of novel cancer drugs approved over the past 11 years are used with a curative intent or provide a survival benefit in the palliative care setting. However, the modeling was for agents not providing these benefits was higher, indicating a disconnect between efficacy and cost.

PCN17 PREDICTING THE POTENTIAL COST AND EFFECTS OF PROPHYLACTIC HPV VACCINATION IN MALES IN THAILAND

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OBJECTIVES: To predict the potential cost and effects of adding males with females for HPV vaccination in Thailand. Human Papillomavirus (HPV) is the most common sexually transmitted virus in the United States. The American Academy of Pediatrics (AAP) recommends HPV vaccination for adolescent. Many studies show that HPV vaccination is beneficial in preventing HPV-associated diseases, such as cervical cancers, cervical intraepithelial neoplasia (CIN), genital warts and others. In this study, the cost and outcomes were calculated. The estimated differences in vaccination effects in males is generally considered as beneficial as vaccine coverage of males.

METHODS: A basic model of HPV vaccination was developed based on current literatures to estimate the economic and health effects of HPV-associated diseases in both males and females in the United States comparing to self-sampling of HPV testing in Thailand. RESULTS: The basic vaccination in Thailand and Taiwan are 500 USD and 265 USD (9263 baht) respectively. The QALYs gained per case for both countries are 0.0126 in females and 0.0094 for combined males and females. Totals for combined males and females vaccination is 493,153 QALYs for USA and 15,952 QALYs for Thailand. CONCLUSIONS: Adding HPV vaccination in adolescent males in Thailand is certainly more costly, but still beneficial. The potential of health benefits depends more on the female HPV vaccination coverage, however, males add benefits also. If the coverage rate for females is high, the health benefits increase. Based on the total population, the benefits can be substantial.

PCN18 ECONOMIC EVALUATION OF CT COLONOGRAPHY (CTC) INTRODUCTION INTO THE COLORECTAL CANCER SCREENING PROGRAM IN JAPAN

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OBJECTIVES: To assess the cost-effectiveness of introducing CT colonography (CTC) to the colorectal cancer (CRC) screening program in Japan. METHODS: A Markov model for CRC was constructed to estimate both the short-term (one-year) and the long-term (10-year, 20-year, and lifetime) impact of CTC on costs and health outcomes using three strategies. Strategy-1 was the current screening strategy in Japan, which consists of fecal occult blood test (FOBT) and occult-colonoscopy (OC). In Strategy-2 and Strategy-3, CTC was added between FOBT and OC. In Strategy-2, those who were showed positive in FOBT were asked to take CTC (uptake: 81.6%). In Strategy-3, only those who rejected OC (36.8%) were asked to take CTC (uptake: 50%). ICERs for Strategy-2 and Strategy-3 against Strategy-1 were calculated. Epidemiological data was obtained mainly from statistics published by Japanese National Cancer Center. Annual discount rate for both costs and outcomes was set as 3%. One-way sensitivities analysis was performed. RESULTS: The introduction of CTC into the CRC screening program in Japan was proposed to improve the program effect. For the short-term impact, the ICERs for Strategy-2 (JPY3,213,000) and JPY4,573,000 in Strategy-3, respectively. For the long-term impact, the base-case analysis, ICERs for colorectal cancer death avoided were JPY39,660,000 in Strategy-2 and JPY25,804,000 in Strategy-3, respectively. For the long-term impact, the base-case analysis, ICERs for colorectal cancer death avoided were JPY39,660,000 in Strategy-2 and JPY25,804,000 in Strategy-3, respectively. For Strategy-3, the ICERs for life-year gained were JPY77,804,000 in Strategy-2 and JPY48,480,000 in Strategy-3, respectively. During estimating the overall lifetime impact, Strategy-3 was considered more cost saving than Strategy-1. CONCLUSIONS: Although this study did not include the concept of QALY, the results suggested that CTC may be likely to improve the CRC screening program in Japan with reasonable costs. Early detection of CRC would improve patients’ quality of life, moreover, in a long-term perspective, increased costs for screening may be compensated for decreased costs when treating patients with advanced CRC.

