EGRF mutation is cost-effective with a willingness to pay above $1379.49 per extra progression-free month. In the testing strategy, patients with mutation positive disease treated with gefitinib benefited from an extra 4.32 progression-free months compared to positive patients in the non-testing strategy.

PCN76

COST-EFFECTIVENESS OF WHITE BLOOD CELL GROWTH FACTOR USE AMONG ELDERLY NON-HODGKIN'S LYMPHOMA PATIENTS TREATED WITH CHEMOTHERAPY

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OBJECTIVES: To analyse data on a large population-based cohort of elderly non-Hodgkin’s lymphoma (NHL) patients treated with chemotherapy to measure the cost-effectiveness (as measured as cost per life-year saved) of white blood cell growth factor (CSF) use in a real-world setting. METHODS: We identified 13,203 NHL patients who were ≥65 years old and received chemotherapy within 12 months of diagnosis. Patients were followed from initial chemotherapy date until death or end of study period (October 31, 2006). Effectiveness of CSF use (primary and secondary prophylaxis) was measured as improved overall survival. Costs were estimated by summing reimbursement amounts derived from claims. Cost-effectiveness was estimated by modeling the joint influence of CSF use on costs and effectiveness using a propensity-score net monetary benefit approach. RESULTS: Primary prophylactic CSF use was cost-effective at lower willingness to pay thresholds, whereas at higher thresholds, not providing prophylactic CSF was the cost-effective strategy. For secondary prophylactic CSF use, the cost-effective threshold was $25,000 per life year gained, and for primary prophylactic CSF use, the cost-effective threshold was $50,000 per life year gained. CONCLUSIONS: To our knowledge, this is the first population-based study to empirically measure the cost-effectiveness of CSF among cancer patients treated with chemotherapy. Results suggest that CSF use as primary or secondary prophylaxis may be cost-effective depending on society’s willingness to pay for improvements in outcomes.

PCN77

COST-EFFECTIVENESS ANALYSIS OF ERLOTINIB IN THE TREATMENT OF ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC) IN ROMANIA

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OBJECTIVES: Erlotinib (Tarceva®) is the first and only oral targeted therapy with an activity against CSF among cancer patients treated with chemotherapy. Results suggest that CSF use as primary or secondary prophylaxis may be cost-effective depending on society’s willingness to pay for improvements in outcomes.

PCN78

COST-EFFECTIVENESS MODELING OF EPOETIN ALFA AND DARBEPOETIN ALFA IN THE TREATMENT OF CHEMOTHERAPY-RELATED ANAEMIA IN SWEDEN

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OBJECTIVES: To estimate the probability that epoetin alfa is more cost-effective than darbepoetin alfa for the treatment of chemotherapy related anemia in Sweden using a cost-effectiveness simulation model. METHODS: Studies for recommended dosing regimens of epoetin alfa and darbepoetin alfa were identified from the literature and used to assess haematopoietic response rates, dose escalation rates and the mean number of RBC transfusions required in chemotherapy patients. A simulation model including estimates of proportions, means and variances of these outcomes was established to estimate costs and effectiveness of these agents over 12 weeks. Published unit costs were used. Each haematopoietic response rate (2 g/dl or an increase from baseline of ≥2 g/dl) was used in the utility analysis and was attributed to each state. RESULTS: Epoetin alfa is associated with greater effectiveness than darbepoetin alfa. Mean haematopoietic response rates were 49.86% for epoetin alfa compared to 41.05% for darbepoetin alfa. The mean probability that epoetin alfa is more cost-effective than darbepoetin alfa is estimated at 99.9%. Sensitivity analyses were conducted where different costs items, variances/correlations and estimated response rates were tested. RESULTS: According to this model, epoetin alfa is associated with greater effectiveness than darbepoetin alfa. Mean haematopoietic response rate was 49.86% for epoetin alfa compared to 41.05% for darbepoetin alfa. Epoetin alfa is also associated with lower costs than darbepoetin alfa, Sek 31,661 compared to Sek 43,369 over 12 weeks of therapy. The probability that epoetin alfa exhibits economic dominance over darbepoetin alfa is estimated at 92.9% and the probability that epoetin alfa is cost-effective is 99.9%. Our conclusion is that epoetin alfa is the cost-effective strategy, while CSF use became cost-effective as willingness to pay thresholds were increased. CONCLUSIONS: This analysis suggests that the model is robust and, within the margins of uncertainty, not sensitive to modifications in the underlying estimates. CONCLUSIONS: This analysis suggests that epoetin alfa should be considered first for treating chemotherapy-related anaemia given its cost-effectiveness profile. Comparative efficacy of these agents should be further assessed in future head-to-head studies.

