PGI7

COST-EFFECTIVENESS ANALYSIS OF ADALIMUMAB VS. CERTOLIZUMAB MAINTENANCE THERAPIES FOR MODERATE TO SEVERE CROHN'S DISEASE

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OBJECTIVES: To examine the cost effectiveness (CE) of certolizumab vs. adalimumab for Crohn's disease. **METHODS:** CE was modeled as a function of time in remission; hospitalizations; dosing; biologic and medical costs; and QALYs. Certolizumab model inputs were imputed/estimated from PRECISE 1/2. Adalimumab inputs came from the every-other-week (eow) and placebo arms of CHARM. Adalimumab and certolizumab baseline characteristics were matched based on sex, prior anti-TNF history, and CDAI. Remission, hospitalizations, and dosage were weighted based on matching. Two comparisons were made: Base Case Model (BCM) 1: adalimumab vs. certolizumab; and BCM2: treatment minus placebo. Hospitalization costs, other medical costs, and utility were derived the literature. Drug costs were based on 2008 WAC. Since no data were available for certolizumab effects on hospitalization, data were imputed from a regression model employing CHARM data. Data were analyzed in a cost-utility framework from a payer perspective. **RESULTS:** In BCM1, adalimumab patients accrued greater expected incremental health utility (0.0072) in the first 26 weeks of therapy vs. certolizumab. The average 26-week remission rates were 37.4% for adalimumab and 24.4% for certolizumab. Drug-related costs for certolizumab totaled $9110, while hospitalization costs and other direct medical costs were $2943 and $6,523. Adalimumab drug-related costs totaled $7704, while hospitalization costs and other direct medical costs were $2224 and $6015. In BCM2, difference in health utility between 1) certolizumab and placebo was 0.0027, and 2) adalimumab and placebo was 0.0066 (adalimumab advantage of 0.0039). The 26-week average NNTs were 6.7 for adalimumab and 14.4 for certolizumab. In BCM1 (vs. PRECISE 2), adalimumab patients were $456 less costly and incurred 0.0061 greater incremental health utility. In BCM2, adalimumab had a 0.0041 incremental advantage. The 26-week average NNTs were 7.02 for adalimumab and 15.96 for certolizumab. **CONCLUSIONS:** These results suggest adalimumab eow maintenance therapy is a dominant strategy vs. certolizumab.

PGI8

COST-EFFECTIVENESS OF PEG-IFN ALPHA 2A OR 2B PLUS RIBAVIRIN IN THE TREATMENT OF CHRONIC HEPATITIS C IN MEXICO

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OBJECTIVES: To compare the cost-effectiveness of peginterferon alpha 2a or alpha 2b, plus ribavirin, in the treatment of Hepatitis C virus chronic infection, from an institutional perspective, in the Mexican setting. **METHODS:** Using a decision tree, a Hepatitis C virus chronic infection 1-year treatment was modeled. The effectiveness of each treatment against genotypes 1, 2, or 3 was obtained using a previously published meta-analysis; the effectiveness measure was the percentage of patients who obtained a sustained viral response. Epidemiological data were included for genotype population distributions in Mexico. The utilized health care resources were derived from the Hepatitis C National Consensus and records from a reference hospital, whereas costs were obtained from purchasing records from a public institution. Costs were estimated using prices of 2008 and are expressed in US dollars (exchange rate of 11.14 pesos/ 1 US dollar). **RESULTS:** The cost for drugs accounted for over 80% of total treatment cost. Average costs per patient treated were: $8422.16 for peginterferon alpha 2b + ribavirin vs. $9452.59 for peginterferon alpha 2a + ribavirin. Effectiveness achieved in obtaining a case with sustained viral response for peginterferon alpha 2b + ribavirin was 12% higher compared to peginterferon alpha 2a + ribavirin. Average cost–effectiveness ratios corresponding to cost per patient with sustained viral response were $14,921.42 for peginterferon alpha 2b + ribavirin: and $21,221.53 for peginterferon alpha 2a + ribavirin. Incremental cost–effectiveness ratios obtained in the model show peginterferon alpha 2b + ribavirin treatment as the most cost–effective or dominant strategy, since using peginterferon alpha 2a + ribavirin has a cost of $8658.28 pesos for an additional patient to present sustained viral response. **CONCLUSIONS:** Ribavirin plus peginterferon alpha 2b combination was the most cost-effective treatment, in the Mexican context, according to the proposed decision tree model.

