ISPOR Fifth Annual European Congress Contributions Presentation Abstracts

Contributed Podium Presentations

SESSION I

CANCER STUDIES

A STOCHASTIC ECONOMIC EVALUATION OF LETROZOLE VERSUS TAMOXIFEN AS A FIRST-LINE HORMONAL THERAPY FOR ADVANCED BREAST CANCER IN POSTMENOPAUSAL PATIENTS IN GERMANY

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OBJECTIVE: This paper presents the results of an economic evaluation comparing Letrozole, a third generation aromatase inhibitor, and Tamoxifen as first-line hormonal therapies in postmenopausal women diagnosed with advanced breast cancer in Germany. METHODS: A recently published economic model was applied in which data from a recent RCT comparing Letrozole and Tamoxifen were employed supplemented with data from the literature and expert panels. German cost data was introduced. These data were synthesised within a Markov process that described relevant events along patients pathways from diagnosis to death and analysed using decision modelling software. The evaluation perspective was that of the German healthcare system. The time horizon covered the full lifetime of the patients. Discount rates of 5% for resources and 5% for life years were applied to all analyses due to missing guidance in Germany like UK Treasury guidelines. A probabilistic sensitivity analysis was undertaken in line with the original model. RESULTS: The mean baseline results derived from the stochastic analysis of the model for both Letrozole and Tamoxifen show that patients receiving Letrozole gain an additional 0.30 life years, whilst the difference in lifetime treatment costs is €802.45. The mean cost of gaining an additional life year from the use of Letrozole was estimated as €2,673.50. Limits of the “credible interval” for the incremental cost-effectiveness ratio (ICER) were at the 5th percentile “Letrozole dominating”, whilst the 95th percentile reveals an ICER of €7,394.75 per life year gained. CONCLUSION: The model extrapolated the available clinical trial data using published data, expert opinion and German cost data to estimate the cost per life year saved in Germany compared to the standard first-line therapy of Tamoxifen. The mean results indicate that in Germany Letrozole is a cost-effective alternative first-line therapy compared to Tamoxifen.

ECONOMIC EVALUATION OF NEW POLY-CHEMOTHERAPY REGIMENS AS ALTERNATIVES TO CISPLATIN PLUS PACLITAXEL IN ADVANCED NON-SMALL CELL LUNG CANCER

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OBJECTIVE: Most newly diagnosed non-small cell lung cancers are too advanced at detection to be surgically amenable. Recently it was found that poly-chemotherapies may improve these patients’ survival significantly, but no single regimen has yet been definitely determined as preferable. This study reports an economic evaluation of cisplatin-paclitaxel, considered the standard therapy in the trial, compared to cisplatin-gemcitabine and paclitaxel-gemcitabine respectively. METHODS: Data on the use of medical resources were collected in a phase III clinical trial comparing the regimens. Costs are determined from the viewpoint of the Dutch health insurance system. The principal outcome measure for the economic evaluation is mean survival time estimated by a restricted means analysis with restriction time point determined by statistical criteria. Costs are corrected for censoring using Lin’s subinterval method, and the impact of uncertainty is examined by applying bootstrap techniques. The analysis focuses on estimation of the joint density of cost and outcome differences, quantification of the uncertainty surrounding base case point estimates and derivation of cost-effectiveness acceptability curves. RESULTS: Base case estimates of costs and outcomes are virtually identical for the cisplatin-paclitaxel and cisplatin-gemcitabine groups. Average total cost (ATC) per patient in each arm is around €17,000, but the cost composition differs considerably. Higher cytotoxics costs in the cisplatin-paclitaxel group are balanced by higher costs of hospitalization and blood transfusions in the cisplatin-gemcitabine group due to a higher incidence of severe hematological toxicities and emesis. Gemcitabin-paclitaxel leads to considerably higher ATC of €20,900 per patient and a non-significant reduction of survival time compared to cisplatin-paclitaxel. CONCLUSION:
Estimates of survival and costs are identical for cisplatin-paclitaxel and cisplatin-gemcitabine. There was a higher incidence of severe toxicities with cisplatin-gemcitabine, but differences in QoL are still to be determined. Gemcitabine-paclitaxel is a dominated option with higher costs and non-superior survival.

