routine service cost, and cost of adverse event treatment. **RESULTS:** EGFR-TKI treatment provided a better progression-free survival and overall survival compared with docetaxel. Except rash, dry skin and dry eyes, the incidence of other adverse events in patients treated with EGFR-TKI was lower than docetaxel. However, the monthly treatment cost and total treatment costs of EGFR-TKI were higher than docetaxel at 37,017.55 baht/month and 451,071.08 baht respectively. The incremental cost-effectiveness ratio (ICER) was 631,426.01 baht/life-year-gained (LYG). **CONCLUSIONS:** Though EGFR-TKI has a more favorable clinical outcome than docetaxel, the additional cost per LYG is significant. This ICER is greater than the threshold suggested by the WHO, three times of GDP/capita (300,000 baht), which may consider to be not cost-effective. Both docetaxel and EGFR-TKI are the effective and available treatments for aNSCLC in Thailand. When making a decision and policy regarding the treatments of aNSCLC, this economic evidence should be taken into account along with other clinical aspects.

PCN16

COST-EFFECTIVENESS ANALYSIS OF K-RAS TESTING AND CETUXIMAB FOR METASTATIC COLORECTAL CANCER IN JAPAN

Shiroiwa T[1], Motoo Y[2], Tsutani K[3]

[1]Ritsumeikan University, Kusatsu, Shiga, Japan; [2]Kanazawa Medical University, Uchinada, Japan; [3]The University of Tokyo, Tokyo, Japan

OBJECTIVES: Cetuximab, a monoclonal antibody directed against the epidermal growth factor receptor, improves progression free survival and overall survival for metastatic colorectal cancer (mCRC) patients. However patients with K-*ras* mutation don't benefit from cetuximab. **METHODS:** We performed cost-effectiveness analysis of K-*ras* testing and cetuximab treatment as last-line therapy for mCRC patients. In our analysis, we considered three groups: A) cetuximab treatment for patients with wild-type tumors and best supportive care (BSC) for mutant patients with K-*ras* testing; B) cetuximab treatment for all the patients without K-*ras* testing; and C) BSC for all the patients without K-*ras* testing. The cost-effectiveness of three comparison groups was calculated: group A versus B (cost-effectiveness of K-*ras* testing), group A versus C (cost-effectiveness of cetuximab treatment with K-*ras* testing), and group B versus C (cost-effectiveness of cetuximab treatment without K-*ras* testing). Constructed three-state Markov model was used to predict expected costs and outcome of each group. Outcome was based on the report by Karapetis et al. (2008), who retrospectively analyzed NCIC CTG CO. 17. Only direct medical costs were included from the perspective of Japanese health-care payer. Three percent discount rate was used for both costs and outcome. **RESULTS:** K-*ras* testing for cetuximab treatment reduced costs by JPY 500,000 per patients. Budget impact was estimated to be JPY 3 to 5 billion. However, the ICER of cetuximab with K-*ras* testing was more than JPY 10 million per life-year gained (LYG) although it was smaller than ICER of cetuximab without K-*ras* testing. Even if the mean utility score was 0.7, the ICER was approaching JPY 20 million per QALY. **CONCLUSIONS:** When the cetuximab treatment is administered as last-line therapy for mCRC patients, K-*ras* testing is recommended. However, the ICER of cetuximab treatment is too high, even if the treatment is limited to patients with wild-type K-*ras*.

PCN17

ECONOMIC EVALUATION OF PEMETREXED IN PATIENTS WITH PREVIOUSLY TREATED ADVANCED NON-SMALL CELL LUNG CANCER IN JAPAN

Kamae I[1], Nakahara N[2], Moriwaki K[3], Enatsu S[4], Nambu Y[4]

[1]Keio University Graduate School of Health Management, Fujisawa, Japan; [2]Eli Lilly Japan K.K., Kobe, Japan; [3]Kobe University Graduate School of Medicine, Kobe, Japan; [4]Eli Lilly K.K. Japan, Kobe, Japan

OBJECTIVES: To elucidate the more cost-effective dosing strategy for the administration of pemetrexed in the second-line treatment of patients having been treated for advanced non-small cell lung cancer (NSCLC). **METHODS:** Validation of the model was based on efficacy and safety data from a phase II clinical study conducted in Japan of two pemetrexed doses: 500 mg/m^2 (P500) versus 1000 mg/m^2 (P1000). Cost-effectiveness and cost-minimization analyses were performed to estimate the impact of P500 versus P1000 on expected life-years and costs from the perspective of the Japanese national health insurance (NHI) system. Costs covered additional treatment and test which are needed due to the treatment of pemetrexed and adverse events. A subgroup analysis was conducted to compare the cost-effectiveness of pemetrexed in patients with different NSCLC histologies. **RESULTS:** P1000 exhibited a negative life-years gained (LYG) of −0.115 at an incremental cost of US$13,674 compared to P500, implying simple dominance of P500 over P1000. The incremental cost-effectiveness ratio (ICER) of pemetrexed therapy with P500 was estimated at US$19,479/LYG, compared with the same therapy in squamous cell carcinoma, when it is performed in non-squamous cell carcinoma. Results of a probabilistic sensitivity analysis demonstrated an almost 100% likelihood of the ICER of pemetrexed with P500 for non-squamous cell patients falling below the threshold of US$50,000/LYG. **CONCLUSIONS:** P500 is a more cost-effective dosing regimen than P1000 for pemetrexed chemotherapy in patients with NSCLC. Also, results suggest that pemetrexed is more cost-effective in NSCLC patients of non-squamous histology than of squamous histology from the payer's perspective.