PCN79

REVIEW OF COST-EFFECTIVENESS STUDIES ON AROMATASE INHIBITORS FOR THE TREATMENT OF EARLY-STAGE BREAST CANCER

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OBJECTIVES: With the recent updates of clinical guidelines of the National Comprehensive Cancer Network (NCCN) and the American Society of Clinical Oncology (ASCO), aromatase inhibitors have been included in the management of early-stage breast cancer. There has been a great interest to understand the cost-effectiveness of this new alternative therapy which is becoming an “optimal therapy” for breast cancer. The objective of this study is to review the cost-utility studies on aromatase inhibitors for the treatment of early-stage breast cancer and compare reported incremental cost-effectiveness ratios (ICERs). METHODS: We conducted a literature for cost-utility studies on aromatazole, letrozole and exemestane. We reviewed the papers to extract the information on intervention, comparator, ICER, country perspective, time horizon and clinical data used. For the comparison of reported ICERs, we converted all currencies to US dollars by exchange rate for the cost-year used, then inflated the values to 2008. RESULTS: A total of 20 papers were identified (8 on aromatazole, 8 on letrozole, 1 on exemestane). All studies were from health care perspective and sponsored by manufacturers. The time horizon modeled ranged from 7.5 years to lifetime, however majority of the studies modeled lifetime. The studies were from EU countries and North America such as US, Canada, Belgium, Italy, Sweden and UK. The mean ICER values were $24,932 for aromatazole; $21,113 for letrozole and $21,428 for exemestane. CONCLUSIONS: The mean ICERs for all three aromatase inhibitors are below $25,000; hence they appear to be cost-effective compared to tamoxifen therapy for the treatment of early-stage breast cancer.

PCN80

A SYSTEMATIC REVIEW OF COST-EFFECTIVENESS OF PROSTATE-SPECIFIC ANTIGEN (PSA) IN PROSTATE CANCER SCREENING

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OBJECTIVES: Existing reviews regarding the clinical and economic value of prostate cancer (PCa) screening. Our objective is to summarize cost-effectiveness studies on PSA screening with PROSTATE. METHODS: We systematically searched the English-language literature for cost-effectiveness analyses (CEA) on PSA screening programs published between 1994–2009 using Medline and other databases. We collected data related to methods, screening population, screening strategies, and reporting of results. RESULTS: We identified 10 CEA in PCa screening using PSA, 30% of the studies investigated efficacy of PSA on PCa detection, and 70% for efficacy of PSA on both PCa detection and consequent treatments. All studies were based on either decision tree (60%) or Markov models (40%). Majority of studies only modeled single episode screening (80%). The screening population included men age 40–79 years old, high PSA risk sample, or Medicare population. Four types of screening strategies were compared: 1) no screening vs. PSA, or PSA combined with digital rectal examination (DRE); 2) different thresholds of normal PSA; 3) variants of PSA (PSA, free PSA, complexed PSA); 4) different screening intervals. Method of cost-effectiveness measures varied from studies. Outcomes were presented as costs/quality adjusted life years (QALY) (30%), costs/life-years saved (40%), costs/curable cancers (20%), costs/ detected cancer (10%). Only five studies originated in U.S. As compared to no screening, studies reported an incremental cost-effectiveness of screening with PSA or combined with DRE that ranged from $12,502 to $65,909/life-year saved in Medicare population aged 65–69 years, and general population aged 70–79 years, respectively. One study reported that PSA- alone screening was dominated by no screening in the general population aged 50–79 years. CONCLUSIONS: Economic evaluation of PSA in PCa screening remains limited. Cost-effectiveness ratios reported from studies varied from screening populations, calendar year, and country original, which made the comparisons difficult.
PCN81 THE COST-EFFECTIVENESS ANALYSIS OF SEMI-ANNUAL SCREENING FOR HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHRONIC HEPATITIS B Sruabat A1, Chaiwawonwatana A1, Tuntsakul S1, Sukaryodith S1, Apiwanich C1, Sumetthawatna W1, Pradeeppanpoy A2, Jaisatornporn K3, Karalak A1, Thayakul A1, Kapol N2, Siriboon N2, Chayasakpanuk M4