IMMUNOTHERAPY WITH AUTOLOGOUS TUMOR CELL-BCG VACCINE (ONCOVAX®) IN PATIENTS WITH STAGE II COLON CANCER: MEDICAL AND ECONOMIC BENEFITS

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OBJECTIVES: Colon cancer is one of the most common malignancies in developed countries. Surgery is the primary treatment modality for this disease. However, by the time the patient presents with recurrent symptoms, the disease is rarely curable by surgery even when combined with other therapy. The aim was to assess the clinical and economic outcomes of OncoVAX®, therapy in stage II colon cancer patients. METHODS: We have completed a prospectively randomized, controlled clinical trial of patients with Stage II colon cancer with active specific immunotherapy (ASI) using autologous tumor cell with an immunomodulating adjuvant bacillus Calmette-Guérin (BCG) vaccine (OncoVAX) in an adjuvant setting. Patients were randomized to either a control group or (OncoVAX) therapy, after surgical resection of the primary tumor and stratification by stage of disease. The cost analysis consisted of the direct health care costs. For the model, the costs and probabilities of the several interventions, disease stages and follow-up have been calculated. Survival and recurrence free survival were used from the clinical study. Utility values were derived from the literature. RESULTS: OncoVAX significantly improved survival and recurrence-free survival. The number of life years in the OncoVAX group amounted to 6.96 and in the control group 6.17. The number of recurrence-free life years gained is approximately 1.14 more in the OncoVAX group. The average costs per patient in the OncoVAX group amounted to US$20,395 and in the control group US$19,541. The total discounted cost-effectiveness ratio was US$22,660 and the discounted cost-utility ratio amounted to US$23,675 (discount rate: 4%). CONCLUSION: This study shows that OncoVAX is an effective treatment modality for patients with stage II colon cancer with a cost-effectiveness ratio in the range of other oncolgical treatments.

CARDIOVASCULAR DISEASES/DISORDERS STUDIES

CV I

COST-EFFECTIVENESS OF FONDAPARINUX VS ENOXAPARIN AS PROPHYLAXIS AGAINST VENOUS THROMBOEMBOLISM FOLLOWING ORTHOPAEDIC SURGERY

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OBJECTIVES: Patients undergoing major orthopaedic surgery are at risk of deep vein thrombosis, pulmonary embolism and subsequent complications, some of which may be fatal. For this reason post-operative prophylaxis is recommended. Enoxaparin is the most frequently used chemical prophylaxis in the UK. Fondaparinux is a novel antithrombotic whose efficacy has been demonstrated, but whose cost-effectiveness has not been assessed. We evaluated the cost-effectiveness of fondaparinux relative to enoxaparin over a period of five years post-surgery. METHODS: We modeled the impact of fondaparinux on patient outcomes and costs to the UK National Health Service (NHS). Outcomes are thromboembolic events (symptomatic deep vein thrombosis, pulmonary embolism) and death. Data on the incidence of thromboembolic events were derived from four randomised clinical trials comparing enoxaparin with fondaparinux, and from a review of the literature. Resource consequences were estimated from a survey of UK hospitals and discussions with a panel of clinical experts. Costs were estimated using mean national costs to the NHS. RESULTS: Fondaparinux dominates enoxaparin for all of the surgery groups studied. The number of venous thromboembolic events (VTE) averted with fondaparinux is 1.5 per 1000 procedures (Total Hip Replacement), 1.95/1000 (Total Knee Replacement), 23.3/1000 (Hip Fracture Surgery) and 19.2/1000 (All Procedures). The number of VTE-related deaths averted is 0.8/1000 (THR), 0.8/1000 (TKR), 5.9/1000 (HFS) and 3.1/1000 (All Procedures). Fondaparinux reduces expected cost per patient by £18 (THR), £41 (TKR), £30 (HFS) and £29 (All Procedures). CONCLUSIONS: Compared with current practice in the UK, fondaparinux is cost-effective. This conclusion is sensitive to the relative price difference between enoxaparin and fondaparinux, but it is robust to variations in all of the other key parameters in the model. We estimate that using fondaparinux could reduce NHS costs by £3.8 million annually.

CV II

ESTIMATION OF EXPENDITURES FOR CORONARY HEART DISEASE (CHD) IN GERMANY

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OBJECTIVES: Coronary heart disease (CHD) in Germany is the most frequent cause of death in men and women. Coronal heart disease can be prevented through lifestyle modifications and early diagnosis and treatment. METHODS: We modeled the incidence of CHD in Germany from 1995 to 2010 using age and gender specific incidence rates. Costs and consequences were derived from the literature. RESULTS: The number of newly diagnosed patients with CHD in Germany reached 19,700 in 1995 and 32,750 in 2010, amounting to £17,590 million annually. CONCLUSIONS: The cost of CHD in Germany is substantial. Improved management and prevention of CHD could yield significant cost savings.