Abstracts

AN EVALUATION OF THE COST SAVINGS GENERATED WITH THE USE OF AN INTRA-OPERATIVE ASSAY FOR THE DETECTION OF METASTASES IN THE SENTINEL LYMPH NODES OF PATIENTS WITH BREAST CANCER


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OBJECTIVES: A molecular assay (GeneSearch™ Breast Lymph Node (BLN) Assay, Veridex, LLC), CE marked and approved by the FDA, has been in clinical use at our institution for over 18 months to intra-operatively detect metastases ≥0.2 mm in the sentinel lymph nodes (SLNs) of breast cancer patients. After a small validation study (N = 78, sensitivity = 92.3%, specificity = 96.9%) the assay was adopted as the only intra-operative SLN test used at the Institut Jules Bordet. This is the first evaluation of the cost savings generated by the use of this BLN assay.

METHODS: An economic evaluation was conducted in the first 300 patients in whom this BLN assay was used intra-operatively. The BLN assay results are used to make intra-operative decisions for axillary lymph node dissections (ALND) during the same surgery. We assessed the pathology, surgery & anesthesia, pharmacy, post-hospitalization, general, and total costs associated with patients having either: Surgery A = a lumpectomy + SLN + secondary ALND versus having: Surgery B = a lumpectomy + BLN + ALND. RESULTS: The total costs per patient for Surgery A was €3120, while for Surgery B it was €2210. Therefore, a difference of €910, were saved per patient when using the BLN assay, which represents a 29% cost savings. Since 58 patients avoided having a second surgery, the total cost savings accrued by the institution for the Belgian social security system as a result of using the BLN assay in this first cohort of 300 patients, was €52,780. CONCLUSIONS: The BLN assay proved to be beneficial not only for our patients by reducing the need of second surgeries, it has also been demonstrated to be cost saving for the Belgian social security system. Its use at the Institut Jules Bordet in the first cohort of 300 patients has resulted in a cost savings of €52,780.

COST-EFFECTIVENESS ANALYSIS OF ADJUVANT TRASTUZUMAB FOR TREATMENT OF HER2-POSITIVE EARLY BREAST CANCER IN THE SAUDI ARABIAN SETTING

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OBJECTIVES: To evaluate the cost-effectiveness of standard chemotherapy plus adjuvant trastuzumab treatment for one year compared to standard chemotherapy in patients with early breast cancer in Saudi Arabia. METHODS: A Markov model was adapted to estimate the costs and clinical outcomes (quality-adjusted life-years (QALYs) and life expectancy) associated with the progression-free survival curves. CONCLUSIONS: The analysis demonstrates the role of cetuximab in enabling curative surgery which drives the cost-effectiveness. When assessing a highly selected group of patients within a subset with wild-type KRAS, the ICERs are close to UK willingness to pay acceptance thresholds.

COST-EFFECTIVENESS OF CETUXIMAB IN FIRST LINE TREATMENT OF METASTATIC COLORECTAL CANCER: A MODELLING APPROACH FOR THE UK

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OBJECTIVES: To estimate the cost effectiveness of the addition of cetuximab to chemotherapy in 1st-line metastatic colorectal cancer (mCRC) from the UK NHS perspective. METHODS: Cetuximab is licensed for the treatment of mCRC in combination with chemotherapy (FOLFIRI and FOLFOX) in patients with wildtype KRAS and EGFR expressing tumours. A Markov model was developed to simulate disease progression, survival and potential for curative surgery. Progression-free survival data were extrapolated in the basecase analysis, utilising different parametric models. The potential for curative-intent liver surgery is estimated from Folprecht et al. [1] which demonstrated correlation between response rates to chemotherapy and resection rates. Base case resection rates (active/comparator) of 22%/12% (FOLFIRI) and 15%/7% (FOLFOX) were assumed using this correlation. The long-term benefits of surgery were estimated from Adam et al [2]. Treatment in specialised centres may lead to vial sharing and higher resection rates (55%/35% and 42%/26% respectively), these assumptions are tested in sensitivity analysis. The 1st line utility value (0.77) in the model was derived from EQ5D data collected in the FOLFIRI trial. RESULTS: In the basecase the addition of cetuximab to FOLFIRI/FOLFOX resulted in: incremental life years gained of 0.358 and 0.413; additional QALYs of 0.281 and 0.320; incremental cost effectiveness ratios (ICERs) of €69,287 and €63,245 per QALY and ICERs in specialised centres of €34,646 and €40,529. The ICER is mainly driven by the number of patients becoming resectable the acquisition cost of cetuximab, and parameterisation of the progression-free survival curves. CONCLUSIONS: The analysis demonstrates the role of cetuximab in enabling curative surgery which drives the cost-effectiveness. When assessing a highly selected group of patients within a subset with wild-type KRAS, the ICERs are close to UK willingness to pay acceptance thresholds.

