Abstract

Objective: Trastuzumab (Herceptin®), a recombinant, humanized, monoclonal antibody targeting HER2 is well established as an effective treatment for HER2-positive breast cancer. Evidence from developed countries showed that trastuzumab was cost-effective; but there are few evidences in developing countries. This study assesses the cost-effectiveness of adjuvant trastuzumab treatment in Colombia. Methods: A Markov health-state transition model was built to estimate clinical and economic outcomes in HER2-positive breast cancer with or without 12 months trastuzumab adjuvant chemotherapy over a lifetime perspective with annual transition cycles. The model incorporated five health states (disease-free, local recurrence, distant recurrence, cardiac failure, and death). Baseline event rates and 3-year hazard ratio (HR=0.51, IC 95% 0.44–0.59; p<0.0001) were derived from 4-year follow up of the N9831 and NSABP B-31 trial. Costs and utility weights were obtained from the literature and were discounted by 5% annually. Results: The model showed that the utilization of adjuvant trastuzumab treatment in early breast cancer can prolong 0.80 quality-adjusted life-years (QALY), compared with standard chemotherapy, an incremental cost-effectiveness ratio (ICER) of US$ 71,491 per QALY gained. Conclusion: The results suggest that 1-year adjuvant Trastuzumab treatment is not cost-effective in Colombia, using the definition of WHO cost-effectiveness threshold of 3 times GDP per capita.

Keywords

Breast cancer, Human Epidermal Growth Factor Receptor 2–Positive, Colombia