PCN18

ECONOMIC IMPLICATIONS OF THE FIRST-LINE TREATMENT OF ADVANCED RENAL CELL CARCINOMA IN THAILAND: A COST-EFFECTIVENESS ANALYSIS

Topibulpong N, Tanasanvimon S, Parinyanitikul N, Vinayanuwattikun C, Sriuranpong V

Chulalongkorn University, Bangkok, Thailand

OBJECTIVES: To determine the economic implications of agents used to treat metastatic renal cell carcinoma (mRCC). **METHODS:** A lifetime Markov model was developed to simulate the patterns of disease progression and to determine the outcomes under treatment of available medicines including interferon-alpha (IFNa), sunitinib, sorafenib, and bevacizumab. Costs were measured based on the perspective of a health-care provider. Resource utilization derived from retrospective chart reviews of 14 mRCC patients treated at the King Chulalongkorn Memorial Hospital, Bangkok, Thailand. Costs and survival benefits were discounted annually at 3%. **RESULTS:** The major assumption of the study was that the projected PFS and overall survival were longer for sunitinib than the other comparative treatments based on results of published studies. Additional treatment after failure of one tyrosine kinase inhibitor (TKI) in the model was limited which fit well with the practical scenario in developing country. Cost-effectiveness analyses demonstrated that IFNa had the most favorable cost-effectiveness ratio at 1.3 million Baht/QALYs followed by sunitinib, sorafenib, and bevacizumab at 1.7, 1.9, 9.3 million Baht/QALYs respectively. However, sunitinib had a better incremental cost-effectiveness ratios (ICERs) over IFNa at 2.0 million Baht/PFY, 2.7 million Baht/LYG, and 3.6 million Baht/QALY gained. Sensitivity analysis showed that the most sensitive parameters for sunitinib were the overall survival efficacy and costs. **CONCLUSIONS:** Our study reveals that sunitinib has the good cost-effectiveness profiles as one of the first line treatment of mRCC. With current study model, it may be applicable to the situation in developing country with limit availability of TKIs in the treatment of mRCC. However, sunitinib's ICER comparing to IFNa is still beyond the ICER threshold for a developing country. This cost-effectiveness evidence should be taken into account in conjunction with other clinical, societal and ethical considerations in the treatment of mRCC.

PCN20

COST-EFFECTIVENESS ANALYSIS OF A FOBT-BASED COLORECTAL CANCER SCREENING PROGRAM

Pizzo E[1], Bracci E[2], Vagnoni E[2], Wilschut J[3], van Ballegooijen M[3]

[1]Imperial College London, London, UK; [2]University of Ferrara, Italy, Ferrara, Italy; [3]Erasmus MC University Medical Center Rotterdam, Rotterdam, The Netherlands

OBJECTIVES: Colorectal cancer (CRC) is one of the most common forms of cancer in western countries and represents the second leading cause of cancer mortality in Europe (AIRTUM, 2009). Early detection and removal of cancerous lesions can reduce the incidence of CRC, its mortality and improve patients' quality of life (Taupin et al. 2006). The main literature on this topic refers to USA and few studies have been conducted in Italy to date (Zappa et al. 1997; Tappenden et al. 2007). Aim of the paper is to shed some light on the effectiveness and costs of screening programs in the Italian health-care system, presenting the results of a cost-effectiveness analysis of a CRC screening program in Italy. **METHODS:** We use as case-study a Regional CRC screening program to determine the full costs and the effectiveness of the adopted techniques, FOBT combined with colonoscopy. The costs involved in each phase of the program are evaluated using a micro-costing analysis. Effectiveness is valued in terms of early detected lesions and years of life gained. Cost and effectiveness data are used to estimate the costs for year of life gained, using a MISCAN-COLON Model© to simulate and compare two alternative scenarios, with or without the screening program. **RESULTS:** The preliminary results show that the screening will prevent almost 2.0 deaths (11.2%) per 1000 screened individuals, corresponding to 19.4 years of life gained in 30 years with an incremental cost effectiveness ratio of f2400 for life-year gained. **CONCLUSIONS:** The results outpace those of previous studies (Sonnenberg, 2000), signalling an increasing effectiveness of CRC screening program. Besides, the paper highlights the importance of implementing a screening not only for the effects that prevention can have in clinical terms, but also for the economic impact of such a policy in relation to the long-term sustainability of health-care systems.

PCN21

COST-EFFECTIVENESS ANALYSIS OF ADJUVANT HORMONAL TREATMENTS FOR POSTMENOPAUSAL HORMONE-RECEPTOR POSITIVE EARLY BREAST CANCER IN KOREAN CONTEXT

Lee HJ, Lee TJ, Yang BM

Seoul National University, Seoul, South Korea

OBJECTIVES: This study aims to evaluate the cost-effectiveness of two aromatase inhibitors for adjuvant treatment of postmenopausal hormone receptor positive early breast cancer, and to address the most reasonable treatment option when population is stratified by nodal status. **METHODS:** A Markov model was developed defining six Markov states based on breast cancer progression. Annual probabilities of recurrence by adjuvant treatment, anastrozole, letrozole, and tamoxifen were estimated from published studies in overall population, node negative, and node positive group. Costs of defined breast cancer events were measured by micro-costing methods based on 2009 National Health Insurance Fee Schedule and the third Clinical Guideline of Breast Cancer Treatment. Anastrozole and letrozole were compared with tamoxifen, respectively, using the same Markov model. Incremental cost-effectiveness ratios (ICERs) in overall population and each subgroup were estimated. **RESULTS:** When