Docetaxel is cost-effective and should be used as adjuvant treatment and considered as therapeutic option for MBC.

PCN95

COST-EFFECTIVENESS OF BEVACIZUMAB COMBINATION THERAPY IN METASTATIC COLORECTAL CANCER: RESULTS OF MARKOV COHORT SIMULATION FROM A SOCIAL PERSPECTIVE IN KOREA

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OBJECTIVES: Bevacizumab, known as VEGF inhibitor, has demonstrated significant activity when it is used with cytotoxic chemotherapy together in metastatic colorectal cancer(mCRC). However, bevacizumab is an expensive medication known as not cost-effectiveness with high ICER(Incremental Cost-Effectiveness Ratio) in other countries. The purpose of this study was to examine the economic efficiency of treating mCRC with bevacizumab plus chemotherapy versus chemotherapy alone from the perspective of the social aspects in Korea. **METHODS:** Markov model was developed to compare the cost and benefits of adding bevacizumab to oxaliplatin plus FU/LV(FOLFOX) or capecitabine plus FU/LV(CapeOX) with FOLFOX or CapeOX alone. We searched clinical documentation, extracted median time to progression and median overall survival from each chemotherapy, and calculated the transition probability and death rate per cycle. Model simulates costs and outcomes in hypothetical cohort of metastatic colorectal cancer for 5 years with 5% discount rate. We included that direct and non-direct medical cost(2009). The ICERs were calculated from incremental life-years gained(LYG) and incremental costs between single and combination therapy. Sensitivity analyses were performed on crucial parameters. **RESULTS:** After markov model simulation for 5 years, FOLFOX+bevacizumab gained 1.58 years/patient and FOLFOX 1.42 years/patient, whereas CapeOX+bevacizumab 1.57 years/patient and CapeOX 1.31 years/patient. Total cost of FOLFOX+bevacizumab, FOLFOX, CapeOX+bevacizumab, CapeOX are ₩88,567,199($70,854), ₩73,938,752($59,151), ₩91,904,773($73,524), ₩43,864,530($35,092), respectively. The ICERs of additional bevacizumab when combined with FOLFOX, CapeOX were ₩89,974,151 ($71,979), ₩181,331,641 ($145,065), respectively, per life year gained, proving very high in both case combination therapy. Sensitivity analysis showed that the price of bevacizumab is a key parameter of its cost-effectiveness. **CONCLUSIONS:** As a result, it is proven that the addition of bevacizumab to FOLFOX, CapeOX in mCRC patients is expensive given clinical benefit in terms of LYG in Korea. This findings may offer one of the useful basic data selecting chemotherapy regimens in treating for mCRC.

PCN96

COLORECTAL CANCER SCREENING: COST-EFFECTIVENESS OF CT COLONOGRAPHY

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OBJECTIVES: Colorectal cancer (CRC) is the third most common cancer in the UK. In 2007 the UK NHS introduced a CRC screening programme using the faecal occult blood test (FOBT) for biennial screening of individuals aged 60 to 69. CT colonography (CTC) is an alternative technology for CRC screening with the potential to prevent cancer by detecting pre-cancerous polyps as well as detecting cancer at an early stage. This economic analysis assessed the cost-effectiveness of CTC for CRC screening from the UK NHS perspective. **METHODS:** A state-transition Markov model was constructed to simulate the lifetime experience of a cohort of individuals screened under a range of scenarios using four different CRC screening technologies: FOBT, flexible sigmoidoscopy, optical colonoscopy and CTC. The model estimated lifetime costs and health outcomes; the cost-effectiveness measure was incremental cost per Quality Adjusted Life Year (QALY). The impact of uncertainty in underlying model parameters was evaluated in one-way and probabilistic sensitivity analyses. **RESULTS:** CTC screening every 10 years for individuals aged 60–69 was less expensive and yielded greater health benefits (QALYs and life years) compared to no screening or the current UK programme of biennial FOBT screening. Compared to biennial FOBT, 10-yearly CTC screening for 60–69 year olds is estimated to avoid 661 more cases of CRC and 364 more deaths per 100,000 people invited for screening. CTC was cost-effective under a range of assumptions. The model fit to observed epidemiology data well, and was robust to changes in underlying parameter values. **CONCLUSIONS:** CTC has the potential to provide a cost-effective option for CRC screening and may be cost saving compared to the current programme of biennial FOBT.

