A PHARMACOECONOMIC REVIEW OF ECONOMIC ANALYSES OF BIOLOGIC THERAPIES IN PATIENTS WITHankylosing Spondilitis

PM24

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OBJECTIVES: To conduct a systematic review of economic analyses of biologic therapies in patients with ankylosing spondylitis (AS) METHODS: A systematic literature search was conducted by one researcher from January, 2009 to January, 2009 using PubMed, Evidence-Based Medical Reviews, and Medline databases to identify all economic studies of biologic therapies in AS. Search key terms included ankylosing spondylitis, biologics, Adalimumab, Infliximab, Etanercept, cost, pharmacoeconomics, and combination of search terms. The Quality of Health Economic Studies (QHES) instrument was used to assess the quality of economic studies included in the final review. RESULTS: The initial search yielded nine studies out of which three review studies were excluded. The remaining six studies compared biologics with placebo, or compared biologics with each other. One study employed a cost-effectiveness analysis (cost/BADSA score), while the remaining studies employed cost-utility analysis (cost/QALY). Infliximab and Adalimumab were found to be cost-effective compared to Placebos and placebo with a CE ratio of $10,000/QALY (US) and €5,939/QALY (UK). A combination therapy of Etanercept and NSAIDs was found to be cost-effective (£ 25,000, UK) versus Placebos. A combination of Infliximab and Etanercept versus NSAIDs alone was not cost-effective (Etanercept $42,494/QALY, Infliximab €67,207/ QALY). CONCLUSIONS: In most studies the CE ratio of Adalimumab and Infliximab was below the accepted threshold of $50,000/QALY (US) and £25,000/QALY (UK). However, a study conducted in the The Netherlands did not help the combinational use of Infliximab and Etanercept in the treatment of AS, since the total treatment cost was higher than the accepted threshold of $50,000/QALY (US) and £25,000/QALY (UK). The literature search resulted in 189 articles of which 18 met the criteria for inclusion in this evaluation. Of these 18 studies, many examined the use of more than one biologic therapy, therefore, the total number of comparisons identified for adalimumab, ibandronate, zoledronic acid, and zoledronic acid were 13, 3, 8, and 1, respectively. The incremental cost-effectiveness ratios obtained from this analysis varied greatly for all included agents. Adalimumab was lower than $52,296.12 (cost-saving) to $934,883.71, ibandronate from $10,354.68 to $15,023.90; zoledronic acid from $1,468.75 to $241,410.15; and zoledronic acid from $1,791.42 to $2,207.39. The results varied based on the included women's age and underlying risk factors, the specific costs accounted for in each analysis, and the total duration of treatment. CONCLUSIONS: Bisphosphonates represent cost-effective treatment options for the prevention and treatment of PMO. Given the evidence available, it is difficult to determine whether one agent is conclusively more cost-effective than another for this indication. Further studies directly comparing bisphosphonates should be conducted to evaluate their comparative cost-effectiveness.

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THE COMMON PRACTICE OF ANTI-TNF PRESCRIPTION AND DISPENSING CONDITIONS

Andrisu S1, Ripert M2, Massier N1, Camara Raynud C3

1. Cegedim, Boulogne, France; 2. Wyeth, Paris La défense, France; 3. Wyeth, Paris la Défense, France

OBJECTIVES: The objective was to compare Etanercept and Adalimumab in terms of adequacy of recommended indications and of the health care costs. METHODS: This survey of cost minimization was performed by an office based pharmacist panel answering to a questionnaire at the moment of the delivery of one among two ambulatory biologics, Etanercept and Adalimumab. RESULTS: The results show that these biologics are mainly prescribed in rheumatology, 94% and 79% for Etanercept and Adalimumab respectively. The prescriptions are consistent with recommended indications for both products. In rheumatology, the retailing of consumption by pathology is closely followed for the two treatments. The follow of treatment scheme and of the associated costs have been realized only for the adult rheumatologic indications. At 93.8%, “Etanercept 50 mg” is prescribed at the recommended dosage. In 2.2 % of cases, the dosage increased at two injections per week and decreased at one injection all 2 weeks in 2.5 % of cases. For Adalimumab, 82.6 % treatments followed the recommended dosage, 3.6 % at an inferior dosage and 13.8 % at a superior dosage with one or two injections per week. The differential between the recommended treatment scheme and the common practice have a direct impact on the annual treatment cost. The health care costs with Etanercept appeared less expensive. The mean annual cost per patient is of $12,566 with Etanercept and of $16,252 with Adalimumab. CONCLUSIONS: This survey demonstrates that the health care cost is 29% superior with Adalimumab. The health care with Etanercept seems to have a better stability of the recommended treatment scheme.

PM28

COST-UTILITY ANALYSIS OF TUMOR NECROSIS FACTOR-ALPHA INHIBITORS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS USING A MARKOV MODEL

Nguyen CM1, Mendes M2, Bourtainv M3, Christopher M4, Morreale AP5


OBJECTIVES: To determine which tumor necrosis factor-alpha (TNF-α) inhibitor is the most cost-effective agent for the treatment of rheumatoid arthritis, METHODS: A Markov model was designed to analyze the cost-utility of certolizumab, etanercept, adalimumab and golimumab versus infliximab (with methotrexate) for the treatment of moderately to severely active rheumatoid arthritis from a U.S. health care payer perspective. A cohort of 10,000 patients was simulated using half-cycle correction over a cycle length of three months for a total of five years. The probability of achieving ACR70, serious infections, and hospitalization were based on data from published literature and assumed to follow a beta distribution. Utility scores were based on a published report using a visual analog scale. Costs were adjusted for 2008 and 2009 dollars using the medical consumer price index and a discount rate of 3% per annum. Cost and utility scores were assumed to follow a gamma distribution. Probabilistic sensitivity analysis (PSA) was performed to test the robustness of the base-case model. RESULTS: Certolizumab, etanercept and adalimumab and golimumab versus infliximab with methotrexate treatment compared to infliximab with incremental cost-effectiveness ratios (ICERs) of $101,377.60, −$137,606.34, −$102,689.18, and −$63,415.60/additional QALY gained, respectively. The cost-effectiveness ratios of certolizumab, etanercept, adalimumab and golimumab versus infliximab with methotrexate for the treatment of moderately to severely active rheumatoid arthritis from a U.S. health care payer perspective are $101,377.60 vs $63,415.60 vs $102,689.18 vs $63,415.60 per QALY gained. Conclusions: At a $60,000 willingness-to-pay (WTP) for QALY gained, the acceptability curve showed that certolizumab had a higher probability of being cost-effective compared to all other comparators at a WTP of $60,000/additional QALY gained. CONCLUSIONS: At a $60,000