PCN19 COST-EFFECTIVENESS ANALYSIS OF TEMSIROLIMUS IN PATIENTS WITH POOR RISK RENAL-CELL CARCINOMA

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OBJECTIVES: To estimate the cost-effectiveness of temsirolimus as a treatment option in poor risk renal cell carcinoma compared with interferon-α and from the perspective of national health insurance in Taiwan. METHODS: A decision-analytic model was developed to estimate the cost effectiveness of temsirolimus. Cost and the clinical outcome data were obtained from published literature and current reimbursed price published by Bureau of National Health Insurance. All costs and outcomes were discounted at an annual rate of 3%. The effect of parameter uncertainties on the incremental cost-effectiveness ratio (ICER) was assessed using one-way sensitivity analysis. RESULTS: Compared with interferon-α, temsirolimus treatment resulted in an incremental cost per QALY gained of NT$4,775,609, based on an estimated mean gain of 0.24 quality-adjusted life years (QALYs) per patient; and a cost per life-year gained of NT$2,512,048. Cost-effectiveness estimates were most sensitive to changes in hazard ratios for overall survival between temsirolimus and interferon-α. CONCLUSIONS: In comparison with interferon-α, the ICER (NT$4,775,609) for temsirolimus as a treatment in poor risk renal cell carcinoma, was found to be much higher than the threshold suggested by the World Health Organization. Therefore, temsirolimus could not be regarded as a cost-effective option from the National Health Insurance perspective.

PCN20 COMPARATIVE EFFICACY AND ECONOMIC EVALUATION OF DACARBazine AND TEMZolomIDE IN TREATMENT OF MALIGNANT MELANOMA IN IRAN

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OBJECTIVES: The worldwide incidence of melanoma is increasing rapidly. Two chemotherapy regimens are used for treatment of Malignant Melanoma: single agent intravenous Dacarbazine (DTIC) and oral Temozolomide (TMZ). TMZ has a greater cost in Iran so we aimed to do an economic evaluation, to evaluate the comparative value of treatment of two drugs. METHODS: To compare the efficacy of these two drugs, a systematic review and meta-analysis were conducted and strategy in the treatment of Malignant Melanoma were reviewed. For this purpose, Pubmed, Scopus, Web of Science and Cochrane Central Register of Controlled Trials were searched and the search terms were: “Dacarbazine” and “Temozolomide” and “Malignant Melanoma”. Data were collected from inception to 2012. “Response to treatment” included: complete response (CR), partial response (PR) and “stable disease” (SD) was the key outcome of interest. The direct cost (drug and administrative procedures costs) was collected from health provider centers. RESULTS: The meta-analysis included 3 RCTS and involved 1314 patients with malignant melanoma. Approximately half of them were allocated to the TMZ arm and half to the DTIC arm. Risk differences for CR was -0.01, for PR was +0.03 and for SD was +0.01. Average cost for one cycle of treatment with TMZ is $1957 and for DTIC $90 in Iran. For CR based on economic evaluation grid, TMZ treatment is dominated. The incremental CE ratio for PR is $62,233 and ICER for SD is $186,700 respectively. CONCLUSIONS: Considering health outcomes of CR, PR and SD, Temozolomide treatment for melanoma is not cost effective compare to Dacarbazine in Iran. It should be mentioned that generic Dacarbazine is available in Iran but Temozolomide is provided as branded, and availability to generic form of Temozolomide may affect the results of this economic evaluation.

PCN21 COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS ASSESSMENT OF ERLOTTINIB VERSUS GEFITINIB IN FIRST-LINE TREATMENT OF EGFR ACTIVATING MUTATION POSITIVE NON-SMALL CELL LUNG CANCER FOR HONG KONG

