated with celecoxib treatment weakens the effect on overall adverse event related costs resulting from the beneficial GI safety profile.

DRUG UTILIZATION AND SPENDING TRENDS OF BisPHOSPHONATE MEDICATIONS MEDICAID PROGRAMS IN THE UNITED STATES

OBJECTIVES
Eight million women and two million men are afflicted with osteoporosis in the United States. There are additional 34 million people exhibiting low bone mass at risk for the development of osteoporosis. The purpose of this study was to describe the drug utilization and spending trends for bisphosphonate and other alternative osteoporotic medications in the Medicaid Program. METHODS: We used retrospective and descriptive study, pharmacy medication claims data extracted from the Center for Medicare & Medicaid Services were analyzed from 1991 to 2007 regarding quarterly number of prescriptions, units usage, reimbursement amount, and reimbursement per prescription for the oral bisphosphonates, injectable bisphosphonates, and alternative osteoporosis medications. Drugs were identified using their respective national drug codes (NDC). RESULTS: Risudronate accounted for 27% of all bisphosphonates prescriptions while alendronate accounted for the vast majority of bisphosphonate prescriptions with approximately 70% of the market over the 1991–2007 timeframe. Both alendronate and risedronate together accounted for approximately 92% of all reimbursements for both oral and injectable bisphosphonates during the study period. Alendronate's market share, as measured by total reimbursement, has been steadily declining from third quarter of 2004 to the third quarter of 2007, accounting for approximately 57% of total reimbursements, contrary to the roughly 83% of all reimbursements from the fourth quarter of 1996 to the second quarter of 2004. CONCLUSIONS: Market share for the leading drug brands has steadily declined with the introduction of generic competition as measured by overall utilization and total reimbursement, such as risedronate competing with alendronate in the bisphosphonate market and raloxifene competing with calcitriol-salmon in the alternative osteoporosis market. Examination of the Medicaid data also revealed a strident market shift in utilization following the fourth quarter of 2005, resulting from the switching of dual eligibles from Medicaid to Medicare Part D.

A COMPARISON OF DIFFERENT METHODS OF ESTIMATING FRACTURE RISK AND FRACTURE RISK REDUCTION IN COST-EFFECTIVENESS ANALYSES OF THE OSTEOPOROSIS TREATMENT BAZEDOXIFENE

OBJECTIVES: To determine the cost-effectiveness of etanercept plus methotrexate (MTX) versus rituximab plus MTX in the treatment of rheumatoid arthritis (RA). METHODS: A Markov model was used to project disease progression and treatment costs. Transition probabilities were based on published clinical trial data. A cost-utility analysis was performed from a societal perspective. The model was updated to include additional RA trials published since 2006. The model was validated to ensure that the results were consistent with other available analyses. RESULTS: The cost per QALY gained with methotrexate was $228,961. The cost per QALY gained with rituximab was $202,005. CONCLUSIONS: Methotrexate was more cost-effective than rituximab. However, due to the marked difference in acquisition costs, rituximab is unlikely to be used in the clinic.

ECONOMIC EVALUATION OF THE USE OF HYLAN G-F 20 IN THE HANDLING OF SEVERE KNEE OSTEOARTHROSIS

OBJECTIVES: Knee osteoarthritis is a multifactorial, progressive and incurable rheumatic ailment; most treatments look for a maximum recovery of mobility and functionality of the knee joint, with a minimum risk possibility. Due to its high cost and invasive character, arthroscopic surgery treatment is reserved, according to the clinical practice guidance available in Mexico, for severe pain and joint functionality limitation cases; defined as knee osteoarthritis present in IV degree, or functional class III onwards. This study evaluates cost and effectiveness of the use of Hylan G-F 20 vs. intraarticular steroids to withhold surgery in patients with severe knee osteoarthritis.

METHODS: Cost-effectiveness analysis using a decision tree to simulate a hypothetical cohort behavior of patients with severe knee osteoarthritis for a period of two years, from the perspective of the health service provider. Costs were estimated using prices of 2008 and are expressed in US dollars (exchange rate of 11.14 pesos/1 US dollar).

RESULTS: With Hylan G-F 20, 94.6% of patients did not require surgery during the analysis period vs. 50%, in the case of those under intraarticular steroid treatment. Expected treatment costs: Hylan G-F 20, $2081.0, and intraarticular steroids, $4593.2. The average cost-effectiveness of treatments: Hylan G-F 20, $220.5 and intraarticular steroids, $911.6. Incremental analysis shows Hylan G-F 20 as dominant alternative. Different sensitivity analyses corroborate the dominance relationship exercised by Hylan G-F 20 over the steroid treatment.

CONCLUSIONS: Hylan G-F 20 is more effective and less expensive alternative than steroid treatment to withhold surgery in patients with severe knee osteoarthritis.

COST-EFFECTIVENESS OF THE USE OF ETANERCEPT VS. RITUXIMAB IN PATIENTS WITH RHEUMATOID ARTHRITIS IN MEXICO

OBJECTIVES: To determine the cost-effectiveness of etanercept plus methotrexate (MTX) versus rituximab plus MTX in the treatment of rheumatoid arthritis (RA). METHODS: A Markov model was used to project disease progression and treatment costs. Transition probabilities were based on published clinical trial data. A cost-utility analysis was performed from a societal perspective. The model was validated to ensure that the results were consistent with other available analyses. RESULTS: The cost per QALY gained with methotrexate was $228,961. The cost per QALY gained with rituximab was $202,005. CONCLUSIONS: Methotrexate was more cost-effective than rituximab. However, due to the marked difference in acquisition costs, rituximab is unlikely to be used in the clinic.

