PCN40 | YEARLY TREATMENT COST ANALYSIS OF BIOMEDICAL THERAPIES FOR FIRST-LINE TREATMENT OF METASTATIC COLORECTAL CANCER IN SPAIN

Martínez-Amores B1,2, Mezquita L2, Ibáñez de Cáceres I1, Ayuso A3, Peña JM4, Perona R1, Grande I1, Belaï-Deënse C4

1Hospital Joan Carles, Madrid, Spain, 2Centro Integral Oncológico Clara Campel (CIOC), Madrid, Spain, 3European Institute for Pharmaeconomic Research, Vienna, Austria

OBJECTIVES: In real practice, patients are treated along the entire year so that budget simulations should be adjusted to chronological patterns of oncological assistance. Deferred budget impact analysis is underway in order to assess long-run economic implications of clinical decisions. First-line mCRC treatments in Spain. METHODS: As metastatic colorectal cancer diagnosis is not affected by seasonal influences, we have created a mathematical model assuming that a single patient is diagnosed every month and this patient has a 53% possibility to harbor a native metastasis. First-line mCRC treatment is defined by the median duration of therapy. For bevacizumab-based therapy, budget impact for year t+1 begins at month 5 and beyond. For patients that receive cetuximab-based therapy, budget impact for year t+1 begins at month 7. The same approach was performed for doublet without any monoclonal antibody. Prices for all drugs in Spain were assumed to represent the best-value for each drug including all possibilities to reduce pharmacy costs. For first line, median duration of therapy reported by randomized trials was used to calculate the final budget. 70kg and 1.7 m were used as reference for patient dose calculations. RESULTS: When K-Ras status is not tested and bevacizumab-based schedules are administered to every patient, annual growth of budget increases by 55-60%. If K-Ras status is analyzed and wild-type patients are treated with cetuximab combinations and mutated patients receive bevacizumab, yearly budget growth amounts to 39-41%. Annual budget growth is minimized (25%) if K-Ras wild-type patients are treated with cetuximab, and mutated patients are treated with bevacizumab. When K-Ras wild-type patients received bevacizumab, tumours received chemotherapy alone. CONCLUSIONS: Duration of therapy plays a key role on budget impact estimations from both overall and year to year perspectives. K-Ras based clinical decisions not only optimize outcomes as measured by response rates but also minimize economic implications on annual budget growths.

PCN41 | COST-EFFECTIVENESS ANALYSIS OF IMMUNONUTRITION FOR UPPER GASTROINTESTINAL CANCER PATIENTS UNDERGOING SURGERY IN BRITISH HOSPITALS

Chevrou-Severac H1,2, Eijgelshoven I2, Weijers L2

1Nestle Health Science, VEEV, Switzerland, 2MAPI Consultancy, Houten, The Netherlands

OBJECTIVES: Immunonutrition (IN) with arginine has been demonstrated in many randomized clinical trials (RCTs) to decrease the risk of complications and the length of hospital stay (LOS) in cancer patients undergoing gastrointestinal (GI) surgery (Ceranola et al. 2011). This study aims at assessing the cost-effectiveness of IN for upper GI cancers patients undergoing surgery in the National Health System (NHS). METHODS: Clinical data were retrieved from the meta-analysis of Ceranola et al. 2011. Both the decrease in LOS due to IN and the relative risk (RR) of overall complications (Chevrou-Severac et al, 2011) were taken into account. Hospital cost data (upper GI cancer surgical patients) were extracted from the Healthcare Resource Group codes of the NHS Payment by Results 2011/12 and Hospital Episode Statistics (HES) data (upper GI cancer surgical patients) were extracted from the Healthcare Resource Group codes of the NHS Payment by Results 2011/12 and Hospital Episode Statistics (HES) data (upper GI cancer surgical patients). RESULTS: The RR of overall complications were 0.69 for pre-operative and 0.62 for peri-operative use of IN. Hospital LOS decreased by 2.42 days if the post-operative use of IN. Weighted national average hospital cost (GI cancer surgery) was £829 per day. Weighted national average cost of stay for patients with complications was £9,766 per patient and £5,421 per patient without complications. Based on the LOS decrease, IN is cost savings in upper GI surgery compared to surgery (saving £1,955 to £2,095 per patient). Even for an initial complication rate as low as 5% in the control group, pre-operative use of IN led to savings. CONCLUSIONS: Immunonutrition is an effective and cost-saving intervention for the NHS: savings up to £1,955 per patient-stay with pre-operative use of IN in patients undergoing surgery for upper GI cancer is an efficient intervention for British hospitals, as it decreases LOS, post-surgical complications and hospital costs.

