not receive any drug therapy. **RESULTS:** Increases in life expectancy and lifetime medical costs between 1995-1999 and 2005-2011 were as follows. Breast: 9.8 months, $44,000, Lung: 2 months, $9,000, Kidney: 9.5 months, $41,000; CML: 24.3 months, $104,000. Among breast and lung cancer patients, survival gains and cost increases were concentrated in those treated with drugs. **CONCLUSIONS:** There were large increases in costs but also substantial gains in life expectancy. Applying conventional estimates of the wiliness-to-pay for a life year suggests that cancer drugs introduced over the period 1995-2011 are, as a group, cost-effective by conventional standards. We cannot attribute gains to specific drugs, but the fact that increases in life expectancy and costs were concentrated among patients who received drug therapy (versus none) suggests there is a causal relationship between the release of new drug and outcomes.

PCN96

COST-EFFECTIVENESS ANALYSIS OF LENVATINIB AS A TREATMENT FOR RADIOACTIVE IODINE REFRACTORY DIFFERENTIATED THYROID CANCER IN THE UNITED STATES

Tremblay G[1], Pelletier C[1], Copher R[2], Forsythe A[3], Majethia U[3]
[1]*Eisai, Woodcliff Lake, NJ, USA,* [2]*Eisai, Inc., Woodcliff Lake, NJ, USA,* [3]*Eisai Inc., Woodcliff Lake, NJ, USA*

OBJECTIVES: The objective of this study was to estimate the Incremental Cost Effectiveness Ratio (ICER) of utilizing lenvatinib for Radioactive Iodine Refractory Differentiated Thyroid Cancer (RR-DTC) in US. **METHODS:** Lenvatinib is indicated in the US for treatment of patients with RR-DTC who may or may not have received other Tyrosine Kinase Inhibitors (TKI's) for the management of the disease. An economic model was developed to evaluate the cost effectiveness of lenvatinib against sorafenib – another TKI with a similar indication. Data on progression free survival (PFS) and overall survival (OS) derived from the clinical trials for lenvatinib (SELECT) and sorafenib (DECISION); not from a head to head trial. Health state utility was obtained through a vignette study. A ten year partitioned survival model was developed to estimate the expected outcomes and costs of lenvatinib vs. sorafenib. Frequencies of adverse events were obtained from the respective clinical trials. Data on utilization of direct medical resources was obtained from a chart study conducted on US patients with RR-DTC. Costs incorporated in the model included drug and administration, adverse event treatment, medical costs for hospitalizations, physician visits, end of life and palliative care; the costs were derived from several databases, e.g., OptumInsight, AHRQ, CMS, and Cancer Mpact. **RESULTS:** Incremental life years (LYs) and quality adjusted life years (QALYs) gained by patients on lenvatinib vs. sorafenib was 0.58 and 0.55 respectively. At a cost for lenvatinib of $438 per day, and sorafenib of $411 per day, the ICER per LY is $98,172 and $103,925 per QALY. Sensitivity analysis results were also consistent with the basecase findings. **CONCLUSIONS:** With a threshold of $150,000 per QALY, lenvatinib was found to be cost-effective for the indicated population. Given the limited number of therapeutic options available to the patients with RR-DTC, lenvatinib offers a cost effective option for treatment.

PCN97

COST EFFECTIVENESS OF NEW THERAPEUTIC OPTIONS IN CASTRATION-RESISTANT METASTATIC PROSTATE CANCER

Kostyuk A[1], Akanov A[2]
[1]*KazAHTA, Astana, Kazakhstan,* [2]*Astana Medical University, Astana, Kazakhstan*