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OBJECTIVES: Hepatocellular carcinoma (HCC) is the fifth cause of death from cancer worldwide. Hepatitis B virus infection is the important risk of HCC. Alpha fetoprotein (AFP) monitoring of liver ultrasound had been introduced test for semi-annual screening test for HCC, but in human with hepatitis B surface antigen positive or patients with chronic hepatitis B. However, the cost-effectiveness of this screening is not well defined. Our objective was to explore the cost-effectiveness of semi-annual HCC screening using AFP and liver ultrasound from societal perspective compared with no screening. METHODS: With a Markov model, we simulated the four health states of natural history of HCC which were no HCC state, resectable HCC state, unresectable HCC state and death state with 6-month cycle length. The base case decision model was run for male patients with age of 51 that is mean age of screening group. Cost and outcomes were discounted at a 3% annual rate. Probabilistic sensitivity analysis was performed.

RESULTS: For semi-annual HCC screening, the incremental cost effectiveness ratio (ICER) which compared with no screening was US$14,111 (95% CI US$13,610–US$14,617) per quality adjusted life year (QALY) for male chronic HB patients. COST-UCM/PC used with liver ultrasound as a test for cost effective for semi-annual screening HCC in patients with hepatitis B surface antigen positive or patients with chronic hepatitis B, according to the Thai threshold that ICER of cost-effectiveness treatment should not exceed US$9000 per QALY.

PCN82 COST COMPARISON OF BEVACIZUMAB PLUS CISPLATIN AND GEMCITABINE VERSUS Pemetrexed and cisplatin therapy in patients with advanced or recurrent non-squamous non-small cell cancer in Germany – an updated analysis Bischoff HG1, Hermes A2, Cesaro-Tadic S3, Walzer S3, Nuijten M4

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OBJECTIVES: New treatments for advanced NSCLC offer clinical benefits over standard chemotherapy alone; however, it is important to demonstrate value for money. Bevacizumab with chemotherapy improves survival and time to progression in patients with advanced NSCLC compared to chemotherapy alone. Pemetrexed and cisplatin has shown survival improvements over gemcitabine plus cisplatin. In the light of gemcitabine generic pricing, the aim of this analysis was to provide an update on how the treatment costs of bevacizumab plus cisplatin and gemcitabine (BCG) compare with pemetrexed plus cisplatin (PC) therapy in Germany. METHODS: A 3-state Markov model was used to evaluate the costs of treating advanced or recurrent NSCLC with either BCG or PC induction therapy. The model assumes patients move between states according to transition probabilities derived from the efficacy data (progression-free survival) from the pivotal trials. Drug costs assume chemotherapy was given for up to 6 cycles, but that single agents pemetrexed and bevacizumab (7.5 mg/kg) were continued until progression. RESULTS: The monthly drug costs for BCG and PC therapy were €5764 and €6446, respectively; a saving of €692 per month with BCG. The mean monthly costs of administration were €205 for BCG and €135 for PC (a difference of €62). CONCLUSIONS: With the availability of generic gemcitabine during 2009, triplet therapy with bevacizumab has increased the potential monthly cost savings compared to doublet chemotherapy with pemetrexed. From a budget perspective bevacizumab should be considered as the targeted therapy of choice for patients with advanced NSCLC in Germany.

PCN83 COST-EFFECTIVENESS OF LENOGRASTIM ON NEUTROPENIA DURATION IN ADULTS RECEIVING CHEMOTHERAPY FOR SOLID TUMORS OR LYMPHOMAS Rutkowski J1, Duryol L2, Fedyna M3, Pisko R3, Lit J, Wladykiew M3

