

this is the first time that the cost of treating adverse events for multiple myeloma and cancer patients have been analyzed in the Lebanese market. These analysis may help with the setting of guidelines for cancer-related adverse events management.

PCN117

COST-EFFECTIVENESS ANALYSIS OF ALECTINIB COMPARED TO CHEMOTHERAPY FOR THE TREATMENT OF TREATMENT-NAÏVE PATIENTS WITH ALK POSITIVE LOCALLY ADVANCED OR METASTATIC NON-SMALL CELL LUNG CANCER (NSCLC) IN GREECE

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OBJECTIVES: Lung cancer remains the commonest cause of death from cancer worldwide, posing a high disease and economic burden on healthcare systems globally. Alectinib is a highly selective, CNS-active anaplastic lymphoma kinase (ALK) inhibitor. 5% of non-small cell lung cancer (NSCLC) patients carry mutations associated with ALK (ALK positive). The objective of this analysis was to perform a cost-effectiveness analysis of Alectinib compared to chemotherapy for the treatment of treatment-naïve patients with ALK positive locally advanced or metastatic NSCLC in Greece. **METHODS:** A health economic model was developed using an "area under the curve" partitioned survival (three mutually exclusive health states) semi-Markov type analysis. The model was populated with clinical effectiveness data from the literature and Greek-specific data on health resource use and costs collected from an expert panel of 10 oncologists. This analysis did not account for discounts/rebates. The analysis followed a third party payer perspective (Greek Social Insurance). **RESULTS:** Alectinib compared to chemotherapy was accompanied by gains of 2.1 total life years (LY) (5.01 vs 2.91) and a gain in Quality Adjusted Life Expectancy of 1.76 QALYs (3.74 vs 1.98 QALYs gained). Alectinib is associated with an additional cost of €151,550 (€201,554 vs €50,004) compared to chemotherapy per patient, resulting in an incremental cost effectiveness ratio (ICER) of 72,348 per LY gained and 85,965 per QALY gained. The results are sensitive to the price of the intervention. **CONCLUSIONS:** The population of ALK positive NSCLC patients in Greece is estimated to be approximately 120 patients per year in Greece. Alectinib contributes towards significant health gains in LY and QALYs compared to chemotherapy at a reasonable cost.

PCN118

THE CLINICAL AND COST EFFECTIVENESS OF DASATINIB VERSUS NILOTINIB FOR THE FIRST AND SECOND LINE TREATMENT OF PEOPLE WITH CHRONIC MYELOID LEUKAEMIA

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OBJECTIVES: Chronic myeloid leukaemia (CML) is associated with reduced survival and quality of life; however, BCR-ABL tyrosine kinase inhibitors (TKIs) have dramatically improved outcomes in patients. Although generic imatinib is provided in the UK, outcomes are superior for second-generation TKIs (dasatinib and nilotinib) and their availability enables clinicians to optimise treatment in clinical practice. The objective of this study was to determine the cost-effectiveness of dasatinib versus nilotinib for the treatment of CML in the UK. **METHODS:** A lifetime Markov disease progression and cost-effectiveness model was developed. Complete and partial cytogenetic response rates were derived from systematic literature review and network meta-analysis of studies in treatment-naïve (first-line) patients, and naïve comparison between non-comparative studies in treatment-experienced (second-line) patients. Response-specific survival was derived from patient-level data of dasatinib studies and applied to both treatment arms. Remaining model inputs were derived from previously published literature and UK health technology assessments. A UK payer perspective was adopted; costs and benefits were discounted at 3.5% annually. **RESULTS:** Dasatinib and nilotinib response rates were comparable in the first-line and second-line settings; minor differences resulted in marginally improved mean survival (an additional 0.186 and 0.187 years, respectively) and longer time in the pre-progression state for the dasatinib arm. Due to improved mean survival outcomes and lower acquisition costs (dasatinib: £30,498/annum; nilotinib: £31,736/annum), dasatinib was associated with lifetime cost-savings, and therefore dominance, compared to nilotinib in the first-line and second-line settings (savings of £29,308 and £28,706, respectively). Results were relatively insensitive to alternative assumptions and inputs. **CONCLUSIONS:** Dasatinib and nilotinib provide comparable clinical benefits; however, it was estimated that dasatinib would result in a reduction in total lifetime costs. Availability of both therapies enables clinicians to tailor the CML therapy to an individual patient, potentially improving outcomes in clinical practice, with no additional cost to the NHS.

