ECONOMIC EVALUATION OF A TOBACCO CESSATION PROGRAM AT A MAJOR CANCER CENTER

Miller LA, Karam-Hage MA, Lal LS, Mallen M, Feng C, Blalock J, Cinciripini P
University of Texas—MD Anderson Cancer Center, Houston, TX, USA

OBJECTIVES: To evaluate the cost-effectiveness of three tobacco cessation pharmacotherapy strategies: varenicline only, nicotine transdermal patch plus nicotine polacrilex gum (NRT), and bupropion plus nicotine transdermal patch. All patients also received multiple individual sessions of cognitive behavioral and motivational intervention, as part of the Tobacco Treatment Program (TTP) for cancer patients at M.D. Anderson Cancer Center. Patients with psychiatric disorders were assessed and treated by the program psychiatrist. **METHODS:** A decision analytical model was developed and populated with retrospective cost and outcomes data from the TTP databases. The model estimated the incremental cost-effectiveness of the three aforementioned strategies for the treatment of tobacco addiction. Costs included direct institutional medication costs, and the direct costs plus institutional overhead for counseling and psychiatric sessions. All costs were adjusted to January 2008 dollars. The model was evaluated for two outcomes of interest: 1) tobacco cessation—defined as seven-day abstinence after 12 weeks of therapy, and 2) tobacco use reduction of at least 50% after 12 weeks. **RESULTS:** Efficacy and utilization data from 281 patients in the TTP were used to populate the model. The results showed that NRT (patch plus gum) was the least costly strategy for quitting. However, varenicline was more effective, with an incremental cost-effectiveness of $3,778 per quit event. For reducing tobacco use by at least 50%, NRT was most cost-effective, being the least costly and most effective; dominating the other two strategies for that outcome. **CONCLUSIONS:** In this sample of cancer patients, NRT in the form of the nicotine transdermal patch and gum appears to be a cost-effective option for reducing tobacco use, although varenicline was found to be most effective when only considering quit rates. The results of this study provide preliminary evidence to guide decision making regarding pharmacotherapy options in tobacco cessation programs.

COST-UTILITY ANALYSIS IN A SPANISH SETTING OF ADJUVANT THERAPY WITH TRASTUZUMAB (HERCEPTIN®) IN PATIENTS WITH HER-2 POSITIVE BREAST CANCER

Polanco C[1], Carulla M[1], Badia X[1], Ramirez-Arellano A[2]
[1]IMS Health, Barcelona, Spain, [2]Roche Farma, S.A, Madrid, Spain

OBJECTIVES: Trastuzumab (Herceptin®) combined with standard chemotherapy has demonstrated a significant improvement in time to progression and overall survival in early breast cancer (EBC) patients over-expressing human epidermal growth factor receptor (HER-2). The objective of this study is to estimate the long-term clinical and economic outcomes of one year of adjuvant Herceptin® therapy in Spanish HER2-positive EBC patients. **METHODS:** An analytic Markov model was based on the results from the pivotal international clinical study (HERA). The model simulated long-term clinical outcomes and costs of adding Herceptin® during one year sequentially to standard adjuvant chemotherapy versus standard alone in EBC patients. The health states included loco-regional and distant recurrences (metastasis), cardiac events (side-effects), disease free survival and death. Improvements in lifetime QALY were also estimated. Model transition probabilities were based on HERA results. Yearly costs in each health state show medical practice in Spanish hospitals and came from questionnaires filled in by oncologists, published sources and local databases. Medical records of 31 metastatic breast cancer patients were reviewed to estimate the annual cost of this health state. Direct costs and health outcomes were projected over a 10-year horizon from the Spanish National Health System (SNHS) perspective. Both variables were discounted at an annual rate of 3.5%. A sensitivity analysis was performed. **RESULTS:** For a cohort of 1000 patients with a 10-year follow-up, adjuvant therapy with Herceptin® would prevent 195.0 loco-regional recurrences, 755.8 distant recurrences and 114.7 deaths. ICER estimated for Herceptin® was €16,834 in a 10-year horizon. This estimate is well below the non-explicit but commonly accepted efficiency threshold in Spain (€30,000). **CONCLUSIONS:** Adding up the monoclonal antibody Herceptin® (Trastuzumab) to standard chemotherapy for the treatment of patients with primary HER-2 positive EBC significantly improves overall survival. Such an improvement can be attained in the SNHS with a relatively acceptable ICER.

ECONOMIC EVALUATION OF SUNITINIB FIRST-LINE FOR METASTATIC RENAL CELL CARCINOMA VERSUS SORAFENIB, TEMSIROLIMUS AND BEVACIZUMAB + INTERFERON-ALFA IN THE SWEDISH HEALTH SERVICE SETTING

Munir U[1], Benedict Á[1], Borgman B[2], Sandin R[2], Harmenberg U[3], Ullén A[3], Sandström P[3]
[1]United BioSource Corporation, Budapest, Hungary, [2]Pfizer AB, Sollentuna, Sweden, [3]Karolinska University Hospital, Stockholm, Sweden

OBJECTIVES: To model the cost-effectiveness of sunitinib versus sorafenib, temsirolimus and bevacizumab + interferon (IFN) as first-line therapy for mRCC in the Swedish health service setting. **METHODS:** An adapted Markov model was created using data collected from clinical trials. Patient-level data and parametric survival curves obtained from a comparative trial of sunitinib versus IFN were extrapolated to 10 years. Indirect comparison of the efficacy of sorafenib, temsirolimus and bevacizumab + IFN versus the IFN arm of clinical trials generated progression-free survival (PFS) and overall survival (OS) data. First-line therapy determined the choice of second-line therapy and the proportion of patients receiving best supportive care after progression. Resources specific to Sweden included drugs, tests, scans, monitoring, physician visits, hospitalisations and AE management. Outcome measures included life-years (LY), progression-free LY (PFLY), and quality-adjusted LY (QALY) gained. **RESULTS:** Sunitinib had the greatest projected PFS and OS. Incremental 10-year cost-effectiveness ratios for sunitinib versus sorafenib were Swedish krona (SEK) 120,300/PFLY, SEK177,900/LY and SEK210,200/QALY gained. Sunitinib dominated temsirolimus and bevacizumab + IFN, since both were more costly and less effective. At a threshold for societal willingness to pay of SEK500,000/QALY gained, sunitinib has the highest probability of being the most cost-effective therapy. In this model, key drivers were hazard ratios for PFS and OS, drug costs and the percentage of patients with second-line therapy. The update on PFS and OS for sunitinib and IFN presented at the ASCO 2008 meeting is in line with predicted values in the model and hence confirms the robustness of the results. **CONCLUSIONS:** In the Swedish health service setting, sunitinib is a cost-effective option for first-line mRCC therapy compared with sorafenib, temsirolimus and bevacizumab + IFN. Sunitinib had the highest probability of being the most cost-effective treatment at a SEK500,000/QALY threshold for societal willingness to pay for clinical benefit.