AN ECONOMIC ANALYSIS COMPARING THREE COMBINATIONS OF TUMOR NECROSIS FACTOR-ALPHA AGENTS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS

OBJECTIVES: The purpose of the study was to conduct a cost-utility analyses between three combinations of Tumor Necrosis Factor-Alpha agents used in treatment of rheumatoid arthritis. The study compared adalimumab plus methotrexate (ADA+MTX), infliximab plus methotrexate (INF+MTX), etanercept plus methotrexate (EXA+MTX) with methotrexate (MTX) monotherapy (control). METHOD: The patients' perspective were assessed. Costs calculated for a period of one year included direct medical costs (drug acquisition costs, monitoring costs, and adverse drug event costs) and indirect costs (estimated using human capital approach). All costs were calculated in 2007 dollars and adjusted using a discounting factor of 3%. Outcome of therapeutic options was measured using the American

CONCLUSIONS: The ad of more accurate assessment of fracture risk assessment and its use as a determinant of efficacy has important consequences for CEA.

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ECONOMIC EVALUATION OF THE USE OF HYLAN G-F 20 IN THE HANDLING OF SEVERE KNEE OSTEOARTHROSIS

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OBJECTIVES: Knee osteoarthritis is a multifactorial, progressive and incurable rheumatic ailment; most treatments look for a maximum recovery of mobility and functionality of the knee joint, with a minimum risk possibility. Due to its high cost and invasive character, arthroscopic surgery treatment is reserved, according to the clinical practice guidance available in Mexico, for severe pain and joint functionality limitation cases; defined as knee osteoarthritis present in IV degree, or functional class III onwards. This study evaluates cost and effectiveness of the use of Hylan G-F 20 vs. intraarticular steroids to withhold surgery in patients with severe knee osteoarthritis.

METHODS: Cost-effectiveness analysis using a decision tree to simulate a hypothetical cohort behavior of patients with severe knee osteoarthritis for a period of two years, from the perspective of the health service provider. Costs were estimated using prices of 2008 and are expressed in US dollars (exchange rate of 11.14 pesos/1 US dollar).

RESULTS: With Hylan G-F 20, 94.6% of patients did not require surgery during the analysis period vs. 50%, in the case of those under intraarticular steroid treatment. Expected treatment costs: Hylan G-F 20, $2081.0, and intraarticular steroids, $4593.2. The average cost-effectiveness of treatments: Hylan G-F 20, $220.5 and intraarticular steroids, $911.6. Incremental analysis shows Hylan G-F 20 as dominant alternative. Different sensitivity analyses corroborate the dominance relationship exercised by Hylan G-F 20 over the steroid treatment.

CONCLUSIONS: Hylan G-F 20 is more effective and less expensive alternative than steroid treatment to withhold surgery in patients with severe knee osteoarthritis.
CONCLUSIONS: Etanercept plus Methotrexate combination therapy was a better option based on the ACR 20 outcome measure considered. An analysis using real world data and/or a prospective head-to-head comparison study could provide better evidence for decision-makers.

COSTS OF PSORIATIC ARTHRITIS IN HUNGARY, COSTS FROM A CROSS-SECTIONAL SURVEY


Objective: To determine the cost-effectiveness of treatment for osteoarthritis (OA) treatment with traditional NSAIDs and COX-2 selective pharmaceuticals. METHODS: Cost-effectiveness analysis (CEA) in OA treatment with traditional NSAIDs and COX-2 selective pharmaceuticals focuses on side effects given the non-substantive differences in efficacy (pain relief) among treatments. The most frequently included side-effects and complications in OA CEA analysis are gastrointestinal (GI) complications and myocardial infarction (MI). Given the concern about broader cardiovascular (CV) risks associated with NSAID treatment, the scope of a recently published Markov model (five-year horizon, three-month cycles, health care perspective) was expanded to include four additional CV events (stroke, coronary insufficiency, venous thromboembolism and angina). Two treatments priced at 1) the average of celecoxib and etoricoxib, and 2) ibuprofen were evaluated. The model was populated with UK data. Absolute and relative GI risks were derived from a recent NICE HTA report whereas absolute CV risks were assumed to equal the normal population risk and relative CV risks were taken from the literature. The model was used to determine the most important drivers of cost-effectiveness in OA treatment. This was done by evaluating the responsiveness of the ICER to a 1% change in the input variable of interest, controlling for changes in all other variables. RESULTS: The five most influential variables were (1) impact on ICER resulting from 1% change in the variable); Quality of life in arthritis (2.5%), relative risk of CV events (1.5%), relative risk of mild GI events (1.3%), price of the COX-2 pharmaceutical (1.3%) and quality of life in dyspepsia (0.7%). CONCLUSIONS: Whilst the most important cost-effectiveness driver in OA treatment is overall quality of life changes, the analysis indicate that there might be higher economic benefits associated with decreasing CV risks rather than decreasing aspects of GI risk.

THE COSTS OF NON-VERTEBRAL OSTEOPOROTIC FRACTURES IN THE UNITED STATES

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Objective: To determine the costs of non-vertebral osteoporotic fractures in the United States. METHODS: Healthcare claims data (1997-2006) from an employer claims database (9,800,000 privately-insured beneficiaries; ages 18-64) and the Medicare Standard Analytic Files 5% sample (ages 65+). Osteoporotic patients with NV fracture (femur, pelvis, lower leg, upper arm, forearm, rib, or hip) were randomly matched on age, gender, employment status, and geography to osteoporotic controls.