PCN97

COST EFFECTIVENESS OF ERLOTINIB TREATMENT GIVEN BY A CLINICALLY BASED APPROACH AND AN EGFR/KRAS TESTING-GUIDED APPROACH ADVANCED IN NON SMALL-CELL LUNG CANCER: A PROSPECTIVE MULTICENTRIC FRENCH STUDY (ERMETIC)

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OBJECTIVES: Although several clinical and biological parameters are prognostic factors, their medico-economic impact in the prescription of erlotinib has never been evaluated. A French NCI prospective study aimed to determine the cost of management of advanced NSCLC patients (pts) treated by erlotinib and to evaluate the cost-effectiveness ratio in populations selected on clinical-guided or biomarkers-guided arguments. **METHODS:** Prospective cohort of consecutive advanced NSCLC pts newly treated by erlotinib and followed until progression or death. Direct medical costs, including erlotinib and hospitalization costs were computed from the health care system perspective with a time horizon of 2 years. Cost-effectiveness ratios (CER) were calculated as management cost divided by the number of days of life remaining (DOLR) when the treatment is initiated, in all patients, in clinical-selected patients (non/ex-smoking women with non-squamous cell carcinoma (SCC) histology) and in biomarker-selected patients. **RESULTS:** A total of **522 patients were enrolled between** 02/07 and 03/08. Median age was 62 years; 32% were females; 63% had adenocarcinoma. With a 15.5 months (mo.) median follow-up, median PFS and OS were respectively 2.4 and 5.6 **mo. Mean management cost was 10284** ± €8562 per patient, with a median of 170 days remaining to live at initiation of erlotinib treatment (€60 / DOLR). Direct erlotinib cost represented 78% of the cost. Non-smoking women with non-SCC histology lived 133 days longer than other patients (279 and 146 days respectively), resulting in an extra-cost management of €2637 due to a longer erlotinib treatment. CER was however lower (€44/DOLR) in non-smoking women with non SCC histology than in other patients (€66/DOLR). CER of biomarkers-selected patients will be available for the congress. **CONCLUSIONS:** Clinical-guided arguments allowed to identify patients with lower management costs per day of life remaining to live. Planned analyses would evaluate the impact of biomarkers in term of cost of management per day of life remaining.

PCN98

COST-EFFECTIVENESS OF PROGNOSIS-BASED STRATEGIES TO SELECT WOMEN WITH BREAST CANCER FOR ADJUVANT CHEMOTHERAPY

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OBJECTIVES: Adjuvant chemotherapy is used to reduce the risk of relapse after surgery. Its limited efficacy in breast cancer must be weighed against induced toxicities and cost. The selection of patients eligible for adjuvant chemotherapy is based on prognostic factors. **Genomic signatures would improve patient selection for adjuvant chemotherapy and avoid overtreatment. The aim of this study is to compare the** cost -effectiveness of different prognosis -based selection strategies in the French context. **METHODS:** We used a model -based simulation. Population characteristics, survival and hospital costs (chemotherapy, chemotherapy -induced toxicities and relapses) were estimated using a patient -level data set from a retrospective cohort of patients followed -up at Gustave Roussy Institute since 1990. All patients were node -negative and metastasis -free after initial surgery. The other model parameters (chemotherapy efficacy, sensitivity and specificity of prognosis -based selection strategies) were obtained from literature. The cost analysis was conducted from a third -party payer's perspective. We used a strategy with no adjuvant chemotherapy as a reference for cost -effectiveness comparisons. **RESULTS:** The retrospective cohort study consisted of 910 women with breast cancer. The mean age was 57 (range: 23–93). Thirty-one percent of patients were Scarff -Bloom grade I, 43% grade II and 19% grade III (7% grade missing). The mean tumor size was 19 mm (range: 1–120). Thirty-two percent of the women received adjuvant chemotherapy alone or combined with another adjuvant treatment. The median follow-up after surgery was 87 months. The median survival time was 209 months. The distant relapse rate was 10.7%. The cost of adjuvant chemotherapy was €3,083 (standard deviation: €307) and the cost of distant relapse €33,692 (range: €847–€112,710). Cost -effectiveness analysis is in progress. Results will be available for the meeting. **CONCLUSIONS:** This is the first French study to assess the cost -effectiveness of using prognostic information to select women eligible for adjuvant chemotherapy in early breast cancer.

