PCN25
REAL-WORLD EPOETIN ALFA (EPO) AND DARBEPOETIN ALFA (DARB) DOsing AND COST CONSIDERATIONS IN ELDERLY HOSPITAL INPATIENTS: RESULTS FROM A LARGE OBSERVATIONAL STUDY
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OBJECTIVES: To examine inpatient dosing patterns and erythropoietic treatment costs in cancer and pre-dialysis chronic kidney disease (pCKD) elderly inpatients treated with erythropoietic agents from a hospital pharmacy perspective.

METHODS: Analysis of electronic inpatient records from the Premier Perspective Database©, Premier Inc. Charlotte, NC, was conducted. Subjects were identified through hospitalizations recorded between July 2002–March 2005 from >500 hospitals nationwide. Elderly patients (≥65 years) with an admitting diagnosis of cancer or pCKD and receipt of EPO or DARB during hospitalization were included. Patients receiving dialysis or both agents were excluded. For cancer and pCKD indications, baseline demographics, severity of illness, inpatient length of stay, cumulative administered dose, and drug costs were compared between EPO and DARB patients. May 2006 wholesale acquisition costs were used to calculate erythropoietic costs.

RESULTS: A total of 13,940 hospitalizations (EPO: 12,512; DARB: 1,428) for inpatients with cancer and 42,856 (EPO: 38,538; DARB: 4,318) for inpatients with pCKD were identified. For both indications, patient characteristics were comparable between the two groups.

Mean cumulative administered dose per inpatient stay (cancer: EPO 59,529 mcg; DARB 292 mcg; pCKD: EPO 39,497 mcg; DARB 348 mcg) resulted in a dose ratio between EPO and DARB of 204:1 and 215:1 (Units EPO: mcg DARB) for cancer and pCKD inpatients, respectively. Based on cumulative administered dose/hospitalization, the price premium associated with DARB drug cost was >70% when compared to EPO for both oncology and pCKD inpatients (oncology: EPO $724 vs. DARB $1299 p < 0.0001; pCKD: EPO $481 vs. DARB $818, p < 0.0001). CONCLUSION: Based on the evidence from this large retrospective analysis of elderly inpatients, EPO was significantly less costly compared with DARB in both therapeutic areas. These results are similar to those observed in elderly patients in the outpatient setting with pCKD or cancer; and mirror results observed in inpatients ≤65 years.

PCN26
FIRST, SECOND- AND THIRD-LINE CHEMOTHERAPY FOR NONSMALL CELL LUNG CANCER: PATTERNS OF CARE AND COST
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OBJECTIVES: The study objective is to characterize first-, second- and third-line chemotherapy use and costs for patients with NSCLC from a payer’s perspective. METHODS: Enrollment and claims records from a large, multistate private health insurance plan were utilized to identify study subjects. Criteria for analysis include subjects aged 21 years and older, with ≥3 ICD-9 diagnosis codes for NSCLC from January 2002 to December 2005 and continuous enrollment for 12 months prior to diagnosis. An algorithm was developed to identify first-, second-, and third-line agents based on chemotherapy (J-codes) sequencing and delivery dates (CPT codes). Charge data were applied to estimate costs. Direct medical care costs (inpatient, outpatient, pharmacy, skilled nursing facility) were estimated over 12 and 24 months using the Kaplan-Meier Sample Average estimator to account for deaths and disenrollments. RESULTS: A total of 42% of NSCLC cases received chemotherapy (n = 3323); 1860/3323 met criteria for analysis. Average age was 63 years (range 26–103) and 44% were female. Most common therapies (number of patients): first-line: carboplatin + paclitaxel (939), carboplatin + etoposide (321), carboplatin + gemcitabine (196), docetaxel + docetaxel (185); second-line: docetaxel (98), gefitinib (77), erlotinib (49), gemcitabine (37); third-line: gefitinib (35), pemetrexed (14), erlotinib (13), carboplatin + paclitaxel (13). Number starting treatment (%), mean observed treatment time in months: first-line only: 132 (72%), 8; first-second-line: 375 (20%), 11; first-second-third-line: 153 (8%), 14. Mean costs (12 months): first-line only: $136,385 (SE-2254); first-second-line: $176,652 (SE-3040); first-second-third-line: $215,077 (SE-8215). Mean costs (24 months): first-line only: $153,752 (SE-3367); first-second-line: $213,528 (SE-7265); first-second-third-line: $277,007 (SE-12288). CONCLUSION: Less than 1/3 of NSCLC patients receive second- and third-line chemotherapy. Although treatment duration was longer for patients receiving multiple lines of therapy, additional lines of treatment did not significantly increase average monthly costs ($19,500).

