PCN31

COST OF CARE FOR MEDICARE PATIENTS DIAGNOSED WITH METASTATIC BREAST CANCER WHO RECEIVED TRASTUZUMAB

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OBJECTIVES: Trastuzumab (Herceptin) was approved in 1998 for treating patients with metastatic breast cancer. However, there is little information on the cost of care in these patients. The following abstract quantifies the costs for these patients.

METHODS: We used SEER-Medicare data to identify inpatient, outpatient, and total costs, in women diagnosed with metastatic breast cancer: Stage IV (S-IV) or Stage 0-III with distant recurrence (S-DR) who received trastuzumab. An index date was defined as either the date of diagnosis (S-IV) or of first distant recurrence (S-DR). Included patients were diagnosed in 2000–2002, and had their first claim for trastuzumab between their index date and December 31, 2005, the end of the observation period. Patients were divided into those who received trastuzumab as part of their first treatment following their index date (Group A), and those who began trastuzumab after at least one course of chemotherapy (Group B). Monthly inpatient, outpatient, and total Medicare costs were calculated and adjusted to 2008 dollars using the Medicare component of the CPI. RESULTS: A total of 281 patients met the inclusion criteria, of whom 100 (36%) were diagnosed as stage IV at index (N = 181 for stage 0-III with distant recurrence) and 191 patients received trastuzumab as part of initial treatment. For the group in general, the average total monthly cost was $6104. 29% due to inpatient costs ($1744). In bivariate analysis, the average cost for S-IV patients ($6762) was significantly higher (p = .03) than for S-DR patients ($7740), largely due to higher inpatient costs ($2253 versus $1463). The average monthly cost of care was significantly higher (p = .004) in Group A ($6338) than Group B ($5168). These differences persisted in multivariate analyses. CONCLUSIONS: Medicare costs are greater among women initially diagnosed with Stage IV breast cancer; compared to those diagnosed with Stage 0-III disease who have a distant recurrence.

PCN32

ECONOMIC EVALUATION OF SUNITINIB, SORAFENIB, BEVACIZUMAB, INTERFERON ALPHA AND TANIROLISUMUB IN FIRST LINE TREATMENT OF METASTATIC RENAL CELL CARCINOMA IN ISRAEL

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OBJECTIVES: Metastatic renal cell carcinoma (mRCC) is highly resistant to chemotherapy, rendering limited anti-tumor effect. New treatments such as Sunitinib, Sorafenib, Bevacizumab/Interferon-alpha (INF-a), and Tanirolisumub have been recently introduced in first line treatment of patients with mRCC. We assessed the cost effectiveness of these therapies from the perspective of the Israeli health care payer. METHODS: We used a Markov model with a 10-year time horizon to simulate disease progression, survival, and cost outcomes for a hypothetical cohort of mRCC patients. Although no head-to-head trials comparing the new treatment modalities are available, most studies had compared the new therapies against INF-alpha, thus allowing an indirect comparison of clinical efficacy. Utility weights were estimated from Sunitinib clinical trials using the EQ-5D. Drug and other health care costs were estimated from nationally published sources, and reported in 2008 New Israeli Shekels (NIS). Treatment effectiveness was measured in QALYs gained. Costs and benefits were discounted annually at 3%. We used a series of univariate and probabilistic sensitivity analyses to test the robustness of our base-case findings. RESULTS: Sunitinib was the most effective intervention and resulted in a gain of 0.27 QALYs compared with Sorafenib and Bevacizumab in NIS 245,869 NIS (~$40,000) per QALY gained when compared with Sorafenib, and was the dominant intervention compared to the other treatment modalities. The model results were robust to changes in a wide range of model parameters, including treatment efficacy and follow-up treatment costs. CONCLUSIONS: Our model indicates that Sunitinib is a cost-saving alternative, when compared with Bevacizumab/INF-alpha, and Tanirolisumub and is within the accepted threshold for cost-effective interventions when compared with Sorafenib.

PCN33

COST-EFFECTIVENESS ANALYSIS OF SORAFENIB ASSOCIATED TO BEST SUPPORTIVE CARE (BSC) VERSUS BEST SUPPORTIVE CARE ALONE IN THE SECOND LINE TREATMENT OF ADVANCED RENAL CELL CARCINOMA UNDER THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM PERSPECTIVE