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OBJECTIVES: To compare the effectiveness and cost-effectiveness of erlotinib versus gefitinib in first-line treatment of epidermal growth factor receptor (EGFR) activating mutation positive non-small cell lung cancer (NSCLC) for Hong Kong. METHODS: An indirect treatment comparison (ITC), using the Bucher et al methodology, and a cost-effectiveness assessment (CEA) were performed on the basis of Asian phase-III randomized controlled trials (RCTs). In total four RCTs were determined: one for erlotinib (OPTIMAL) and three for gefitinib (IPASS, NORDIC, WJTOG). The CEA model approach that compares the two drugs, a systematic review and meta-analysis were conducted and the best fit of study characteristics and of prognostic patient characteristics were found between the OPTIMAL and IPASS trials. Comparing the CEA model as a result of this economic evaluation, the costs per progression-free life years gained and the cost per QALY gained were USD 39,431 (incremental cost-effectiveness ratio (ICER) for PR is $62,233 and ICER for SD is $186,700 respectively. CONCLUSIONS: Considering health outcomes of CR, PR and SD, Temozolomide treatment for melanoma is not cost effective comparing to Dacarbazine in Iran. It should be mentioned that generic Dacarbazine is available in Iran but Temozolomide is provided as branded, and availability to generic form of Temozolomide may affect the results of this economic evaluation.
Taiwan was used in this study. There are three screening tools: 1) Pap smear alone, 2) HPV DNA testing followed by Pap smear triage, and 3) self-sampling for HPV testing followed by Pap smear triage. Self-sampling for HPV testing strategy is annual, and another strategies of screening intervals are annually, every 3 years, and every 5 years. The model parameters are collected from the published references and the health-related governments in Taiwan. Outcome measures included life expectancy, quality-adjusted life years (QALYs), lifetime costs, and incremental cost-effectiveness ratios (ICERs). Probabilistic sensitivity analyses (PSAs) were conducted to assess parameter uncertainty. RESULTS: When three times GDP per capita is used as the decision threshold, and all seven screening strategies were cost-effective compared with the no-screening strategy. Compared with the primary screening strategy (an annual Pap smear), self-sampling HPV testing followed by Pap smear triage, HPV DNA testing followed by Pap smear triage every 5 years and every 3 years were cost-effective. CONCLUSIONS: Self-sampling for HPV testing followed by Pap smear triage is one of the cost-effective screening strategies in Taiwan.

PCN23 
COST-EFFECTIVENESS ANALYSIS OF GEFTINIB FOR LUNG CANCER: A POPULATION BASED STUDY
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OBJECTIVES: Geftinib is an effective targeted therapy for a subset of non-small cell lung cancer (NSCLC) patients, although its cost-effectiveness remains controversial. This study used national health insurance claims data to evaluate the cost-effectiveness of gefitinib in patients with NSCLC in Taiwan. METHODS: Using claims data and enrollment record from the 2002-2009 National Health Insurance Research Database (NHIRD) in Taiwan, we identified lung cancer patients via the ICD-9-CM codes and billing codes to identify patients who had received chemotherapy containing platinum-based regimens followed by taxane-based regimens between November 1, 2004 and October 31, 2007. We defined the index date as the date of 1st claim for taxane-based chemotherapy and limited the observational period for cost and survival to 2 years after index date. We further classified these patients into two groups: those who had subsequently received gefitinib vs those that had not. We determined survival status by using a previously developed algorithm using the enrollment file of the NHIRD and converted direct medical costs to 2011 US dollars. We then calculated the net benefit for each patient by applying various willingness-to-pay (WTP) values and employed the net benefit regression approach to assess the cost-effectiveness of gefitinib. RESULTS: We identified 2555 lung cancer; 797 (31%) had received gefitinib during our study period. The average cost (standard deviation) were $415,000 (39482) USD for the gefitinib users and $59257360 for non-users. The average survival was 487 days (228) for the gefitinib users and 291 days (248) for non-users. Net benefit regression suggested that gefitinib is cost-effective at WTP $53,000/USD/life-year or higher. CONCLUSIONS: Among lung cancer patients who started with platinum-based chemotherapy, followed by taxane-based regimen, adding gefitinib to chemotherapy is likely to be cost-effective.

