Abstracts

Drugs Utilization and Spending Trends of Bisphosphonate Medications in Medicaid Programs in the United States

Objective: Eighty 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 osteoporosis medications in the Medicaid Program.

Methods: A retrospective and descriptive study, Medicaid pharmacy 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: Risdonronate 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 risdonronate 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 decreasing 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 brand drugs 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 calcium-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.

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

Economic Evaluation of the Use of Hylan G-F 20 in the Treatment of Severe Knee Osteoarthritis

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Objective: 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 surgical treatment is reserved, according to the clinical practice guideline 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 corticosteroid treatment. Expected costs treatment: Hylan G-F 20, $2081.0, and intraarticular steroids, $4591.2. 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

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Objective: To determine the cost-effectiveness of etanercept plus methotrexate (MTX) versus rituximab plus MTX in the treatment of rheumatoid arthritis (RA) patients in Mexico. Methods: A Markov analytic model was developed to compare the cost and effectiveness of etanercept 25 mg twice-weekly+MTX versus rituximab 2×500 mg infusion+MTX and rituximab 2×1000 mg infusion+MTX (labeled dosage) in RA patients with an inadequate response to disease-modifying anti-rheumatic drugs. The primary measure of clinical outcomes was based on remission (Disease Activity Score 28 joint count <2.6). The model incorporated major and minor infectious events, discontinuation due to inadequate efficacy or adverse event, and rituximab re-treatment within the one year timeframe. Data from clinical trials (TEMPO and SERENE) were used. Direct and resource-use costs were based on government-reported public costs. Sensitivity analysis was conducted by varying efficacy and cost parameters by ±30%. Results: The annual total therapy cost for rituximab was $54,743 (2×500 mg) and MX$137,223 (2×1000 mg), and MX$119,133 for etanercept. The incremental cost-effectiveness ratio (ICER) of etanercept vs. rituximab 2×500 mg was MX$201,581 per additional patient achieving remission. Etanercept was cost saving when rituximab was ≥2×1000 mg. With a hypothetical budget of MX$10,000,000 for rituximab or etanercept, the number of patients achieving remission would be 7 (2×500 mg) and 4 (2×1000 mg) for rituximab and etanercept. Sensitivity analysis showed that etanercept continued to have more patients achieving remission than rituximab (for both dosage forms) even if drug cost and efficacy were varied ±30%, given a defined budget. Conclusions: The results suggest that etanercept appears to be cost-effective compared to rituximab. For the labeled and commonly used rituximab dosage (2×1000 mg), etanercept appears to be a cost-saving alternative. These findings were robust for plausible ranges of effectiveness and drug acquisition costs.

An Economic Analysis Comparing Three Combinations of Tumor Necrosis Factor-Alpha Agents for the Treatment of Rheumatoid Arthritis

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Objective: Purpose of the study was to conduct a cost-efﬁciency 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 (ETN+MTX), with methotrexate (MTX) monotherapy (control). MEDOMS: The patients' perspective. 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