PCN61
THE COST-EFFECTIVENESS OF CETUXIMAB USE AMONG ELDERLY MEN WITH NON-SITE DETECTED PROSTATE CANCER PATIENTS

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OBJECTIVES: The cost-effectiveness of cetuximab has been controversial mainly because of its marginal clinical benefits at very high medication cost. This study examined the cost-effectiveness of cetuximab versus best supportive care in the patients with metastatic colorectal cancer in US from the perspective of Medicare. METHODS: As modeled in a decision tree, three treatment options (cetuximab, cetuximab plus irinotecan, and best supportive care) are evaluated clinically and economically. Costs of drugs, treatment, and a cost of palliative care are largely determined by the treatment response, complete or partial response, stable disease, or progressive, and whether or not the patient experienced severe infusion reaction and/or severe adverse events. The primary outcome is quality-adjusted life expectancy. The treatment response rates and quality of life measurements are based on the results from clinical trials. Incremental cost-effectiveness ratios were calculated. RESULTS: The incremental cost per quality-adjusted life year (QALY) was $336,218 for cetuximab, and $318,609 for cetuximab plus irinotecan, in comparison with best supportive care. One-way sensitivity analyses showed that the cost of cetuximab had the highest impact on ICERs, compared to other costs and quality of life parameters. Probabilistic sensitivity analyses by Monte Carlo simulation demonstrated that best supportive care is more cost-effective than cetuximab treatments until the threshold of willingness to pay is raised up to $240,000. CONCLUSIONS: Our analyses suggest that cetuximab is not cost-effective, either in monotherapy or in combination with irinotecan, as the cost-effectiveness ratios are far beyond the accepted threshold of $50,000 per QALY gained. Cetuximab treatments need to be carefully evaluated before being delivered to metastatic colorectal cancer patients.

PCN62
COST EFFECTIVENESS OF RADICAL PROSTATECTOMY VERSUS WATCHFUL WAITING FOR NON-SCREEN DETECTED PROSTATE CANCER: EXTRAPOLATING FROM THE SCANDINAVIAN TRIAL

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OBJECTIVES: The benefit of screening for and definitive treatment for prostate cancer has been questioned. Results from the Scandinavian study of radical prostatectomy compared with watchful waiting in men with non-screen detected prostate cancer was associated with decrease in prostate cancer specific mortality, palliative treatment and overall survival. We evaluated the cost-effectiveness of radical prostatectomy compared to watchful waiting using data from the Scandinavian study protocol when extrapolated to the US. METHODS: We used the previously reported cost of care data for patients with prostate cancer based on the patterns of care observed in the CaPSURE database. The incremental cost-effectiveness ratio (ICER) between watchful waiting and best supportive care are presented to demonstrate the value of cetuximab treatments. Finally, sensitivity analyses are conducted to test the robustness of the results. RESULTS: In the patients with metastatic colorectal cancer, the incremental cost-effectiveness ratios (ICER) between cetuximab treatments and best supportive care are demonstrated that best supportive care is more cost-effective than cetuximab treatments until the threshold of willingness to pay is raised up to $240,000. CONCLUSIONS: Our analyses suggest that cetuximab is not cost-effective, either in monotherapy or in combination with irinotecan, as the cost-effectiveness ratios are far beyond the accepted threshold of $50,000 per QALY gained. Cetuximab treatments need to be carefully evaluated before being delivered to metastatic colorectal cancer patients.

PCN63
THE COST-EFFECTIVENESS OF MOHS MICROGRAPHIC SURGERY VERSUS SURGICAL EXCISION FOR THE TREATMENT OF NON-MELANOMA SKIN CANCER

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OBJECTIVES: Compare cost-effectiveness of three non-melanoma skin cancer (NMSC) strategies: all Mohs Micrographic Surgery (MMS), all surgical excision and mixed MMS and excision. METHODS: A decision-analytic model compared strategies using data from a prospective sample (n = 540) treated with MMS or excision at a university-affiliated dermatology clinic from 1999–2000. The newest (2007) Medicare payment rules with tumor size, location and number of lesions were used. Total included the procedure, pathology, drugs, 2 month follow-up visits, second- ary procedures, repairs or grafts and recurrences. Short Form (SF)-12 and Skindex scores at baseline and 2 years were mapped to the Health Utility Index (HUI) to adjust life expectancy and recurrence, our major outcomes. Cost per quality adjusted life year saved (QALY) was the final outcome. Sensitivity analysis tested uncertainty of model parameters. RESULTS: The all MMS strategy was most cost-effective when compared to mixed (ICER = $30,521/QALY) and all excision strategies (ICER = $6,722/QALY). The mixed strategy was cost-effective compared to the all excision strategy (ICER = $1,924/QALYS). All excision was least costly ($183.01/patient), and all MMS was most costly ($1830.10/patient). The all MMS strategy (17.2081 QALYS) was most effective compared to mixed (17.032 QALYS) and all excision (17.190 QALYS) strategies. The model was sensitive to the proportion of patients who receive MMS versus excision in the mixed strategy. The all MMS strategy no longer is cost-effective compared to the mixed strategy when the MMS proportion is decreased from 88.8% to 50% (ICER = $2,793,794) and at 45% the mixed strategy dominates all other strategies. Not until $900 is added to procedure cost do any strategies lose their cost-effectiveness. All MMS for NMSC is the most cost-effective strategy although the mixed strategy is preferred in some mixtures of patient populations. This analysis demonstrates that MMS is cost-effective if clinically indicated.