PCN99

COST-EFFECTIVENESS ANALYSIS OF IMIQUIMOD VERSUS NO TREATMENT IN PATIENTS WITH SUPERFICIAL BASAL CELL CARCINOMA AND CONTRAINDICATION TO SURGICAL INTERVENTION/CRYOTHERAPY

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OBJECTIVES: To conduct a cost-effectiveness analysis (CEA) of imiquimod compared to no treatment in patients with superficial basal cell carcinoma and contraindication to surgical intervention and cryotherapy in Poland. **METHODS:** This analysis was based on a decision model regarding clinical effects of imiquimod in comparison to placebo (vehicle cream), obtained from randomized clinical trials. The population was defined as adult patients with superficial basal cell carcinoma (sBCC) and contraindication to surgical intervention/cryotherapy, also patients, who do not give consent to these forms of treatment. Clinical and histological complete clearance were assessed as health outcomes. Direct medical costs of the analysed therapies were estimated from the perspective of both payers in Poland (National Health Fund and patient). We included costs of medication, clinic visits and diagnostic assessments. Time horizon of the analysis was 18 weeks. Treatment was assumed as once a day 5x/week for 6 weeks. Costs and effects were not discounted. **RESULTS:** Probability of complete clearance, assessed clinically and histologically was 0.751 for patients treated with imiquimod and 0.017 when placebo was used. Probability of histological complete clearence was 0.822 and 0.031, respectively. Total costs of imiquimod therapy were estimated at 1,075.30 PLN, while costs of no treatment were 174.80 PLN. Incremental

cost-effectiveness ratio (ICER) for the comparison of imiquimod versus no treatment was 1,227 PLN per gained complete clearance assessed clinically and histologically, and 1,138 PLN per gained complete clearence assessed only histologically. **CONCLUSIONS:** Imiquimod is more effective and more expensive than no treatment in patients with superficial basal cell carcinoma and contraindication to surgical intervention and cryotherapy. ICER value is below the acceptable threshold, therefore imiquimod therapy is considered as cost-effective treatment in Poland.

PCN100

COST-EFFECTIVENESS OF ANASTROZOLE AS ADJUVANT TREATMENT FOR EARLY STAGES BREAST CANCER IN POSTMENOPAUSAL WOMEN

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OBJECTIVES: To evaluate the cost-effectiveness of anastrozole (1 mg/day) versus tamoxifen (20 mg/day) as adjuvant treatment for early stages breast cancer in postmenopausal women. **METHODS:** Cost-effectiveness analysis was performed. Markov model was built based on the results of ATAC and ARNO 95 studies. Two strategies of adjuvant therapy—initial therapy with anastrozole and switching to anastrozole after two years treatment with tamoxifen were evaluate in the model, total duration of adjuvant therapy followed in the model was 5 years. The time horizon was equal to patient's life expectancy. **RESULTS:** The results demonstrated that initial adjuvant therapy with anastrozole is cost-effectiveness in patients with high risk of relapse and also in the group of patients younger then 55 years. The cost-effectiveness ratio in the basis variant (population included into ATAC-study, age at the start of adjuvant therapy—65 years) was 1161.4 thousand Rub/QALY (€25,800/QALY). In early debut of cancer at the age of < 55 years, the cost-effectiveness ratio was 728.8 thousand Rub/QALY (€16,200/QALY). From the economic point of view the effective therapy scheme is switching patients to anastrozole after two years of tamoxifen treatment. The cost-effectiveness ratio of this scheme is estimated from 624,6 thousand Rub/QALY (€13,900/QALY) in patients at the age of 55 years to 1209.7 thousand Rub/QALY (€26,900/QALY) in patients at the age of 70 years. In the basis variant (population included into ARNO 95-study age at the start of adjuvant therapy—60 years) the ratio was 776.4 thousand Rub/QALY (€17,300/QALY). **CONCLUSIONS:** The switching the patients in postmenopause to anastrozole after two years of tamoxifen treatment may be considered reasonable from the economic point of view in Russia. The initial adjuvant treatment with anastrozole in patients with high risk of relapse, not belonging to elder age groups, is also economically reasonable.