PCN119

COST-EFFECTIVENESS OF RIBOCICLIB PLUS LETROZOLE VERSUS PALBOCICLIB PLUS LETROZOLE FOR POSTMENOPAUSAL WOMEN WITH HORMONE RECEPTOR-POSITIVE (HR+), HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2-NEGATIVE (HER2-) ADVANCED/METASTATIC BREAST CANCER FROM A UK NATIONAL HEALTH SERVICE PERSPECTIVE

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OBJECTIVES: Assess the cost-effectiveness of ribociclib plus letrozole versus palbociclib plus letrozole as first-line treatments for postmenopausal women with HR+/HER2- advanced/metastatic breast cancer from a UK National Health Service perspective. **METHODS:** Incremental cost-effectiveness of ribociclib versus palbociclib was simulated using a cohort-based, three-state (progression-free [PF], progressed disease [PD], and death) partition survival model with a 1-month cycle length. Clinical data were derived from the MONALEESA-2 January 2017 data cut for ribociclib and from aggregate palbociclib data from PALOMA-1 and -2. Treatment effect was modelled using hazard ratios of PF survival and overall survival for ribociclib versus letrozole and palbociclib versus letrozole. Cost inputs included drug

acquisition, administration and monitoring, routine follow-up, Grade ≥3 adverse events, and subsequent therapy costs. Drug costs for both palbociclib and ribociclib were adjusted for discontinuation and dose reductions. Health benefits were valued in quality-adjusted life years (QALYs), with utility weights derived from EQ-5D-5L data collected in MONALEESA-2 for PF and using literature for PD. Costs and effects were discounted at 3.5% per year for a lifetime horizon of 40 years. Uncertainty was assessed using deterministic and probabilistic sensitivity analyses. **RESULTS:** At lifetime, total discounted cost of ribociclib was £107,128 (drug cost = £58,939; health state cost = £48,189) versus £115,012 (69,949 and £45,063, respectively) for palbociclib. Discounted QALYs for ribociclib were 3.08 (PF = 2.33; PD = 0.75) versus 2.85 (PF = 2.15; PD = 0.70) for palbociclib. Ribociclib was less costly (-£7,884) and resulted in more QALYs (+0.230) than palbociclib, and was the dominant strategy. The probability of ribociclib being cost-effective versus palbociclib at £30,000 per QALY was 77.25%. Drug acquisition cost differences were key drivers of results. **CONCLUSIONS:** Ribociclib is likely to be dominant over palbociclib in cost-effectiveness terms as a first-line treatment for postmenopausal women with HR+/HER2- advanced/metastatic breast cancer.

PCN120

THE COST-EFFECTIVENESS OF NIVOLUMAB FOR THE TREATMENT OF PEOPLE WITH RELAPSED OR REFRACTORY CLASSICAL HODGKIN LYMPHOMA FOLLOWING AUTOLOGOUS STEM CELL TRANSPLANT AND BRENTUXIMAB VEDOTIN

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OBJECTIVES: Treatment of classical Hodgkin Lymphoma (cHL) is highly effective in early lines of treatment; however, for patients who relapse or become refractory after receiving both autologous haematopoietic cell transplantation (auto-HCT) and brentuximab vedotin (BV), treatment options are extremely limited. Nivolumab is a PD-1 inhibitor that may potentially offer significant improvements in disease control and quality-of-life over standards of care (SoC) in this setting. Additionally, nivolumab may enable allogeneic HCT (allo-HCT), a potentially curative procedure. The objective of this study was to estimate the clinical- and cost-effectiveness of nivolumab compared to SoC. **METHODS:** A three-state Markov disease progression and cost-effectiveness model of cHL was developed. Relative efficacy was established by naïve and adjusted comparisons of patient-level clinical trial data (nivolumab; CA209-039 and CheckMate 205 B and C) with a retrospective study (SoC; Cheah 2016). Costs were derived from published UK estimates; remaining model inputs were consistent with previous UK health technology assessments. A lifetime horizon was applied; costs and benefits were discounted at 3.5% annually (EGBP 2014-15). An additional scenario was modelled in which a proportion of patients received allo-HCT after 6 months of treatment, dependent on response. **RESULTS:** Nivolumab resulted in an estimated additional 2.80 quality-adjusted life years (QALYs) and 2.90 life years versus SoC, with 1.67 years spent in the pre-progression state and 3.34 years in the post-progression state (versus 0.41 and 1.70 years for SoC, respectively). Estimated incremental costs were £82,897 with a resultant incremental cost-effectiveness ratio (ICER) of £29,631/QALY. Assuming a proportion of patients receive allo-HCT resulted in an ICER of £16,457/QALY. **CONCLUSIONS:** Nivolumab is estimated to offer significant benefit in terms of improved survival and quality-of-life whilst offering a cost-effective alternative to SoC, addressing a significant unmet need in people with relapsed or refractory cHL who have received both auto-HCT and BV.