PCN64
COST-EFFECTIVENESS ANALYSIS OFSORAFENIB VERSUS BEST SUPPORTIVE CARE (BSC) IN ADVANCED HEPATOCELLULAR CARCINOMA (AHCC): THE PUBLIC HEALTH CARE SYSTEM PERSPECTIVE IN BRAZIL

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OBJECTIVES: Sorafenib is the only agent that has proven to improve survival in AHCC (Llovet, NEJM 2008), and has been considered cost-effective in Canada (Muszbek, Curr Med Res Opin 2008), when compared with BSC. In clinical practice in Brazil, however, patients with AHCC with no access to sorafenib are often treated with other systemic agents, none of which are able to improve the outcome. The objective of this study was to evaluate the cost-effectiveness of sorafenib+BSC vs BSC alone in Brazil, from the perspective of the public health care system. METHODS: A Markov model was developed to project the lifetime survival and costs for both interventions using data from the TTP and OS Kaplan-Meier curves from SHARP trial using a log-normal distribution and an ad BSC panel with Brazilian medical oncologists, hepatologists, and liver surgeons. Treatment effectiveness was measured in life-years gained (LYG). Drug costs included sorafenib, administration, physician visits, monitoring, and adverse events. Costs (in R$, with R$ 1.00 = US$ 0.58) and survival benefits were discounted annually at 5%. Univariate and probabilistic sensitivity analyses were conducted. RESULTS: Lifetime per patient costs in R$ (US$) were 76,032 (43,447) and 9,776 (5,586) for sorafenib+BSC and BSC alone, respectively. Sorafenib drug cost accounted for nearly 79% of treatment costs. The incremental survival benefit with sorafenib+BSC was 0.49 life-years. The incremental cost-effectiveness ratio of sorafenib+BSC vs BSC alone was R$ 135,262 (US$ 77,293) per LYG. Variations in the longnormal parameters for OS of both alternatives demonstrated to be the most influential variables in the cost-effectiveness result in the deterministic sensitivity analyses. CONCLUSIONS: The addition of sorafenib to BSC is the only intervention that has been found to improve survival in AHCC and the cost-effectiveness results should be interpreted considering the low cost and inefficiency of the comparator.

PCN65
A COST-EFFECTIVENESS ANALYSIS OF THE FIRST-LINE TREATMENT REGIMENS FOR MULTIPLE MYELOMA IN MACAO CHINA

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OBJECTIVES: Multiple myeloma (MM) is a hematologic malignancy mainly affecting the elderly population. It is incurable and patients experience a considerable reduction of health-related-quality of life (HRQoL). Some newer therapies have shown better clinical effects but are more costly. Pharmacoeconomic studies on MM have been widely conducted overseas but local data was lacking. This study aimed to examine the cost-effectiveness of the treatments for MM in Macao, China. METHODS: A retrospective cost-effectiveness study with HRQoL assessment was conducted. Forty patients from the largest public hospital in Macao from 1997–2007 with confirmed MM were studied. Data for costs and treatment effects were extracted from patients’
medical records including disease characteristics, treatment regimens, medications used and treatment outcomes. The study was conducted from the perspective of a Macao public hospital. The European Organization for Research and Treatment of Cancer quality-of-life questionnaire (EORTC QLQ-C30) (version 3.0, Chinese-Hong Kong) was used for HRQoL assessment. **RESULTS:** The standard dose-cost-based and vincristine-doxorubicin-dexamethasone-based regimens (VAD) were the most common treatment regimens. There were 24 and 10 patients in the melphalan-based and VAD-based group respectively. Six patients were not studied due to incomplete information. Proportion of patients in the melphalan-based group were at a more advanced age (70.4 ± 7.4 years; p < 0.001). The melphalan-based group showed a lower overall treatment cost (MOP 29,231 versus MOP 44,831; p = 0.521, 1 USD = 8 MOP), especially on inpatient medication cost (MOP 5,809 versus MOP 13,908; p = 0.096). The VAD-based group showed better clinical outcomes than the melphalan-based group in terms of overall survival, progression-free survival and survival probability with time. The incremental cost-effectiveness ratio of VAD-based regimens compared with melphalan-based regimen was MOP 6,695 per life-year-gained. **CONCLUSIONS:** The results suggest that VAD-based regimens are very cost-effective according to the WHO recommended thresholds for cost-effectiveness in patients with MM in Macao.