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OBJECTIVES: The objective of the study was to develop a cost-effectiveness analysis of sorafenib associated to BSC versus BSC alone in the second line treatment of advanced renal cell carcinoma (RCC) under the Brazilian public health care system perspective. METHODS: A Markov model was developed to project the lifetime costs and effects associated with the disease progression of patients receiving sorafenib/BSC or BSC alone. The cycle duration was three months and the corresponding transition probabilities were obtained from the TARGET study. The model considered three health states: progression free survival, disease progression and death. The outcomes were expressed as life years gained. Only direct medical costs were considered in the analysis, including drugs, physician visis, monitoring and treatment of adverse events. Unit costs for drugs were obtained from the Brazilian Health Prices Database (BPS) and procedure costs were extracted from the National Database of Ambulatory Costs (SIADATASUS). Costs and outcomes were discounted at an annual 3% discount rate. Main parameters were evaluated in a sensitivity analysis. RESULTS: In the base case, the cost-effectiveness ratio of sorafenib/BSC compared to BSC was $83,490.00 per QALY. The cost-effectiveness ratio varied from $3,450.00 to $149,000.00 per QALY, with a 95% confidence interval of $7,430.00 to $149,000.00 per QALY. CONCLUSIONS: Sorafenib/BSC appears to be cost-effective in the management of advanced RCC.

PCN34

ECONOMIC EVALUATION OF TEMOZOLOMIDE FOR THE TREATMENT OF NEWLY DIAGNOSED GLIOBLASTOMA MULTIFORME IN MEXICO

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OBJECTIVES: To analyze the cost-effectiveness of temozolomide in the treatment of newly diagnosed glioblastoma multiforme versus radiotherapy alone from the Mexican health care perspective. METHODS: A cost-effectiveness analysis was performed based on a Markov model, with the health states initial, relapse, progression, and death. This model allowed us to compare the expected outcomes and costs associated with temozolomide compared with radiotherapy alone for a synthetic cohort of patients aged 65 years over a 5-year period. The model cycles every six months and continues until all patients die. The probabilities of transition between health states were obtained from the literature. Costs were expressed in 2008 US dollar. Outcome estimates included the incremental cost-effectiveness ratio (ICER) and cost per life-year (LY) gained. Costs and health outcomes were discounted at 3%. Second-order Monte Carlo simulations were undertaken by which values were randomly drawn from the distributions of these parameters. RESULTS: The accumulated discounted cost is 1,032,859.20 NIS per patient receiving temozolomide compared to 0.931 LY for radiotherapy alone. Total lifetime medical cost was US$3,698 for temozolomide vs US$30,715 for radiotherapy alone. The incremental cost-effectiveness of temozolomide was US$893 per life year gained. There is a 79% probability that temozolomide is cost-effective at a US$10,000 per life-year saved threshold and a slightly more than 95% probability of being cost-effective at a US$18,000 per life-year saved threshold. CONCLUSIONS: Results from these analyses suggest that in the Mexican setting, use of temozolomide in place of radiotherapy alone for treatment of glioblastoma multiforme is likely to be cost saving. These conclusions are supported by the use of conservative assumptions and sensitivity analyses.

PCN35

COST-EFFECTIVENESS OF HUMAN PAPILLOMAVIRUS VACCINE IN COLOMBIA IN 2007

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OBJECTIVES: To estimate the disease burden of human papillomavirus (HPV) related cancer and preneoplastic lesions and to calculate the cost-effectiveness of introduction of HPV vaccine. METHODS: A full economic evaluation was done regarding potential introduction of HPV vaccine. A Markov model that regards the natural history of disease was developed using software TreeAge Pro. The model allowed for evaluating four different alternatives: 1) no intervention; 2) current Colombian screening program alone; 3) vaccination alone; and 4) combination of both. A systematic review was done to identify incidence, prevalence, mortality, and probability of progression/regression of cervical cancer, preneoplastic lesions, and vulva, anus, penis, and oropharynx cancer in Colombia. Other government and institutional databases were used to complement and validate these estimators. A similar procedure was performed to identify the cost of attending these diseases, the frequency of use of related services and the efficacy of vaccine. All costs were assessed in international dollars of 2007 ($). RESULTS: The burden of cervical cancer in 2007 was estimated in 54,684 DALYs, that were assumed attributable to HPV. Other HPV-related cancers accounted for 6364 YLL, and 1439 were considered attributable to HPV. At a cost per vaccinated woman (Cwp) – three doses plus administrative costs- ranging from $25 to $57, strategy 2 was dominated by Strategies 3 and 4. Considering a life-time horizon, the incremental cost-effectiveness ratio of Intervention 4 over Intervention 3 was $1,355, $19,895, $6,800 and $81,100 at a Cwp of $15, $30 and $60, respectively. At Cwp lesser than $75, the Strategy 3 was dominated. CONCLUSIONS: The sensitivity analysis showed that Cwp is by far the most important variable for the model. At Cwp could be cost-effective, In that case, back casting impact should be analyzed. In Colombia, the cost of current screening program is very expensive, and alternative programs should be considered.