PCN42 | COST OF PROSTATE IMAGE-GUIDED RADIATION THERAPY: RESULTS FROM A RANDOMIZED TRIAL

Perso A1,2, Jiao L1,4, Remminger P1, Lagrange L2, Laplanche A2, De Crevourot B1,2

1Dartmouth Medical School Cancer Centre, Lyons, France, 2University Hospital Henri Mondor, Créteil, France, 3Institut Gustave Roussy, Villejuif, France, 4Eugène Marquis Cancer Centre, Rennes, France

OBJECTIVES: Image-Guided Radiation Therapy (IGRT) is an innovative technique allowing real-time three-dimensional control of the position of the anatomical target volumes before or during sessions of irradiation. In case of prostate cancer, IGRT allows clinicians to localize the tumor, either with Cone Beam Computed Tomography (CBCT) or by portal imaging with Fiducial Markers (FM). A weekly positioning control is generally carried out. However, daily controls has been recommended in case of Intensity-Modulated Radiation Therapy (IMRT) delivering high dose in the prostate. Therefore, a cost analysis investigating IGRT with CBCT and FM according to the positioning frequency daily weekly in prostate cancers was conducted. METHODS: The cost-analysis was performed in a multicenter randomized phase III trial. Patients included received radiotherapy for a localized prostate adenocarcinoma. Cost calculations were strictly based on a micro costing approach according to the hospitals’ point of view. Time horizon included radiation therapy. A base case was given in 2009 euros. Comparisons were performed using Wilcoxon Mann-Whitney test. Uncertainty was assessed by probabilistic sensitivity analyses and probabilistic analysis using a non-parametric bootstrap method. RESULTS: A total 208 patients were enrolled in seven French centres from January 2007 to May 2011. Protocol deviations reduced the number of patients included in the study to 183. Assuming the over cost of positioning controls (€679 per patient, compared to weekly controls (n=61, p<0.0001). For FM, the over cost of daily positioning controls (n=26) reached €187 per patient compared to weekly controls (n=25, p<0.0001). Variations in depreciation periods of the accelerator and time dependent to the radiotherapists have the highest impact on costs. CONCLUSIONS: The study highlights incremental costs incurred by different frequencies of positioning with IGRT in prostate cancers. Cost-effectiveness studies have to be conducted in order to shed further light on which strategy to focus on based on clinical benefit.

PCN43 | COST ASSESSMENT OF COMPANION DIAGNOSTICS IN BREAST CANCER

Thakur D, Rua R, Kaur S, Shanaran N, Kaur H

HERON Health Pvt. Ltd., Chandigarh, Chandigarh, India

OBJECTIVES: Companion diagnostics (CD) is a new approach to personalised medicines for safer and more efficacious selection of treatments. This review was conducted for cost assessment of CDs in breast cancer (BC). METHODS: Embase® and MEDLINE® databases were systematically searched until June 2012 to identify economic studies on CDs in BC. All economic studies in English language, regardless of design and diagnostic test assessed were included. Eligibility of studies was assessed by two reviewers with any discrepancy reconciled by a third, independent reviewer. RESULTS: A total of 202 studies were retrieved, 24 met predefined inclusion criteria. Fifteen studies assessed cost of Oncotype Dx, two Mammaprint, two Her2 test, one IHC, and three both Oncotype Dx and Mammaprint tests. An Irish study reported that an approximate cost-neutrality (0.4% increase in cost) to its health care system on adoption of Oncotype DX test (Lacey 2010). Another study in Canada reported that the introduction of Oncotype Dx would result in cost saving of $27.0m in first year and $28.2m by third year (Hassan 2013). The ICER for Mammaprint was estimated as $3,873/QALY exhibiting its cost-effectiveness (Kondo 2012). In Israel, Oncotype Dx increased QALY by 0.170 years with $10,770/QALY gained by reducing the chemotherapy disutility (Klang 2010). In Australia, cost savings in reduction in chemotherapy due to Oncotype Dx was estimated to be $2264/woman. The cost of assay was estimated to be $4200 with a published utility rate of 0.5, resulting in ICER of $9986/QALY compared without diagnostic test (O’Leary 2010). CONCLUSIONS: The findings from the published data reflect that CDs are cost-effective and demonstrate quality of life and survival benefits of a more targeted approach to treatment decision-making. Literature is suggestive that using a personalised approach through initial diagnostic tools for BC can help in reduction of chemotherapy usage and cost savings in health care services.