A MODELLING APPROACH FOR THE UK COST EFFECTIVENESS OF CETUXIMAB IN FIRST LINE TREATMENT OF METASTATIC COLORECTAL CANCER

FOLFOXIRI: A NOVEL COMBINATION OF CETUXIMAB, IRINOTECAN AND FOLFOX IN THE TREATMENT OF FIRST-LINE METASTATIC COLORECTAL CANCER

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OBJECTIVES: To estimate the cost-effectiveness of the addition of cetuximab to FOLFOXIRI in comparison with chemotherapy alone. Treatment with trastuzumab was estimated to partially offset mean event and state costs compared to chemotherapy.
alone. These results corresponded to an incremental cost-effectiveness ratio (ICER) equivalent to SR20,423 (US$5,439) per life-year gained and SR21,857 (US$5,821) per QALY gained. Sensitivity analyses showed these results to be robust under a range of plausible assumptions. CONCLUSIONS: Adjuvant treatment with trastuzumab in HER2+ early breast cancer was estimated to be a cost-effective treatment option over patients’ lifetimes in Saudi Arabia, attributed to improvements in life expectancy and QALYs that translate into a high net benefit to the society.

PCN21

COST-EFFECTIVENESS OF LAPATINIB PLUS CAPECITABINE FOR WOMEN WITH HER2+ METASTATIC BREAST CANCER PREVIOUSLY TREATED WITH TRASTUZUMAB IN FINLAND

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OBJECTIVES: To evaluate the cost-effectiveness of lapatinib plus capecitabine (L+ C) vs. currently used regimens in Finland for women with HER2+ metastatic breast cancer which has progressed following trastuzumab treatment. METHODS: A survival analysis model with a lifetime timeframe was used to calculate expected costs, Life Years (LYs), and Quality Adjusted Life Years (QALYs) for L+ C vs. usual care in women with HER2+ MBC who have progressed following trastuzumab treatment. Usual care was represented as a weighted average of currently-used treatments in Finland, including continued trastuzumab-based therapy (50%) and single-agent chemotherapy (50%). The effectiveness of L + C and single-agent chemotherapy was based on data from a phase III randomized open label multi-centre trial comparing L + C with capecitabine alone in women with HER2+ MBC who had received prior treatment with an anthracycline, a taxane, and trastuzumab. Effectiveness of trastuzumab-based therapy was based on a pooled analysis of data from published studies. The analysis was performed from a societal perspective. Costs were obtained from official price-lists. Utilities were obtained from international publications. Costs and outcomes were discounted at 5%, consistent with Finnish guidelines. RESULTS: Compared with usual care, treatment with L + C yields an additional 0.216 LYs and 0.157 QALYs at an incremental cost of £8310. Cost-effectiveness of L + C vs. usual care is £38,481 per LY gained and £52,911 per QALY gained. The cost-effectiveness of L + C vs. usual care is sensitive to the proportion of usual care patients who receive continued trastuzumab vs. single-agent chemotherapy. Assuming there are 130 candidates for L + C in Finland each year, the budget impact of L + C is approximately €1.5M per year. CONCLUSIONS: For patients with HER2+ MBC who have progressed on trastuzumab, treatment with L + C meets an unmet clinical need and is cost-effective in this setting, IV administered treatment can cause over 12,000 additional costs per year compared with oral formulations.