PCN24 
HEALTH RELATED QUALITY OF LIFE, DIRECT AND INDIRECT COST ANALYSIS OF STAGE III COLORECTAL CANCER PATIENTS RECEIVING DIFFERENT ADJUVANT CHEMOTHERAPY TREATMENTS IN TAIWAN: A COST UTILITY ANALYSIS
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OBJECTIVES: To estimate the cost-utility of stage III colorectal cancer patients receiving either capecitabine-based or 5-FU/LV-based adjuvant treatments from the societal perspective. METHODS: The data used in this research is being reported in another study (Health Related Quality of Life, Direct and Indirect Cost Analysis of Stage III Colorectal Cancer Patients Receiving Different Adjutant Chemotherapy Treatments in Taiwan). Direct and indirect costs, including productivity loss of patients and their accompanying persons caused by receiving outpatient or inpatient services, were involved in this study. Propensity score matching was used to reduce selection bias and avoid endogenous problems between two groups of patients. The perspective adopted in this analysis was that of a society in Taiwan. All costs were expressed in 2011 New Taiwan dollars (1 USD is about 30 NTD). Utility value for the health states were derived by mapping the 16 dimensions of EORTC QLQ-C30 to utility scores, based on the published cost-utility data of van der Pol, 2009). RESULTS: After propensity score matching, a total of 219 patients were included in the analyses. There are 109 in the capcitabine-based treatment and 110 in the 5-FU/LV-based treatment. Over the study period of 6 months, the average cost of capcitabine-based treatment per patient was NT$820,576.3 while yielding 0.47 quality-adjusted life years (QALY). On the other hand, the average cost of 5-FU/LV-based treatment was NT$566,832.1 with 0.42 QALY. BETWEEN these two adjuvant treatments, the capcitabine-based treatment is dominant. CONCLUSIONS: The cost-utility analysis of capcitabine-based treatment was not only cost-saving but also improved quality-adjust life year compared with 5-FU/LV-based treatment in the adjuvant treatment of stage III colorectal cancer in Taiwan.

PCN27 
COMPARING COMPLEMENTARY AND ALTERNATIVE MEDICINES (CAM) USE TO THE HEALTH CARE PROVIDERS’ DESCRIPTIVE STUDY
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OBJECTIVES: To investigate the cancer patients’ CAM disclosure to the health care provider. METHODS: The study was designed as a questionnaire based, cross sectional analysis. A prevalence based sample of 393 cancer patients admitted to the oncology ward at Penang General Hospital was hereby selected for the study. RESULTS: Of 393 patients, 184 (46.1%) were identified as CAM users and among these, 121 (65.5%) were actively reported to use CAM (P = 0.008). Nine patients (4.8%) asked or ‘doctor never asked about CAM’ 15 (8.2%), ‘doctors have little knowledge about CAM’ 9.5%, ‘fear of CAM disapproval by the doctors’ 6 (3.4%) and fear of termination of therapy by the doctors’ 6 (3.4%). Among the demographic variables patients having a history of regular health checkups before cancer diagnosis were tend to discuss their CAM use with the doctors (r = 0.199, Thailand 0.124, South Korea 0.347). Additionally, progressive disease was also associated with a significant decline in QoL. Even a CR demonstrated a notable negative impact on QoL (Taiwan 0.590, South Korea 0.728, South Korea 0.787). The experience of rel/ref HL and sALCL is viewed as potentially devastating by individuals in all three countries. However, variations do exist between regions, suggesting that individuals may approach the TTO exercise differently. The results of this study may have important implications for the economic evaluation of future treatments.

CANCER - Patient-Reported Outcomes & Patient Preference Studies

PCN25 
UTILITY OF ADVANCED NON-SMALL CELL LUNG CANCER PATIENTS IN THAILAND: PRELIMINARY STUDY
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OBJECTIVES: Lung cancer is the common cause of cancer death in developing countries. In Thailand, lung cancer, including non-small cell lung cancer (NSCLC) ranks third of 10 leading sites of cancers. NSCLC has a poor prognosis which has an effect on quality of life of both individual patients and their family. Understanding the quality of life and health utility for lung cancer is important, however, little data are available in Thailand. The purpose of this study is to measure baseline health utility among advance NSCLC patients before treated with first-line chemotherapy. METHODS: A prospective cohort study was implemented in Maharaj Nakorn Chai Mai hospital which is a medical teaching hospital located in the north of Thailand. A variety of first-line chemotherapy regimens were available for treatment. In this study, we included patients aged 18 or above, diagnosed with NSCLC with stage IIB or IV, had performance status (ECOG) 0-1, and were scheduled to receive first-line chemotherapy. The data were collected from January to March 2012. Utility was measured using EuroQol Thai version. The data were collected while patients visited outpatient oncology clinic. Descriptive statistics were used for data analyses. RESULTS: During three months period, 24 patients were included. Eight patients were NSCLC stage IIB while 16 were stage IV. Mean utility value of overall NSCLC, NSCLC stage IIB and NSCLC stage IV at baseline before receiving first-line chemotherapy were 0.419, 0.475 and 0.398, respectively. CONCLUSIONS: Utility values of patients with advanced NSCLC are likely to be downward due to the severity of disease; therefore, choosing the appropriate first-line chemotherapy regimen might be necessary to consider the quality of life of patients.