PCN121

A HEALTH TECHNOLOGY ASSESSMENT OF HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY ADDED TO INTERVAL CYTOREDUCTIVE SURGERY IN STAGE III OVARIAN CANCER

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OBJECTIVES: Hyperthermic intraperitoneal chemotherapy (HIPEC) is a new addition to standard treatment of stage III ovarian cancer with neoadjuvant chemotherapy plus interval cytoreductive surgery (CRS). To support information for policy decision making upon reimbursement, the purpose of this study was to perform a cost-effectiveness analysis and assess organizational implications of introducing HIPEC for ovarian cancer (OVHIPEC). **METHODS:** A Markov model was built to compare OVHIPEC (in combination with CRS) to standard interval CRS. The analysis was performed from a societal perspective of the Netherlands. Clinical outcomes were derived from a recently presented Dutch randomized controlled trial (OVHIPEC1 study, NCT00426257). Cost data were based on the OVHIPEC1 study, from treatment protocols and standard prices. Costs included neo-adjuvant chemotherapy, surgery +/- HIPEC, admission days, complications, outpatient visits, end-of-life-care and societal costs. Utilities were derived from literature. Interviews with medical oncologists and gynecological surgeons were conducted to determine organizational implications and possible barriers for the uptake of OVHIPEC. **RESULTS:** Total healthcare costs were €45,829 (95%-Credible Interval (CrI) 43,199-48,627) for interval CRS compared to €56,921 (95%-CrI 53,312-61,100) for OVHIPEC. OVHIPEC resulted in 1.93 (95%CrI 1.58-2.25) Quality Adjusted Life Years (QALY) and interval CRS only resulted in 1.58 (95%-CrI 1.31-1.85) QALYs. The incremental cost effectiveness ratio was €31,759/QALY. Given a willingness to pay (WTP) threshold of €80,000/QALY in the Netherlands, OVHIPEC had a probability of being cost effective of 83.3%. In case of a €30,000/QALY threshold (more common in Europe), the results will mainly depend on country-specific OVHIPEC- and CRS-intervention costs. Hospital capacity of performing OVHIPEC procedures in the Netherlands was identified as a possible implementation barrier. **CONCLUSIONS:** Although more costly than interval CRS only, the combination with OVHIPEC resulted in QALY gain. Given the current Dutch WTP threshold, OVHIPEC has a higher probability of being cost effective compared to interval CRS in stage III ovarian cancer.

PCN122

COST EFFECTIVENESS ANALYSIS (CEA) OF NIVOLUMAB IN 2ND LINE NON-SMALL CELL LUNG CANCER (NSCLC) WITH NON-SQUAMOUS HISTOLOGY (NSQ) USING A MIXED COMPARATOR OF DOCETAXEL AND PEMETREXED IN AN AUSTRALIAN SETTING

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OBJECTIVES: Lung cancer is the leading cause of cancer-related deaths in Australia with NSCLC NSQ accounting for the majority of cases. Current 2nd line treatment for NSCLC NSQ in Australia is limited to either docetaxel or pemetrexed which largely are ineffective and have a low response rate. Nivolumab, an immunotherapy which blocks programmed cell death-1 inhibition of the immune system, has recently demonstrated superior overall survival in 2nd line treatment of NSCLC NSQ patients vs docetaxel in a clinical trial setting. The aim of this study was to evaluate the cost-effectiveness of nivolumab versus a basket of comparators containing docetaxel and pemetrexed which could be considered standard of care in an Australian setting. **METHODS:** A partitioned survival model with three health states (progression free, progressive disease and death) was developed for this CEA. The model was run for both docetaxel and pemetrexed and an average ICER was calculated. Clinical trial data was utilised for the docetaxel comparison whereas an indirect comparison was performed in order to inform the pemetrexed component of the evaluation. Australian specific cost in terms of drugs and health resources were applied. Both one/two way and probabilistic sensitivity analyses were performed. **RESULTS:** The results of the CEA showed that patients treated with nivolumab saved 1.02 life years (LY) (nivolumab=2.22 vs mixed comparator=1.20). Similarly for quality adjusted life years (QALYs), nivolumab saved 0.80 QALYs when compared to the mixed comparator. This came at an additional cost of US\$49.0k which equates ICERs of US\$48k/LY and US\$60.9k/QALY. The model was most sensitive to comparator price, extrapolation method and discount rate. **CONCLUSIONS:** This study indicates that nivolumab is a cost-effective alternative to docetaxel and pemetrexed in Australia with the potential of significantly decreasing both mortality and morbidity for patients treated for 2nd line NSCLC NSQ.