PCN27
AN ANALYSIS OF COSTS ASSOCIATED WITH ADMINISTRATION OF TRASTUZUMAB-BASED COMBINATION IV THERAPIES IN METASTATIC BREAST CANCER PATIENTS IN A US POPULATION
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OBJECTIVES: Trastuzumab, a monoclonal antibody, is administered intravenously as monotherapy or in combination with chemotherapy in patients with metastatic breast cancer (MBC) whose tumors over express HER2. This study assessed the cost components of providing trastuzumab-based combination IV therapies to women with MBC. METHODS: An administrative claims database of >60 multi-specialty medical practices/clinics in the US was used to identify women with MBC (ICD-9 code 174 including 196–198) between January 01, 2003 and May 31, 2006 and receiving trastuzumab plus another IV therapy. Allowable amounts for a claim, which closely represents the actual payments to providers, were used to estimate costs cost per IV administration visit. Billable cost components were categorized based on published literature. RESULTS: A total of 151 patients with 1292 clinic visits receiving any of 7 trastuzumab-based combination IV therapies were identified. The total mean cost per visit across all trastuzumab-based combinations was $3511 of which 70% was accounted for by drugs, 11% by administration of the IV and 19% for other visit-related services, which include supplies and equipment, evaluation and management services, and other concomitantly administered IV or oral drugs. Trastuzumab plus paclitaxel was the most commonly used combination with non-drug costs accounting for 32% ($1072) of total costs ($3341) per visit. The non-drug costs associated with administration of the second most commonly used combination, trastuzumab plus vinorelbine, were 24% ($612) of total costs ($2563) per visit. CONCLUSION: Excluding drug costs, costs associated with IV administration of trastuzumab-based combination therapies and other visit-related services are approxi-
Abstracts

A MARKOV MODEL EVALUATING THE COST-UTILITY OF A 4D REAL-TIME ELECTROMAGNETIC TRACKING SYSTEM (CALYPSO® 4D LOCALIZATION SYSTEM WITH BEACON TRANSPONDERS) IN THE LOCALIZATION OF PROSTATE TUMORS DURING RADIOThERAPY

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OBJECTIVES: Since accurate tumor localization during radiotherapy is critical to maximizing therapeutic efficacy while minimizing toxicity, the cost-effectiveness of localization technologies should be investigated. We performed a cost-utility analysis evaluating the relative advantage of using a real-time 4D electromagnetic tracking system, the Calypso® 4D Localization System with Beacon® Transponders (“Calypso® 4D Localization System;” Calypso Medical, Seattle, Washington) during prostate radiotherapy. METHODS: Using decision analysis and Markov processes, the outcomes of patients localized during prostate radiotherapy were simulated over five years and measured as direct costs from a payer’s perspective and quality-adjusted life years (QALYs). The clinical pathway for patients undergoing external beam radiation was modeled via health states: 1) Time in Treatment, 2) Relapse-Free with Localization, 3) Relapse-Free without Localization, and 4) Deceased. Using evidence from a prospective clinical trial of the Calypso® 4D Localization System and published literature, transition states were modeled for achievement of biochemical no evidence of disease (bNED) control and biochemical relapse-free survival (BRFS). Costs and disutilities of radiation-induced toxicities were included. Post-hoc sensitivity analyses were performed. RESULTS: Over five years, patients localized with real-time 4D electromagnetic tracking gained 2.47 QALYs at $5432/QALY. Compared to ultrasound, electronic portal imaging devices, or computed tomography, the real-time 4D electromagnetic tracking system yielded superior QALY gains at comparable costs. Compared to ultrasound, this technology generated 43 additional quality-adjusted life days and an incremental cost-effectiveness ratio of $14,053/QALY. Overall, the model was sensitive to changes in bNED control rates and BRFS. CONCLUSION: The real-time 4D electromagnetic tracking system is cost-effective for target localization during prostate radiotherapy. However, the current model’s sensitivity to variances in long-term outcomes warrants collection of rigorous evidence on long-term quality of life and tumor control in patients using localization technologies. Future studies might incorporate patient registry data, patient-reported outcomes, and follow-up data from prospective clinical trials.

A COST—UTILITY ANALYSIS MODEL FOR THE SECOND LINE TREATMENT OF METASTATIC RENAL CELL CARCINOMA IN MEXICO

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OBJECTIVES: Renal cancer represents 1.5% of all tumors observed in Mexico and they are responsible of high expenditures in the Mexican Health System. The purpose of the study was to model the economic and health consequences of second-line treatments (previous failure of cytokine therapies) in adult patients with metastatic renal cell carcinoma (mRCC) in stages III and IV from the health care payer’s perspective. METHODS: A cost—utility analysis was developed using a Markov modeling approach. The model simulates costs and QALYs gained in a ten-year period among four possible health states (no new progression, death due to mRCC, history of new progression and death due to other causes). The model aimed to compare sunitinib 50 mg/day vs. local best supportive care (BSC) as second-line treatments. Transition probabilities and QALYs of the Markov model were obtained according to clinical trials previously published in the literature. Resource use and costs data was obtained from hospital records at Hospital de Oncología CMN “Siglo XXI” in Mexico City (n = 80). Both costs and QALYs were discounted using a 5% annual rate. Probabilistic sensitivity analysis was performed and tornado diagrams were constructed (±25% on relevant model variables). RESULTS: Second line treatment with sunitinib showed the highest QALYs gained per patient (1.32 QALYs) vs. BSC treatment (0.39 QALYs). Nevertheless, expected health care costs for sunitinib resulted in US$36,928 and BSC therapies in US$4103. The incremental cost per QALY gained resulted in US$35,238. Results were robust to Monte Carlo first order sen-