PGI9

ECONOMIC ANALYSIS OF THE POTENTIAL USAGES OF ALVIMOPAN AND METHYLNALTREXONE AT A TERTIARY CANCER CENTER

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OBJECTIVES: One of the major mandates of the Formulary Management System (FMS) is to evaluate and select drugs using the highest level of evidence available, including cost-effectiveness and budget impact. The purpose of this study is to provide pharmacoeconomic analysis for P&T Committee from the institutional perspective for alvimopan and methylnaltrexone, two peripheral opioid antagonists recently approved by FDA. **METHODS:** A decision analysis model was developed for alvimopan vs. both placebo and chewing gum, using time to hospital discharge as the primary outcome. For methylnaltrexone, the decision analysis compared to placebo determined the probability of laxation as the primary outcome. Institutional acquisition costs were utilized for the analysis. A budget impact analysis of both products was also conducted. **RESULTS:** Alvimopan has incremental cost-effectiveness ratio (ICER) of $51 per hour of reduced LOS vs. placebo, and an ICER of $81 per hour of longer LOS vs. chewing gum. Methylnaltrexone has an ICER of $636 per probable bowel movement, the approved FDA indication, compared with placebo. The estimated annual budget impact of alvimopan and methylnaltrexone on MDACC is $375,000 and $134,400, respectively. **CONCLUSIONS:** In summary, alvimopan is more effective and more costly than placebo for postoperative ileum. However, alvimopan is less effective and most costly than chewing gum for the same indication. The other peripheral opioid antagonist methylnaltrexone is more effective and more costly than placebo for opioid-induced constipation. Though a very basic model, the decision analysis model provided another layer to the final decision process.

PGI10

BURDEN OF SURGICALLY RESECTED GASTROINTESTINAL STROMAL TUMORS (GIST) IN THE US

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OBJECTIVES: Adjuvant therapy for patients with surgically resected GIST leads to a significant reduction in recurrence. The purpose of this study was to evaluate costs and outcomes associated with surgically resected localized GIST (SRLG) and recurrent GIST. **METHODS:** We conducted a retrospective analysis of the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked database, containing information from the SEER cancer registry linked to administrative claims from Medicare. Patients with a diagnosis of GIST from 1993–2002 were identified using a combination of primary cancer site and ICD-O-2 histology codes typical for GIST, and the ICD-O-3 GIST code, where available. Patients with SRLG were retained and their Medicare claims scanned from the time of GIST diagnosis through 2005 to assess survival and health care costs. All GIST patients were age and sex matched 1:1 to GIST free controls; patients with recurrence were matched to recurrence-free controls for recurrence analyses. GIST- and recurrence-attributable costs were estimated using the Kaplan-Meier Sample Average method using up to 10-years of follow-up data and computing the difference between cases and controls. **RESULTS:** We identified 292 patients in the SEER-Medicare data with SRLG; 35 with recurrence. Median overall survival was 59 months among all GIST patients, and recurrence-free survival was 45 months. Median post-recurrence survival was 46 months. Recurrence-free survival was 82%, 69%, and 39% at 1, 2, and 5 years respectively. Per-patient costs ($2005 US) attributable to SRLG were ~$19,500 (95% CI $3,700, $37,500) with the majority of costs incurred in the first 3 years after diagnosis; the associated annual burden was estimated to be ~$33.1 million among ~4,100 prevalent cases. Per-patient costs attributable to GIST recurrence were ~$97,900 (95% CI $28,200, $197,500). **CONCLUSIONS:** GIST recurrence is associated with poor survival and increased medical-care costs. Adjuvant treatments that delay or eliminate recurrence could substantially reduce the burden of GIST.

PGI11

ECONOMIC EVALUATION OF INFLIXIMAB AND ADALIMUMAB FOR CROHN'S DISEASE

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OBJECTIVES: Anti-TNF-alpha agents for Crohn's disease (CD) have good clinical efficacy but high acquisition cost compared to rival drugs. Previous modelling estimates are limited by a lack of primary data for costs of care and health state utility. The aim of the present study was to undertake an independent analysis incorporating data from recent trials and observational studies from the perspective of the UK National Health Service. **METHODS:** Lifetime Markov analyses constructed to simulate outcomes and costs. CD was represented by 5 disease states: Full Response (CDAI < 150, remission); Partial Response (CDAI 150–220, mild-to-moderate activity); Non-Response (CDAI > 220, moderate-to-severe activity); Surgery and Death. The course of Crohn's disease under standard care was modelled from a transition matrix derived from the Olmsted county cohort. Systematic review identified ACCENT I (infliximab) and CHARM (adalimumab) as sources for efficacy data. We modelled an intention-to-treat strategy for biologics by including a non-responder cohort (representing patients excluded from the trials after failed induction). Surgical rates were based on observational data; cost estimates were taken from our UK dataset and utilities were derived for each state from an algorithm converting CDAI to EQ-5D utilities. **RESULTS:** In the base-case analysis (lifetime horizon; 1–2 years continuous therapy; discount rate 3.5%) both agents achieved acceptable ICERs compared to standard care (Infliximab: ≤19,050 [1 yr]; ≤21,300 [2 yrs]; Adalimumab: ≤7,190 [1 yr]; ≤10,310 [2 yrs]). Lifetime therapy was dominated by standard care. Analyses over shorter time horizons, matched to treatment duration, resulted in unfavourable ICERs. **CONCLUSIONS:** Contrary to earlier analyses, the model suggests acceptable ICERs for biological agents when considering a lifetime horizon with periods of at least 4 years continuous therapy. Apparent differences between rival biological agents must be interpreted cautiously as head-to-head trial data are not available.