PCN123

COST-EFFECTIVENESS ANALYSIS OF CRIZOTINIB FOR UNTREATED ANAPLASTIC LYMPHOMA KINASE-POSITIVE ADVANCED NON-SMALL-CELL LUNG CANCER IN PORTUGAL

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OBJECTIVES: To evaluate the cost-effectiveness of crizotinib in the treatment of ALK-positive non-small cell lung cancer (ALK+NSCLC) in the Portuguese NHS. **METHODS:** A previously developed and validated state transition Markov cohort model was used. The economic model was adapted to consider treatment strategies relevant to Portuguese setting and clinical practice. The economic model was adapted to consider treatment strategies relevant to the Portuguese clinical practice and populated with relevant epidemiological, quality of life and economic/resource use data; the latter mainly driven by evidence elicited from a panel of six Portuguese clinical experts with extensive clinical experience. First-line treatment with pemetrexed and platinum followed by switch to crizotinib (second-line) and best-supportive-care (third-line) in case of disease progression was compared with first-line treatment with crizotinib followed by switch to docetaxel (second-line) and best-supportive-care (third-line). Unit costs (medicines, procedures and hospitalizations) were extracted from Portuguese official sources. A societal perspective was adopted. Both costs and effects were discounted at 5%, and a lifetime horizon was considered. Univariate sensitivity analyses were performed over key model parameters. **RESULTS:** A treatment strategy considering crizotinib as first-line option was found to be more costly per patient, but also more effective than one considering first-line pemetrexed and platinum for patients with ALK+NSCLC. This resulted in an incremental cost-effectiveness ratio (ICER) of 29326 € per LY gained (48691 € per QALY gained). Sensitivity analyses over key model parameters indicated that the base case results were generally robust. **CONCLUSIONS:** Compared with standard first-line chemotherapy, first-line treatment with crizotinib in patients with ALK+NSCLC can be considered a cost-effective option for the Portuguese NHS by commonly used criteria in oncology.

PCN124

COST EFFECTIVENESS ANALYSIS OF EXEMESTANE VERSUS CAPECITABINE MONOTHERAPY FOR PATIENTS WITH HORMONE RECEPTOR-POSITIVE AND HER2-NEGATIVE, METASTATIC BREAST CANCER FROM NATIONAL CANCER INSTITUTE PRESPECTIVE IN EGYPT

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OBJECTIVES: Both hormonal therapy (HT) and maintenance Capecitabine mono therapy (MCT) have been shown to extend time to progression (TTP) in patients with metastatic breast cancer (MBC) after failure of taxanes and anthracycline-containing regimens. The main objective of this study is to evaluate over a 4-year period from National Cancer Institute the costs and outcomes associated with the use of Exemestane 25mg versus Capecitabine 400mg in patients with metastatic breast cancer. **METHODS:** A Markov model with three mutually exclusive health states (metastasis, progression and death) was developed. Transition probabilities used in the model were calculated based on time to progression and overall survival data which derived from previously published clinical trial. Utility data was derived from previously published sources. Direct medical costs were collected from The National Cancer Institute. Costs and effects were discounted at 3.5% annually. Deterministic sensitivity analysis was performed. **RESULTS:** The total QALYs of the Exemestane group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were 1,699,087 EGP and 2,389,345 EGP respectively, with a net

difference of 690258 EGP. These results showed that Exemestane provide better QALYs at lower costs compared to Capecitabine. Deterministic sensitivity analysis showed that time to progression in Exemestane group has the largest impact on the results. **CONCLUSIONS:** Exemestane 25 mg is cost saving compared to capecitabine 400 mg in patients with metastatic breast cancer and should be recommended in National Cancer Institute tender list.