OBJECTIVES: The management of metastatic castration-resistant prostate cancer (mCRPC) is complex and the associated drug treatments are increasingly costly. The treatment options for mCRPC include mitoxantrone, cabazitaxel, abiraterone and enzalutamide. The objective of our current study to evaluate the cost effectiveness and estimate the cost of drug treatments over the mCRPC period, in the context of the latest evidence-based approaches. **METHODS:** A decision-tree model compared four treatment options for mCRPC patients over 18 months from a 2015 Kazakhstan payer's perspective. The decision model included; baseline pain level as a measure for disease severity, development of treatment specific side effects and treatment specific survival. Data on probabilities life expectancies and utilities were obtained from clinical trial data (COU-AA, AFFIRM, Tropic) and other published sources. The cost parameters were incorporated from the following categories: drug treatment, radiation therapy, therapy-specific side effects, and death. Probabilistic sensitivity analyses, acceptability curves and net benefit calculations were performed. **RESULTS:** Based on case analysis, cabazitaxel therapy was the most expensive ($133897), followed by enzalutamide ($129,348), abiraterone while ($118,620), mitoxantrone ($92,115). Quality adjusted life expectancy was highest with cabazitaxel (0.74 QALY), followed by abiraterone (0.69 QALY), mitoxantrone (0.57 QALY), enzalutamide (0.54 QALY). Mitoxantrone was found to be the most cost effective treatment ($50,866/QALYs) compared to prednisolone. At a willingness to pay of $100,000/QALY, the cost effectiveness acceptability curves showed that mitoxantrone and abiraterone were cost effective 22.9% and 24.1% times respectively. **CONCLUSIONS:** This is study estimates the direct drug costs associated with mCRPC treatments in the Kazakhstan healthcare system. Treatment of mCRPC with recently developed therapies can extend the survival, however, the gains in survival are accompanied by significant costs with abiraterone, cabazitaxel and enzalutamide. At 2015 prices, mitoxantrone which has a lower side effect profile appears would be cost effective at conventional willingness to pay thresholds.

PCN98

COST EFFECTIVENESS OF PEGFILGRASTIM FOR REDUCING INCIDENCE OF FEBRILE NEUTROPENIA EVENTS AFTER CYTOTOXIC CHEMOTHERAPY FOR SOLID TUMORS IN TURKEY

Saka G[1], Villa G[2], Worth G[3], Barron R[4], Malhan S[5], Lyman GH[6]
[1]*Amgen Inc, Istanbul, Turkey,* [2]*Amgen (Europe) GmbH, Zug, Switzerland,* [3]*Amgen Ltd, Zug, Switzerland,* [4]*Amgen, Inc., Thousand Oaks, CA, USA,* [5]*Baskent University, Ankara, Turkey,* [6]*Fred Hutchinson Cancer Research Center, Seattle, WA, USA*

OBJECTIVES: The objective of this evaluation was to assess cost-effectiveness of pegfilgrastim compared to filgrastim when used as prophylaxis in subsequent chemotherapy cycles for patients who experience a neutropenic event (NE; absolute neutrophil count <500/m3), consistent with Turkish regulatory indication. Pegfilgrastim was compared to filgrastim (5 days) for reducing incidence of FN events in patients receiving cytotoxic chemotherapy for solid tumors in Turkey. **METHODS:** An economic model was developed to assess cost-effectiveness of pegfilgrastim compared to filgrastim given for 5 days per cycle (short course based on Turkish clinical practice) in breast cancer patients receiving highly myelotoxic (≥20% FN risk) or moderately myelotoxic (10-20% FN risk) chemotherapy regimens. A Markov cycle tree was modeled comprising two components: a decision tree that tracks initial chemotherapy cycle and associated NE events, and a Markov model consisting of two phases. Phase 1 tracks FN events in subsequent chemotherapy cycles following an NE, while Phase 2 tracks long-term cancer-related survival. All analyses were performed from the payer perspective and included direct health care costs only. A lifetime time horizon was considered. Deterministic sensitivity analyses were conducted on key model parameters. **RESULTS:** The average cost of treating an FN episode for a solid tumor was calculated as TRY8900[$4070] based upon consultation with Turkish clinicians. For highly myelotoxic regimens, switching to prophylaxis with pegfilgrastim after an NE was a dominant strategy (incremental cost: TRY-99[$-45], incremental QALY: 0.03). ICER for medium myelotoxic regimens was TRY7920[$3622] (incremental cost: TRY55[$25], incremental QALY: 0.01); highly cost-effective based on WHO-recommended ICER threshold (GDP per capita = TRY22718[$10390]). Cost-effectiveness results were robust to deterministic changes in key model parameters (e.g. risk of FN in subsequent cycles, cost of FN). **CONCLUSIONS:** Prophylaxis with pegfilgrastim for reducing incidence of FN after a first NE is either dominant or cost-effective compared to filgrastim (5 days).

