Estimates were based on results of clinical studies and on information from the list of medical and pharmaceutical expenses for breast cancer in Kazakhstan (2009) and the retail price of medicines in Karaganda. Data sources: PubMed, the Cochrane library, Internet search was performed to analyze the results of clinical studies of treatment patients with breast cancer. Results: One-year survival rate was higher by 21.8% among patients with breast cancer who underwent chemotherapy with “Argablin” compared with patients receiving chemotherapy alone. Indicator “cost-effectiveness” for the scheme with Argablin was 281.8 (the cost of one course of treatment is 281.8 $ on one survivor patient). (a) Radiotherapy, (b) hormone therapy and (c) chemotherapy for metastasis. Breast cancer was detected by disease name including claim data (CSG of ICD-10). Since ICD-10 code directly indicates metastatic breast cancer, combination of codes such as C782 (metastasis to lung), C787 (to liver) and C793 (to brain) was used to extract metastatic breast cancer costs out of the database. (Pécs, Zalaegerszeg, Hungary, 4National Health Insurance Fund Administration, Pécs, Hungary) The analysis of health insurance costs included outpatient costs of breast cancer (HUF) or 58.09 million dollar (USD). Most of them (61.0%) related to the cost of surgery (1.14 billion HUF or 5.47 million USD) of breast cancer and cost of mammography screening, hospital costs of breast surgery, the cost of chemotherapy, (b) hormone therapy and (c) chemotherapy for metastasis. Breast cancer screening (BCS) using mammography is widely implemented; yet many studies show that a significant percentage of women are overdiagnosed and overtreated. The objective of this study is to analyse the effects of a BCS disinvestment decision in Asia-Pacific countries, particularly depending on ethnicity and level of participation in the BCS program. A significant increase in the number of breast cancer deaths associated with BC in Korea; a disinvestment decision, however, would not have a large impact on the number of deaths, due to currently high levels of overdiagnosis, and overall costs would be significantly reduced. A disinvestment decision in Australia would dramatically reduce the rate of overdiagnosis and would result in a significant mortality due to BC would be higher. Conclusions: This analysis has shown that the cost-effectiveness of BCS programmes should be evaluated over the long-term in order to take into account the consequences of overdiagnosis. Disinvestment decisions are complex and must be made locally, taking into consideration specific characteristics of the population under study.

PCN16 COST-EFFECTIVENESS ANALYSIS OF 1-YEAR ADJUVANT TRASTUZUMAB THERAPY OF EARLY-STAGE HER2-POSITIVE BREAST CANCER

Nguyen TTC1, Nguyen TTT2

1University of Medicine and Pharmacy in HCMC, HCMC, Vietnam, 2University of Medicine and Pharmacy in HCMC, Ho Chi Minh City, Vietnam

Objectives: Trastuzumab, a monoclonal antibody, has been widely used in treatment of HER2-positive breast cancer because of its proved effectiveness and safety. However because of the high price, the cost-effectiveness of trastuzumab should be evaluated especially in such low-income country as Vietnam. This is the aim of this study. Methods: A Markov model has been constructed with 5 health states (disease-free survival, local recurrence, regional recurrence, metastatic, death) with 1 year cycle length and lifetime horizon. The transition rates between these states have been retrieved from relevant epidemiological studies, clinical trials and expert opinion. A population of 1000 50-year-old women with average weight of 60 kg has been included in model. Lists of medical services and drugs were derived from NCCN guideline 2014. The prices of drugs and medical services have been averaged over the price lists of 11 of the same major hospitals in Vietnam. Both QALYs and cost were discounted at 3%. Probabilistic sensitivity analysis was also conducted. Results: 1-year trastuzumab adjuvant therapy of HER2-positive early-stage breast cancer costed VND 452,291.67 for life-time horizon and resulted in 10.72 QALYs. Standard chemotherapy costed VND 227,092,425 and resulted in 7.32 QALYs. Therefore 1-year trastuzumab adjuvant therapy costed an addition amount of VND 709,4 million and resulted in added QALY of 2.75 years. CER of trastuzumab is higher than the cost threshold of 452,291.67 and resulted in 10.72 QALYs. Conclusions: 1-year trastuzumab adjuvant therapy of HER2-positive early-stage breast cancer is cost-effectiveness in Vietnam. Trastuzumab’s price is the most affecting factor on its cost-effectiveness.