PCN44 | COST COMPARISON ANALYSIS OF ANTIBODY THERAPIES IN THE METASTATIC COLORECTAL CARCINOMA

Mergo N, Said M, Dragostis A, Walter E

Institute for Pharmacoeconomic Research, Vienna, Austria

OBJECTIVES: Due to the increasing cost pressure, it is necessary to rely on cost-effectiveness analyses of the three monoclonal antibodies (Bevacizumab, Panitumumab, Cetuximab) in the treatment of colorectal cancer, which differ in their cost structure. Thus, this study aims to compare the costs of approved antibodies therapy are able to demonstrate the possible potential savings through the therapy with Bevacizumab. METHODS: Cost-effectiveness analyses of companion diagnostics (CDs) in breast cancer were conducted for cost assessment of CDs in breast cancer (BC). RESULTS: When K-Ras status is not tested and bevacizumab-based schedules are administered to every patient, annual growth of bud-
with breast cancer in the UK. METHODS: A previously published decision tree model was populated and developed with the data from the Friday Breast Cancer trial. Data was used to assess the effectiveness of using branded Taxotere® versus its generic counterpart docetaxel from the UK NHS perspective. RESULTS: If the branded Taxotere® was promoted as the first-line therapy, it would cost the UK NHS £411.54 per vial per patient with 0.434 QALY (Quality-Adjusted Life Years) gain compared to £412.98 with the generic docetaxel. Promoting the generic docetaxel was instead found to be the cheaper therapy. Although the acquisition cost of docetaxel is more than 50% less than that of Taxotere®, when the acquisition cost ofdocetaxel is based on its lower acquisition cost, only, would result in the increasing the total health care cost compared to Taxotere®. CONCLUSION: Sensitivity analysis on the decision tree model generated in this study, promoting the branded Taxotere® is more cost-effective compared to its generic counterpart docetaxel. This should be considered for implementation in practice and for future guidelines.

PCN46 COST-EFFICACY ANALYSIS OF LICENSED DRUGS FOR THE TREATMENT OF PENILE CANCER: RESULTS OF THE UK NHS ADAPTATION OF THE H2 Nilotinib (AA) VS. Placebo (PP) randomized controlled trial was found to be the main cost driver. Most of the costs occurred in the initial and terminal treatment phases. Inpatient costs, outpatient visit costs, and hospitalization costs.

CONCLUSIONS: Based on the decision tree model generated in this study, promoting the branded Taxotere® is more cost-effective compared to its generic counterpart docetaxel. This should be considered for implementation in practice and for future guidelines.

PCN49 COST-EFFICACY ANALYSIS OF LICENSED DRUGS FOR THE TREATMENT OF PENILE CANCER: RESULTS OF THE UK NHS ADAPTATION OF THE H2

CONCLUSIONS: Based on the decision tree model generated in this study, promoting the branded Taxotere® is more cost-effective compared to its generic counterpart docetaxel. This should be considered for implementation in practice and for future guidelines.