PCN99

A GLOBAL ECONOMIC MODEL TO ASSESS THE COST EFFECTIVENESS OF NEW TREATMENTS FOR ADVANCED BREAST CANCER IN CANADA

Beauchemin C[1], Letarte N[2], Mathurin K[1], Yelle L[3], Lachaine J[1]
[1]*University of Montreal, Montreal, QC, Canada,* [2]*Centre hospitalier de l'Université de Montréal – Hôpital Notre-Dame – Department of Pharmacy, Montreal, QC, Canada,* [3]*Centre hospitalier de l'Université de Montréal – Hôpital Notre-Dame – Department of Medicine, Montreal, QC, Canada*

OBJECTIVES: Considering the increasing number of treatment options for metastatic breast cancer (MBC), it is important to develop high-quality methods to assess the cost-effectiveness of new anticancer drugs. This study aims to develop a global economic model that could be used as a benchmark for the economic evaluation of new therapies for MBC. **METHODS:** The Global Pharmacoeconomics of Metastatic Breast Cancer (GPMBC) model is a Markov model that was constructed to estimate the incremental cost per quality-adjusted life years (QALY) of new treatments for MBC from a Canadian healthcare system perspective over a lifetime horizon. Specific parameters included in the model are cost of drug acquisition, survival outcomes, and incidence of treatment-related adverse events (AEs) whereas global parameters are patient characteristics, health states utilities, disutilities and costs associated with treatment-related AEs, as well as costs associated with drug administration, medical follow-up, and end-of-life care. The GPMBC model was tested and validated in a specific context, by assessing the cost-effectiveness of lapatinib plus letrozole compared with other widely used first-line therapies for postmenopausal women with hormone receptor-positive (HR+) and epidermal growth factor receptor 2-positive (HER2+) MBC. **RESULTS:** When validated, the GPMBC model leaded to incremental cost-utility ratios of CA$131,811 per QALY, CA$56,211 per QALY, and CA$102,477 per QALY for the comparison of lapatinib plus letrozole vs. letrozole alone, trastuzumab plus anastrozole, and anastrozole alone, respectively. Results of the model validation were quite similar to those obtained by Delea et al., who also assessed the cost-effectiveness of lapatinib in combination with letrozole in HR+/HER2+ MBC in Canada, thus suggesting that the GPMBC model can replicate results of well-conducted economic evaluations. **CONCLUSIONS:** The GPMBC model can be very valuable as it allows a quick and valid assessment of the cost-effectiveness of any new treatments for MBC in a Canadian context.

PCN100

ECONOMIC EVALUATION OF DENOSUMAB IN THE PREVENTION OF SRE IN PATIENTS WITH BREAST CANCER IN MEXICO

Alva ME[1], Naranjo M[2], Zamora J[1]
[1]*Amgen, Mexico City, Mexico,* [2]*Amgen Mexico, Mexico City, Mexico*

OBJECTIVES: Bone metastases are common in patients with cancer, arising in 65-75% of those with advanced breast cancer. Patients with bone metastases may experience Skeletal Related Events (SRE), which are devastating for patients and derive in higher costs for the public healthcare system. These SREs include pathological fracture, spinal compression, radiation to bone and bone surgery. The objective of this work is to perform a cost-effectiveness analysis of Denosumab compared with Zoledronic Acid (generic) in patients with advanced breast cancer. Efficacy was measured as SRE avoided. **METHODS:** A Markov model was used to evaluate patients with breast cancer associated to bone metastases. 3 health states were considered: in treatment, off treatment and death. To be consistent with the life expectancy of the affected patients, time horizon was 15 years (or lifetime) with cycles of 28 days; at this time, 99% of patients have transitioned to death state. A discount rate of 5% was applied based on local guidelines for economic evaluation. Costs were analysed under the perspective of Mexican public health system and are expressed in US Dollars (exchange rate = 0.06043 USD/MXN). **RESULTS:** The use of Denosumab prevents 0.49 (discounted) SRE's per patient compared to Zoledronic Acid. Denosumab achieved a decrease of $2,710.02 in costs related to SRE's. When considering the sum of all costs, Denosumab strategy totalled $39,475.35, and Zoledronic Acid $39,568.80. **CONCLUSIONS:** Denosumab significantly improves the prevention of skeletal complications in patients with breast cancer compared with Zoledronic Acid. It also demonstrated to be less costly when compared to Zoledronic Acid, placing Denosumab as a dominant strategy.