Abstracts

years with an admittance diagnosis of cancer, had received chemotherapy, and were treated with EPO or DARB during their hospital stay. Patients were excluded if they had chronic kidney disease, received renal dialysis, or were treated with both ESAs. To evaluate the minimum of outliers, 2% of patients with extreme doses in each group were excluded from the dosing analyses. October 2008 acquisition costs (EPO: $13.77/1000 Units, DARB: $4.818/mcg) were used to calculate ESA costs. 

RESULTS: A total of 10,737 inpatient stays were identified (EPO: 8,218, DARB: 2,315). EPO patients were slightly older than DARB patients (age: EPO 60.6 years, DARB 54.9 years, P = 0.0008). Gender distribution and mean hospitalization length of stay (LOS) were comparable between the two groups (% women: EPO 53.7%, DARB 52.7%; LOS in days: EPO: 13.1, DARB: 12.7; P > 0.05 for both). Mean cumulative dose per inpatient stay was EPO 64,639 Units and DARB 109 mcg, corresponding to a dose ratio of 2091. (Units EPO: mcg DARB). The corresponding ESA treatment cost was significantly lower in the EPO group, compared with DARB (EPO: $890, DARB: $1,489, P < 0.0001). Subset analyses based on 2007 dosing patterns reported similar findings, as did sensitivity analyses using different definitions of outlier doses. CONCLUSIONS: This analysis reported a dose ratio between EPO and DARB of 2091. (Units EPO: mcg DARB) in cancer patients receiving chemotherapy. EPO was found to cost 40% less than DARB, based on the cumulative dose administered during hospitalization despite the two groups having comparable LOS.

PCN27 COMPARING AND VALIDATING DIFFERENT TYPES OF PROPENSITY SCORE MATCHING TECHNIQUES

Background: Oncology patients often receive multiple treatments during the course of their disease. The model assumes that matching cannot control for unobserved bias. Using the Propensity Algorithm and Rosenbaum bounding approach, we aim to show how choosing a strongly unmeasured variable must influence the selection process to undermine the implication of matching analysis. METHODS: The Surveillance, Epidemiology, and End Results (SEER) Data is used for the analysis. The SEER-Medicare Database is created by linking Medicare identifiers to SEER patients aged 65+ and all claims collected including hospital, physician, clinic, patients' hospital of care and associated hospital volume is computed. Patients treated for RCC and overall volume hospitals are matched in seven different ways for demographic and clinical characteristics. Treatment costs are also compared. The best technique is chosen by the Propensity Algorithm. Rosenbaum bonds estimates and Mantel and Haenszel tests are calculated to provide evidence to the degree that these results hinge on unobservable differences. 

A volume cohort was constructed consisting of 19,375 female SEER-Medicare patients, aged 65+, suffering an in situ and/or invasive breast cancer during 2003–2005 with surgical treatment performed at 567 hospitals. Mahalanobis matching created the best balanced comparable sets. After matching, samples were similar in terms of race, comorbidity and adjuvant therapies. Under the assumption of no hidden bias, costs were lower for high volume hospitals (p = 0.000). Results were insensitive to a bias that would double the odds of being treated at high volume hospitals but sensitive to a bias that would triple the odds. CONCLUSIONS: Several matching techniques exist and can result in different on the type of matching chosen. One needs to check which technique best suited for the data. Rosenbaum bonds provide evidence on sensitivity of the estimated results for unobservable factors that are not controlled by propensity score matching.

RETROSPECTIVE CLAIMS DATABASE ANALYSIS OF THE DIRECT MEDICAL COSTS ASSOCIATED WITH SURGICAL HOSPITALIZATION AND SUNITINIB IN THE TREATMENT OF PATIENTS WITH RENAL CELL CARCINOMA WHO ARE UNDER 65 YEARS OLD