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**PCN66**

OPEN VERSUS LAPAROSCOPIC PROCEDURES FOR COLECTOMY SURGERY FOR PATIENTS WITH COLON RECTAL CANCER: A COST EFFECTIVENESS ANALYSIS, UNDER THE BRAZILIAN PRIVATE PAYER PERSPECTIVE

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OBJECTIVES: To compare costs and outcomes of surgery techniques (open (OP) versus laparoscopic (LAP)) for colon resection surgery in order to assess the impact on costs and clinical outcomes under the private payer perspective in Brazil. METHODS: A decision tree and a Markov model were developed according to the Brazilian guidelines for Health Technology Assessment (Vianna, 2007). Outcomes rates and probabilities for infection, mortality, conversion, survival, recurrence, sepsis and hernia were obtained from clinical literature (Gunnarsson 2008, King 2006, Bonjer 2008). The Markov model was updated to a life time horizon. A public payer perspective was taken and a discount rate of 5% was applied (Vianna, 2007). A sensitivity analysis was performed to assess the robustness of the results. RESULTS: Length of stay (LOS) was 9 days for OP versus 6 days for LAP resulting in a reduction of hospital costs and medical staff fees (MOP5687 OP versus MOP4445 LAP). OP also reduced the complication costs in 70% (~R$981 per procedure). Total costs were 8.52% higher for LAP than OP (R$22,085 vs. R$ 20,350), because of a reduction of hospital costs and medical staff fees (R$5687 OP versus R$4445 LAP). A36 ± MOP, especially on inpatient medication costs. The incremental cost- effectiveness ratio of VAD-based regimens compared with melphalan-based regimen was MOP 6,695 per life-year-gained. **CONCLUSIONS:** The results suggest that VAD-based regimens are very cost-effective according to the WHO recommended thresholds for cost-effectiveness in patients with MM in Macao.

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**PCN67**

COST-UTILITY OF KRAS MUTATION TESTING PRIOR TO TREATMENT IN ADVANCED STAGING COLORECTAL CANCER WITH CETUXIMAB MONOTHERAPY

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OBJECTIVES: To examine the cost-utility of using KRAS mutation testing prior to initiating cetuximab monotherapy for patients with metastatic colorectal cancer (mCRC) from a US payer perspective. METHODS: A decision analytic model was developed to evaluate the clinical and economic impact of three strategies for treating mCRC, 1) cetuximab monotherapy, 2) Best supportive care (BSC); and 3) KRAS mutation testing with cetuximab for KRAS wild type patients and BSC for patients harboring a KRAS mutation. Model parameters were derived from the CO.17 trial published, laboratory and government sources. The model included trial-based survival estimates and adverse event rates as well as costs related to drug treatment and administration, hospitalization, KRAS testing, adverse events, and post-progression use. The model results were examined using one-way and probabilistic sensitivity analyses. RESULTS: Total QALYs for the cetuximab, BSC, and KRAS testing strategies were 0.47, 0.36, and 0.47, respectively. Total costs were $44,301; $46,364; and $43,263, respectively. Relative to BSC, cetuximab for all and KRAS testing strategies had incremental cost-effectiveness ratios of $357,224 and $264,644 per QALY, respectively. Relative to cetuximab for all, the KRAS testing strategy saved $10,037 with a negligible decrease in QALYs. One-way sensitivity analyses found the results to be most sensitive to the survival estimate used in the KRAS testing, adverse events, and post-progression utility score. In the probabilistic sensitivity analysis, BSC had the highest probability of being cost-effective until a willingness-to-pay of $275,000, after which KRAS testing had the highest probability. **CONCLUSIONS:** These results suggest that the use of KRAS testing to select patients for cetuximab treatment in mCRC can reduce costs with little impact on QALYs as compared to using cetuximab for all patients. However, the cost-effectiveness of KRAS testing vs. best supportive care remains well above commonly used cost-effectiveness thresholds.