ECONOMIC BURDEN OF MELANOMA IN RUSSIA

OBJECTIVES: To estimate the cost associated with melanoma in Russia in 2009. METHODS: Prevalence-based cost-of-illness analysis (COI) was performed from the payer’s point of view (national and regional governments). Direct medical costs (hospital and outpatient services) and drug costs. To access non-medical costs, we used data on indirect costs and were estimated with the friction cost method. RESULTS: The total costs of melanoma in Russia in 2009 was 771.2 million EUR (€78,200), or 11.85% of average cost per patient per year. Almost half of total costs (48.3%) occur in patients during the 1st year after diagnosis. The direct medical costs accounted for 52.41% of total spending, direct non-medical costs for 34.9%, and indirect costs for 12.6%. Direct medical costs represented 72.8% of total spending in melanoma patients within the 1st year after the diagnosis; during the subsequent years after the diagnosis this number reduces to 34.2%.

CONCLUSION: Our analysis demonstrates that the main significant part of medical costs for melanoma occur during the 1st year after diagnosis that corresponds with the results of other COI studies on oncology; in subsequent years the main costs are outside the scope of health care system.

PCN50 TREATMENT PATTERNS, HEALTH CARE UTILIZATION, AND COSTS OF OVARIAN CANCER IN CENTRAL AND EASTERN EUROPE USING A DELPHI PANEL BASED ON A RETROSPECTIVE CHART REVIEW

OBJECTIVES: Despite the considerable disease burden of ovarian cancer (OC), there were no cost studies in Central and Eastern Europe. This study aimed to describe treatment patterns, health care resource utilization and costs associated with OC in Hungary, Poland, Serbia and Slovakia. METHODS: Overall clinical practice for management of epithelial ovarian cancer was described through the use of a 20-item questionnaire and employing a matched pairs design. METHODS: Our analysis is based on administrative data of a German sickness fund covering a 5-year period (2005-2009). A total of 42,085 cancer patients were included. Disease-specific costs were estimated by matching cancer patients to counterparts without the particular condition and subsequently comparing the costs of the two groups. One-to-one matching was performed by application of the propensity score method to balance patient characteristics among the cancer groups and non-cancer controls. The cost categories considered in this study included prescription drug costs, outpatient visit costs, and hospitalization costs. RESULTS: The mean cancer-associated 5-year costs per patient amounted to €9,524 for colorectal cancer, €13,200 for breast cancer, and €4,750 for prostate cancer. The average disease-attributable costs of the first year following diagnosis were €8,750, €4,300, and €7,500 for colorectal, breast and prostate cancer, respectively. Corresponding excess costs of the last year of life were €14,800, €10,950, and €11,750. Costs associated with hospitalization accounted for a major part of the total disease-specific costs (up to 80%). CONCLUSIONS: This cost-of-illness study based on claims data analysis confirms the enormous burden of colorectal, breast, and prostate cancer.

PCN48 THE COST OF TREATING PENILE CANCER IN ENGLISH HOSPITALS: PRELIMINARY RESULTS USING THE HOSPITAL EPISODES STATISTICS (HES) DATABASE

OBJECTIVES: To estimate the cost of treating penile cancer in English hospitals, using data from the HES database. This investigation is part of a wider project aimed at quantifying the financial burden of selected cancers in the UK. METHODS: Sensitivity and cost analyses for patients with penile cancer between the years 2006/07 to 2010/11 were retrospectively analysed. Data was obtained from HES, a database covering English hospital activity, with inpatient episodes aggregated into spells of care associated with a specific Healthcare Resource Group (HRG). The HRGs were linked to costs from the UK National Tariff in order to calculate the average annual and per patient payments for inpatient treatment of penile cancer, as per the NHS Payment by Results framework. Where necessary, costs were supplemented by expert opinion and other published sources. RESULTS: The mean annual amount paid to English hospitals for inpatient treatment of penile cancer in England was estimated to be £2,391,700, with a further £189,106 paid for carcinoma in situ of the penis. Per patient and mean costs were approximately £3,743 and £275,9, respectively. Outpatient costs were considerably lower, due to the majority of care being delivered in an inpatient setting and issues with HES outpatient data collection. Further research into outpatient costs is currently ongoing. CONCLUSIONS: The burden of penile cancer in the UK has cost implications, the full extent of which cannot yet be ascertained due to underestimation of outpatient costs. Any preventive intervention aimed at decreasing this burden should be carefully considered.