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OBJECTIVES: The aim of present analysis was to assess cost-effectiveness of lenograstim in comparison with other G-CSFs—filgrastim and pegfilgrastim in Polish settings (threshold is about 100,000 PLN). METHODS: Analysis covered time horizon of one chemotherapy cycle. A public payer perspective was adopted for cost analysis. The costs included were based on Polish NHF reference costs list. Data on time to ANC recovery, number of days with fever, length of hospital stay and antibiotics use were retrieved from randomized controlled trials (RCTs) identified in the conducted systematic review. These included trials on prophylactic G-CSF use as well as trials in which only patients with neutropenia were included. Equations describing costs and QALY according to neutropenia and fever length, hospital stay and antibiotic use were estimated. RESULTS: Estimated QALY difference between lenograstim and filgrastim is 0.0035 (CI95% [0.0023; 0.0048]), compared to pegfilgrastim is 0.0039 (CI95% [0.0026; 0.0052]). Total costs difference between lenograstim and filgrastim is ~205 PLN (CI95% [-3004; -938]) and compared to pegfilgrastim is ~3236 PLN (CI95% [-4125; -2259]). Probability of lenograstim being cost-effective over filgrastim is 99.98% and over pegfilgrastim is 100%. Taking into account only trials where G-CSFs were used in neutropenia prophylaxis estimated QALY difference between lenograstim and filgrastim is 0.0029 (CI95% [-0.0015; 0.0044]), compared to pegfilgrastim is ~0.0031 (CI95% [-0.0017; 0.0001]; ~0.0048) and compared to pegfilgrastim is ~3097 PLN (CI95% [-4168; -1943]). Probability of lenograstim being cost-effective over filgrastim is 99.81% and over pegfilgrastim is 100%. CONCLUSIONS: Lenograstim is dominant over filgrastim and pegfilgrastim. Acknowledgements: This analysis was supported by Sanofi-Aventis.

PCN84 COST EFFECTIVENESS ANALYSIS OF ANTI-EPILDERMAL GROWTH FACTOR RECEPTOR AGENTS FOR TREATMENT REFRACTIVE METASTATIC COLORECTAL CANCER Chang Y1, Hay J2

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OBJECTIVES: To conduct a cost effectiveness analysis of anti-EGFR treatment regimes for the treatment refractory mCRC. Clinical trial data was available and utilized to examine panitumumab monotherapy and to compare cetuximab monotherapy vs. best supportive care as well as cetuximab based treatments with panitumumab monotherapy. METHODS: A Markov model comprising of three health states (stable disease, progressive disease and death), was developed from an US societal perspective to estimate economic implications of weekly vs. anti-EGFR treatments for 52 weeks for 1000 treatment refractory mCRC patients. Transition probabilities were estimated based on available clinical literature data for each treatment. Therapy cost, health utilities, direct and indirect costs were based on published literature and national health care databases. Cost parameters were reported based on 2009 US dollars with a 3% discount rate. The analyses yielded an ICER of $249,033/QALY for cetuximab monotherapy vs cetuximab + irinotecan, an ICER of $266,196/QALY for cetuximab monotherapy vs. panitumumab, an ICER of $256,992/QALY for panitumumab vs. panitumumab + irinotecan. Therapy, cost, health utilities, direct and indirect costs were based on published literature and national health care databases. Cost parameters were reported based on 2009 US dollars with a 3% discount rate. HDMC: The analyses yielded an ICER of $773,978/QALY for panitumumab vs. best supportive care (placebo). Through strictly increasing rankings of the ICERs, we find best supportive care to be most cost effective therapy, followed by panitumumab monotherapy, cetuximab monotherapy and cetuximab + irinotecan therapy; however, changes in model parameters may influence the rankings of the treatment regimes. CONCLUSIONS: Based on the willingness to pay threshold of $150,000/QALY, treating treatment refractory mCRC patient with anti-EGFR agents is not cost effective. However, since the clinical literature lacks comprehensive head to head clinical trial amongst all anti-EGFR agents, further research is necessary.

PCN85 ECONOMIC MODELING FOR TREATMENT FAILURE PATIENTS UTILIZING MULTIPLE ROUNDS OF THERAPY AS COMPARATOR: CASE IN POINT LYMHPHOMA DRUG CANDIDATE Arraguel S1, White N2, Stevens CA3

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OBJECTIVES: Treatment failure patients in various disease areas are often treated by multiple rounds of therapy. However new treatment options are emerging that have potential to replace that treatment with single-agent or single round of combination therapy. To conduct a cost effectiveness analysis of anti-EGFR treatment for treatment refractory mCRC patient with anti-EGFR agents is not cost effective. However, since the clinical literature lacks comprehensive head to head clinical trial amongst all anti-EGFR agents, further research is necessary.

PCN86