PCN22

AN ECONOMIC EVALUATION OF CAPECITABINE/CISPLATIN PLUS 5-FU/CISPLATIN REGIMENS IN TREATMENT OF ADVANCED GASTRIC CANCER IN SPAIN

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OBJECTIVES: A randomized phase III trial of Capecitabine/Cisplatin (XP) versus continuous infusion of 5-FU/Cisplatin (FP) as first-line therapy in patients with advanced gastric cancer (AGC) met its primary endpoint of non-inferior progression-free survival (PFS). There was a trend toward superior efficacy with XP in terms of both PFS and response rates. An economic assessment was conducted in Spain to compare the costs of both therapies considered unit costs and medical resource consumption for year 2007. METHODS: Direct medical costs were estimated from the Spanish National Healthcare System perspective. The therapies were estimated based on the clinical trial results on actual dose and the number of administrations, and unit costs in different hospitals in Spain. The adverse event (AE) profiles were used to estimate the costs of treating AEs. An expert panel estimated treatment patterns and costs of treating major AEs. Indirect costs for time and travel for drug administration were also estimated. RESULTS: Annual pharmacologic cost in the XP arm were estimated to be €13,333 greater than in the XP arm, but drug administration costs and AE costs were lower in the XP arm (€2,575 and €27, respectively). Overall, direct and indirect medical costs were estimated at €26,887 in the XP arm and at €40,114 in the FP arm. According to budget impact results, 1.58 patients are likely to be treated with XP for each patient treated with FP. CONCLUSIONS: In Spain, oral capecitabine reduce the number and time spent in infusion visits, and would produce significant direct medical cost savings in the treatment of patients with AGC. Given the trend to superior efficacy, the estimate direct and indirect cost savings, and the convenience of oral treatment, XP treatment would be considered less costly than FP treatment for AGC from both a health care system and a societal perspective.

PCN23

COST EFFECTIVENESS OF CLODRONATE AND ZOLENDRONATE FOR THE TREATMENT OF METASTATIC BONE DISEASE IN BRAZIL: PUBLIC HEALTH PERSPECTIVE

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OBJECTIVES: Bone is the most common site for metastasis in cancer and bone metastases (BM) result in considerable morbidity and complex demands on health care resources. Bisphosphonates have been shown to treat and reduce skeletal-related events (SREs), which reduce quality-of-life and increase the risk of death. The aim of this study was to evaluate the cost-effectiveness of clodronate and zoledronate in the prevention of SREs in patients with BM. METHODS: We developed a Markov model to represent a cohort of patients diagnosed with BM in order to determine the cost-effectiveness of the studied therapeutic alternatives. The model has four health states: without SRE, with SRE (i.e., pathologic fracture, radiotherapy or surgery, and hypercalcemia), osteonecrosis and death. Transition probabilities came to represent a cohort of patients diagnosed with BM in order to determine the cost-effectiveness of the studied therapeutic alternatives. The model has four health states: without SRE, with SRE (i.e., pathologic fracture, radiotherapy or surgery, and hypercalcemia), osteonecrosis and death. Transition probabilities came from SREs incidence rate meta-analysis previously performed by our group. Economical data were obtained from national databases. Univariate and multivariate sensitivity analyses were used to determine the robustness of the pharmacoeconomic model. We used the public health perspective. Costs were presented in 2007 Brazilian Reais (1R$ = 1.60US$) RESULTS: BM treatment total cost in Brazil (on average, per patient) in five years (base case) was R$46,313 with clodronate and R$50,319 with zoledronate. Drug cost was the most influential item in the overall cost of BM treatment (>90%). In a five-year time-horizon, clodronate and zoledronate generated (on average, per patient) 2.00 and 1.90 QALYs, respectively. In this same time-horizon, clodronate and zoledronate also generated (on average, per patient) 1.81 and 1.76 SRE-free-years, respectively. When we analyzed zoledronate