PCN101

COST-EFFECTIVENESS OF SHORT-ACTING OPIOIDS FOR BREAKTHROUGH PAIN IN CANCER PATIENTS—A SCOTTISH-BASED DECISION-ANALYSIS MODEL

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OBJECTIVES: A decision-analysis model parameterised for Scotland was used to evaluate the cost-effectiveness of intranasal fentanyl spray (INFS, Instanyl®) compared with oral transmucosal fentanyl citrate lozenge (OTFC, Actiq®) and oral transmucosal fentanyl buccal tablet (FBT, Effentora®) for the treatment of BTCP. **METHODS:** The model **estimated costs and benefits associated with INFS, OTFC and FBT. Relative** analgesic efficacy of the interventions was derived from a meta-analysis of six randomised controlled trials. The percentage of BTCP avoided was estimated from the pain intensity (PI) course of a BTCP episode with and without treatment. Resource use and quality of life gains were estimated based on reductions in PI. The relationship between PI and utility was derived from a time-trade off study in the UK general population. Resource use and unit cost data were obtained from the literature and validated by clinical experts. **Uncertainty in the source data was incorporated by** means of one-way sensitivity analyses, probabilistic sensitivity analyses and different scenario analyses. **RESULTS:** For the base-case scenario, 3 BTCP episodes/day, a background PI of 2, a time-horizon of 365 days and equal prices for INFS and OTFC irrespective of dosage were assumed. With INFS, 55% of BTCP (95% Uncertainty Interval: 45–66%) was avoided, greater than expected with OTFC (29%; 21–39%) or FBT (31%; 25–39%). INFS was dominant versus OTFC and cost-effective versus FBT. **Despite the uncertainty in the source data, there is a** >99% probability that INFS is the most cost-effective intervention. Sensitivity and scenario analyses did not change the main conclusion. **CONCLUSIONS:** Greater efficacy of INFS in pain reduction is expected to reduce medical resource use and result in cost-savings for health care providers and quality of life gains for patients. INFS is a cost-effective treatment for BTCP compared with OTFC and FBT in Scotland.

PCN102

COST EFFECTIVENESS ANALYSIS OF ADJUVANT THERAPY WITH TRASTUZUMAB FOR HER2+VE BREAST CANCER IN ITALY UTILIZING FOLLOW UP DATA

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OBJECTIVES: Based on results from the **HER**ceptin **A**djuvant Trial (HERA) with a median follow-up time of 1 year, trastuzumab is licensed and reimbursed for the treatment of HER2+ early breast cancer (EBC) in Italy since 2006. As the risk of recurrence reduces overtime, hazard ratios in breast cancer trials usually increase as more follow-up data is available. Longer term follow-up data were recently reported for 2 and 4 years, the latter though being heavily confounded by extensive cross-over of the HERA comparator arm and hence unusable. The objective of this analysis was therefore to determine the cost effectiveness of 1-year treatment with trastuzumab vs observation, based on results from the 2-year follow up data. **METHODS:** A published Markov model based on the initial HERA results was revised and updated to incorporate the hazard ratios from the 2-year follow up data to reflect trastuzumab's impact on disease progression. The treatment effect reported was applied for the first 4 years of the model. An Italian health care payer perspective was adopted. Medication and acquisition costs were taken from published sources whereas health state and event costs were derived from costing study conducted in Tuscany. A lifetime horizon was chosen. Incremental cost-effectiveness ratios were expressed as cost per quality adjusted life year (QALY). Costs and QALYs were discounted at 3.0% p.a. Sensitivity analyses were performed. **RESULTS:** The analysis showed that after completion of adjuvant chemotherapy, treatment with trastuzumab resulted into additional 1.81 life years and 1.62 QALYS gained per patient compared to observation only, at an incremental mean total cost of €18,022. The ICER was estimated at €11,131/QALY, which is well in line with previously published analyses. **CONCLUSIONS:** Using more recent data from the HERA trial, Trastuzumab was determined to remain a cost effective treatment option for HER2+ve EBC in the Italian setting.