PCN17 COST-EFFECTIVENESS ANALYSIS OF ANTIDEPRESSANTS ON BREAST CANCER PATIENTS: A MARKOV MODELING STUDY

HieT

Department of Utah, Salt Lake City, UT, USA

Objectives: With the developing of new technology for genetic test, the accuracy of predicting the risk that a patient may diagnose with breast cancer in future was increased dramatically. But considering that after diagnosis with breast cancer, those patients were diagnosed with serious mental disorder which was related with general female population, and the anxiety patient suffered after realize taking genetic test and diagnosed with breast cancer. Moreover, the drug interaction between antidepressants and tamoxifen reduces the effect of tamoxifen, and complicate the decision-making. This cost-effectiveness study tries to use Markov model to investigate the best strategy that gives to high-risk breast cancer patients based on genetic test and diagnosed with breast cancer. Methods: A cost-effectiveness study using Markov model will be conducted from a third payer perspective. Both time and different antidepressants from desipramine, fluoxetine, amitriptyline, mian- serin, melatonin does not interfere with tamoxifen treatment, under that situation, these medication have the best outcome. The time period from diagnosed with breast cancer till 1 year is the best timing to give antidepressants, which may significantly reduce anxiety and improve the health-related quality of life of those patients. Although, sometimes patients with breast cancer may not realize they already threaten by depression, the antidepressant still significantly important to breast cancer population to prevent the progression of depression with better outcome.

PCN18 COST-EFFECTIVENESS OF PARA-AORTIC LYMPHADENECTOMY BEFORE CHEMORADIOTHERAPY IN LOCALLY ADVANCED CERVICAL CANCER

Lee YJ, Kim JW

Seoul National University, Seoul, South Korea

Objectives: Chemoradiation therapy (CRT) is the standard therapy for locally advanced cervical cancer (LACC) in the era of PET/CT. Methods: A modified Markov model was constructed to evaluate cost-effectiveness of para-aortic staging surgery before definitive CRT when no uptake is recognized (PPA) on PET/CT. Markov states and rates of complications were estimated based on the published literatures. Cost data was obtained from Korean National Health Insurance database. Strategies were compared using an incremental cost-effectiveness ratio (ICER). Sensitivity analyses were performed including an estimate for performance of PET/CT, postoperative complication rate,
and varying survival rates according to radiation field. RESULTS: We compared two two-year survival rates for LPI and NCAL, with the survival rates of a previous study as a reference. Nodal staging surgery was cost-effective in Korea when PET/CT shows no evidence of para-aortic lymph node metastasis. Prospective trials are warranted to transfer these results into guidelines.

PCN19 COST-EFFECTIVENESS OF FIRST-LINE THERAPY FOR ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC)
Yang MC, Tsai CH, Liao SY, Chou YH, Wang YC, Lin CY, Hsu YC, Hung CT, Shiu PL
National Taiwan University, Taipei, Taiwan
OBJECTIVES: To assess the cost-effectiveness of Afatinib vs. comparators in the first-line treatment for patients with non-small cell lung cancer (NSCLC) harboring the EGFR-activating mutation.

METHODS: A Markov-type model was developed to assess the cost-effectiveness of Afatinib in comparison to erlotinib, since the cost of erlotinib is significantly lower than that of Afatinib. We compared Afatinib to erlotinib from the perspective of the single payer, the afatinib could be a cost-effectiveness strategy for patients treated with afatinib in the 1st line setting have an increase of 0.02 QALYs with less cost NT$21,350.59, yielding an ICER of NT$457,768.67 per QALY gained. Compared to gefitinib, patients treated with afatinib have an increase of 0.02 QALYs with less cost NT$5,626.25, yielding an ICER of NT$282,221.33 per QALY gained.

CONCLUSIONS: The results of this study suggest that Afatinib is a potentially effective in comparison to dexamethasone at a $40,000 threshold. These results are consistent with the findings of a recent study by the Markov simulation model was conducted based on the natural history of breast cancer with TreeAge Pro 2011. The model was running over thirty years (each cycle represents one year). The intervention group consisted of patients who received tertiary breast cancer screening and diagnosis system, while control group received routine screening. The tertiary breast cancer screening system is a preferable choice of intervention, while control group received routine screening. The detection rate of breast cancer was 45.83% and 28.57%, respectively. The highest detection rate was found in patients aged from 45 to 65. In order to detect one case of breast cancer, the number of need for screening program was 1595. Cost-effectiveness analysis was conducted with Monte Carlo simulations. The cost of breast cancer treatment is $52,375 (yuan per QALY) for Nexavar, $492,452 (yuan per QALY) for Iressa, and $170,404 (yuan per QALY) for Tarceva. Compared with Routine follow-up with an ICER of $4,094/QALYs gained, given the survival gain estimates and other parameters.

CONCLUSIONS: Compared to gefitinib, patients treated with afatinib have an increase of 0.02 QALYs with less cost NT$21,350.59, yielding an ICER of NT$457,768.67 per QALY gained. Compared to gefitinib, patients treated with afatinib have an increase of 0.02 QALYs with less cost NT$5,626.25, yielding an ICER of NT$282,221.33 per QALY gained. Compared to gefitinib, patients treated with afatinib have an increase of 0.02 QALYs with less cost NT$21,350.59, yielding an ICER of NT$457,768.67 per QALY gained. Compared to gefitinib, patients treated with afatinib have an increase of 0.02 QALYs with less cost NT$5,626.25, yielding an ICER of NT$282,221.33 per QALY gained.