PCN40

YEAR TO YEAR BUDGET IMPACT ANALYSIS OF BIOLOGICAL THERAPIES FOR FIRST-LINE TREATMENT OF METASTATIC COLORECTAL CANCER IN SPAIN

Martínez-Amores B[1], Mezquita L[2], Ibáñez de Cáceres I[3], Ayuso Á[2], Peña JM[4], Perona R[3], Grande E[5], Belda-Iniesta C[6]
[1]*Hospital Rey Juan Carlos, Madrid, Spain,* [2]*Centro Integral Oncológico Clara Campal (CIOCC), Madrid, Spain,* [3]*IdiPAZ, Madrid, Spain,* [4]*School of Informatics. UPM, Madrid, Spain,* [5]*Hospital Universitario Ramón y Cajal, Madrid, Spain,* [6]*Centro Integral Oncológico Clara Campal (CIOCC), Madrid, Madrid, Spain*

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 undergone in order to assess long-run economic implications of clinical decisions on first-line mCRC therapies 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 K-Ras sequence. Calculi were arranged based on 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 doublets 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%) when K-Ras wt patients are treated with cetuximab combinations whereas K-Ras mutated 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 H[1], Eijgelshoven I[2], Weijers L[2]
[1]*Nestle Health Science, VEVEY, Switzerland,* [2]*MAPI 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 (Cerantola et al. 2011). This study aims at assessing the cost-effectiveness of IN for upper GI cancer patients undergoing surgery in the National Health System (NHS). **METHODS:** Clinical data were retrieved from the meta-analysis of Cerantola. 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. The cost of stay based on the LOS for the IN and the control group were calculated. Finally a sensitivity analysis of the baseline (control group) complication rate was carried out. **RESULTS:** The RR of overall complications were 0.69 for pre-operative and 0.62 for peri-operative use of IN. The hopspital LOS decreased by 2.42 days ifor pre- and 1.63 days for peri-operative use of IN. Weighted national average hospital cost (GI cancer surgey) 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 control (savingsf £1,955 to £1,093 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. Immunonutrition 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

Perrier L[1], Morelle M[1], Pommier P[1], Lagrange JL[2], Laplanche A[3], De Crevoisier R[4]
[1]*Leon Berard Cancer Centre, Lyon, France,* [2]*University Hospital Henri Mondor, Créteil, France,* [3]*Insitut Gustave Roussy, Villejuif, France,* [4]*Eugene Marquis Cancer Centre, Rennes, France*

OBJECTIVES: Image-Guided Radiation Therapy (IGRT) is an innovative technique allowing 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 versus 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. All costs were given in 2009 euros. Comparisons were performed using Wilcoxon Mann-Whitney test. Uncertainty was captured by one-way 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. For CBCT, the over cost of daily positioning controls (n=67) reached €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=29, p<0.0001). Variations in depreciation periods of the accelerator and time spent by 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, Jha R, Kaur S, Sharan 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 pre-defined inclusion criteria. Fifteen studies assessed cost of Oncotype Dx, three Mammaprint, two HercepTest, 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 2011).The ICER for MammaPrint was estimated as ¥3,873,922/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 due to 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 reflects that CDs were cost-effective and demonstrated 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

Mercsanits D, Said M, Dragosits A, Walter E
Institute for Pharmaeconomic Research, Vienna, Austria

OBJECTIVES: Due to the increasing cost pressure, it is necessary to rely on cost-effective-therapies. Currently there are 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 therapies from the hospital perspective. **METHODS:** The cost analysis includes all direct resources in the course of medication therapy. All relevant direct medical costs associated with the treatment were detected and quantified: drug costs of the antibodies, medical consumables, personnel costs and KRAS-testing. Furthermore, the number-needed-to-treat (NNT) for the three alternatives was calculated. Additionally, based on the total costs, a cost-effectiveness-depiction represents the additional costs of the overall-survival (OS) per month. **RESULTS:** The absolute benefit of the add-on-therapy leads to a longer progression-free-survival (PFS) in the treatment-group compared to the control-group. The relative superiority in PFS for Bevacizumab is 82.4%, 17.9% for Cetuximab and 20% for Panitumumab. Based on the PFS, the NNT for Bevacizumab accounts for 2 patients, 6 for Cetuximab and 5 for Panitumumab vs. the control-group. According to the frequency of the number of administrations, the total cost for Bevacizumab amounts to €2,442.87 per month, €3,693.89 for Cetuximab and €3,671.37 for Panitumumab. The savings of Bevacizumab vs. Cetuximab, based on the total cost, are €1,251.02 per month. The cost difference of Bevacizumab compared with Panitumumab amounts to €1,228.50 per month. Based on the indirect comparison trial (ITC), the monthly costs per OS for Bevacizumab amounts to €1,035.19 compared with Cetuximab (€1,611.55) and Panitumumab (€1,609.19). With regard to the overall treatment, the cost savings amounts to €7,581.58 for Bevacizumab compared to Cetuximab and for Panitumumab €8,719.54. **CONCLUSIONS:** The presented data of the cost-comparison-analysis for the approved antibodies therapy are able to demonstrate the possible potential savings through the therapy with Bevacizumab.

PCN45

ECONOMIC EVALUATION OF USING BRANDED TAXOTERE® VERSUS GENERIC DOCETAXEL: BASED ON DECISION TREE MODEL

Al Ameri MN, Tucker A, Johnston A
William Harvey Research Institute, Queen Mary University of London, London, UK

OBJECTIVES: To evaluate the cost-effectiveness of prescribing branded Taxotere®compared to its generic counterpart docetaxel for patients diagnosed