PCN103

PHARMACOECONOMIC ANALYSIS OF THE ADDITION OF RITUXIMAB TO FLUDARABINE-CYCLOPHOSPHAMIDE REGIMEN IN THE FIRST-LINE TREATMENT OF CHRONIC LYMPHOCYTIC LEUKAEMIA PATIENTS IN SPAIN

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OBJECTIVES: Following broadening of the EMEA license for first-line treatment of previously untreated patients with **chronic lymphocytic leukaemia (CLL) with** rituximab added to chemotherapy, we evaluated the cost-effectiveness of rituximab in combination with commonly used chemotherapy regimen of fludarabine plus cyclophosphamide (R-FC) versus fludarabine plus cyclophosphamide (FC) from the perspective of the Spanish national health care system. **METHODS:** A three stage Markov model including progression-free survival (PFS), progression state and mortality was developed using published results from the randomized clinical trial CLL-8 evaluating PFS in patients with **CLL. Rates of disease progression were derived** from a Weibull model, mortality rates were obtained from Kaplan-Meier and Spanish age-specific mortality tables. Patient elicited utilities were applied to PFS and progressed health states. The cost of drugs, supportive care, and quality-adjusted life years (QALY) were estimated over a period of 10 years, the median survival for CLL, and discounted at 3.5 *per annum*. Univariate and probabilistic (Monte Carlo simulation) sensitivity analysis were performed. **RESULTS:** The addition of rituximab to chemotherapy increased life-years gained (LYG) and QALYs by 0.669 and 0.617 years per patient, respectively, compared to chemotherapy alone. The incremental cost per LYG and QALY gained was €17,726 and €19,220, respectively. Cost-effective results were obtained with Monte Carlo simulation. Univariate sensitivity analyses indicated the results were robust, and most sensitive to time horizon, with a threshold value at year 7, from which the R-FC regimen is cost-effective. **CONCLUSIONS:** The model demonstrated that the addition of rituximab to fludarabine plus cyclophosphamide (FC) regimen increased life and quality-adjusted life expectancy and is a cost-effective first-line treatment option for patients with chronic lymphocytic leukaemia.

PCN104

COST-EFFECTIVENESS OF ERLOTINIB IN THE TREATMENT OF ADVANCED NON SMALL CELL LUNG CANCER IN CHINA

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OBJECTIVES: The objective of the study was to evaluate the cost-effectiveness of erlotinib compared to docetaxel for the treatment of advanced non small cell lung cancer (NSCLC) in China. **METHODS:** A Markov health-state model was designed to estimate the direct medical costs and outcomes (life years and QALYs gained) of treating advanced NSCLC. The model included three health states—progression free survival (PFS), post progression free survival (PPF) and death. The evolution of a cohort of patients was simulated along 2 years with monthly cycles. Survival and time to progression were retrieved from 2 pivotal clinical trials. From the perspective of China's health insurance system, resource use was calculated based on a questionnaire survey from clinical expert panels. A discounting rate at 3% was used to discount medical costs happening at different years. A univariate sensitivity analysis was performed to understand the key drivers and general sensitivity of the model. **RESULTS:** The model results showed that the utilization of erlotinib treatment in NSCLC can prolong 0.047 QALYs (0.038 life years), compared to the docetaxel treatment. The total cost per patient was lower with erlotinib (US$23,351) than with docetaxel (US$24,846). The lower cost and better efficacy associated with erlotinib makes it a dominant treatment strategy in comparison to docetaxel. **CONCLUSIONS:** According to this model, erlotinib is more cost-effective than docetaxel in treating advanced NSCLC, with savings for the China's health insurance system.