PCN125

ECONOMIC EVALUATION OF TRIFLURIDINE AND TIPIRACIL HYDROCHLORIDE IN THE TREATMENT OF METASTATIC COLORECTAL CANCER IN GREECE

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OBJECTIVES: To evaluate the cost-effectiveness of trifluridine and tipiracil hydrochloride (FTD/TPI) compared with best supportive care (BSC) or regorafenib for the treatment of patients with metastatic colorectal cancer (mCRC) who have been previously treated with or are not considered candidates for available therapies including fluoropyrimidine-, oxaliplatin- and irinotecan-based chemotherapies, anti-vascular endothelial growth factor agents and anti-epidermal growth factor receptor agents in Greece. **METHODS:** A partitioned survival model was locally adapted from a third-party payer perspective over a 10-year time horizon. Efficacy, safety data and utility values were extracted from relevant clinical trials and published studies. Resource consumption data were obtained from local experts, using a questionnaire developed for the purpose of the study and was combined with unit costs obtained from official sources. All costs reflect the year 2017 in euros. Primary outcomes were patients' life years (LYs), quality-adjusted life years (QALYs), total costs and incremental cost-effectiveness ratios (ICERs) per QALY and LYs gained. Both cost and outcomes were discounted at 3.5% per year. A threshold of €51,000 per QALY gained was used (3 times the GDP per capita of Greece based on WHO Guidelines). A probabilistic sensitivity analysis (PSA) was conducted. **RESULTS:** Total life time cost per patient for FTD/TPI, BSC and Regorafenib was estimated to be €10,443, €1,879 and €11,094 respectively. In terms of health outcomes, FTD/TPI was associated with 0.25 and 0.11 increment in LYs compared with BSC and Regorafenib respectively. Furthermore, FTD/TPI was associated with 0.17, and 0.07 increment in QALYs compared with BSC and Regorafenib, resulting in ICERs of €34,137 per LY gained and €49,732 per QALY gained versus BSC. Moreover, FTD/TPI was a dominant alternative over Regorafenib. PSA confirmed the deterministic results. **CONCLUSIONS:** The results indicate that FTD/TPI may represent a cost-effective treatment option compared to other alternative therapies as a third-line treatment of mCRC in Greece.

PCN126

THE COST AND OUTCOMES OF BREAST CANCER SCREENING FOR WOMEN 40-49 YEARS OLD IN RUSSIA

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INTRODUCTION: In Russia screening for breast cancer (BC) is recommended for women 39-75 years old, though WHO recommends starting BC screening at the age of 50 in the limited resource settings. **OBJECTIVES:** To assess the cost and outcomes of BC screening in women 40-49 years old in Russia. **METHODS:** Using published data on BC screening in Russia, we estimated the number of women, who underwent screening in 2014 in age groups 40-49 and 50-69 and respective number of BC cases detected. Also for every age group we calculated expected numbers of false positive results based on published data on sensitivity and specificity of mammography. Costs of screening were estimated using the average public health insurance tariffs for mammography in the frames of screening and biopsy. **RESULTS:** In 2014 1.72 million women underwent screening in the age group 40-49, with the total cost of screening €6.01 million and 1,287 BC cases detected. In the age group 50-69 3.74 million women were screened, total cost of screening was €12.8 million and 5,568 BC cases were diagnosed. Thus, the average cost of BC case detected was €4,671 in age group 40-49 and €2,298 in age group 50-69. The number of false positive results of mammography per BC case detected was also twice higher in age group 40-49 than in 50-69 years old – 45 vs 21. **CONCLUSIONS:** BC screening in the age group 40-49 results not only in higher cost per BC case detected, but also in higher numbers of false positive results, thus questioning the expected benefits of existing screening program for the society.

PCN127

COST-EFFECTIVENESS OF AFATINIB VERSUS ERLOTINIB FOR THE TREATMENT OF SQUAMOUS NON-SMALL CELL LUNG CANCER IN FRANCE AFTER A FIRST-LINE PLATINUM BASED THERAPY

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OBJECTIVES: To assess the cost-effectiveness of afatinib compared to erlotinib for the treatment of squamous NSCLC after first-line platinum based therapy from the French healthcare funders perspective. **METHODS:** A partitioned survival model was developed containing three health states: pre-progression, post-progression and death. Results from the LUX-Lung 8 trial which compared afatinib with erlotinib in patients with squamous NSCLC were used. Life expectancy, quality-adjusted life expectancy and direct costs were evaluated over a 10-year time horizon. Future costs and clinical benefits were discounted at 4% annually. Deterministic and probabilistic sensitivity analyses were performed. **RESULTS:** From the French healthcare