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OBJECTIVES: To quantify direct medical costs (inpatient, outpatient, pharmacy) of initial therapy with FDA-approved renal cell carcinoma (RCC) oral therapies (sorafenib, sunitinib) in treatment of RCC patients who are privately insured and under 65 years. METHODS: Using data from MarketScan MedStat, a database covering all US census regions and included 182 million lives, we conducted a retrospective claims-based study. Between January 2002 and December 2007, patients with ≥2 RCC claims (ICD-9 189.0, 198.0), continuous health care coverage, and ≥180 days of coverage before RCC diagnosis and who received sorafenib or sunitinib were eligible for inclusion. Observation period lasted from first drug-dispensing date until ≥12 months or first of therapy-switch, nephrectomy, disenrollment, or study end (December 31, 2007). Univariate and multivariate Tobit analyses were conducted. Variables included age, sex, region, plan type, comorbidities, prior treatments/procedures, and time since RCC diagnosis. RESULTS: Of 10,462 RCC patients identified, 144 received sorafenib and 220 received sunitinib as initial therapy. In the 180 days before RCC diagnosis, total direct medical costs, baseline demographics, and comorbidities were not statistically significantly different between groups. Univariate total monthly medical costs for the sunitinib group were statistically significantly higher than for the sorafenib group ($9476 vs. $7426, respectively; P < 0.01), representing a yearly cost difference for sunitinib of $24,588 more than sorafenib. Univariate incremental monthly inpatient and pharmacy costs for sunitinib were $861 (P = 0.01) and $889 (P < 0.01), respectively, and outpatient therapy was $300 (P = 0.14) more than sorafenib. Multivariate analyses for incremental total monthly inpatient and pharmacy costs for sunitinib also remained significant at $3,199, $1259, and $589, respectively (P < 0.01). CONCLUSIONS: This analysis showed statistically significant differences, including lower total monthly medical, inpatient and pharmacy costs, associated with sorafenib compared with sunitinib when used as initial therapy in RCC patients under 65 years. Reasons for these differences require further exploration.

THE COST SAVINGS ASSOCIATED WITH BEVACIZUMAB PLUS CISPLATIN AND GEMCITABINE (BEVACIZUMAB-BASED THERAPY) TREATMENT COMPARED WITH CETUXIMAB PLUS VONOREBINE AND CISPLATIN (CETUXIMAB-BASED THERAPY) IN PATIENTS WITH ADVANCED OR RECURRENT NON-SMALL CELL CANCER (NSCLC) ACROSS FOUR EUROPEAN COUNTRIES

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OBJECTIVES: New therapies for advanced NSCLC offering benefits over standard treatment with chemotherapy should also offer value for money. Bevacizumab combined with chemotherapy improves survival in patients with advanced NSCLC compared with chemotherapy alone. Bevacizumab has shown a marginal survival benefit but no improvement in progression-free survival. Marketing authorization is anticipated in 2009. This study aimed to compare treatment costs with bevacizumab-based therapy with either cetuximab- plus cetuximab-based therapy in France, Germany, Italy and Spain. METHODS: A Markov model was used to compare drug and administration costs associated with treating advanced NSCLC with bevacizumab-based or cetuximab-based treatment. Patients move from non-progressed disease before death, according to transition probabilities of the efficacy of bevacizumab-based and cetuximab-based therapy in terms of progression-free survival using data from the respective pivotal trials. A common post-progression survival risk was assumed. Drug costs assumed up to 6 chemotherapy cycles, initial administration of cetuximab at 400 mg/m² followed by 250 mg/m² weekly until progression and that bevacizumab was administered at 7.5 mg/kg until progression. The model estimated average drug and administration costs (data derived from local sources) per patient. RESULTS: Across the four countries, the incremental cost of drug with bevacizumab-based therapy ranged from €1330 to €902 less per patient compared with cetuximab-based therapy. Similarly, the mean total treatment cost with bevacizumab-based therapy ranged from €4,713 to €12,286 less per patient compared with cetuximab-based therapy. Compared with a treatment cost of bevacizumab-based and cetuximab-based therapy were €23,849 and €35,678, respectively (a saving of €11,829 per patient with bevacizumab-based therapy). CONCLUSIONS: Targeted therapy using bevacizumab is less costly than cetuximab in representative countries. Based on these results bevacizumab provides better value in terms of budget and outcomes in patients with advanced NSCLC.

THE COSTS OF TREATING PATIENTS WITH ADVANCED OR RECURRENT NON-SMALL CELL CANCER (NSCLC) WITH BEVACIZUMAB PLUS CISPLATIN AND GEMCITABINE COMPARED WITH Pemetrexed PLUS CISPLATIN IN INDUCTION AND MAINTENANCE THERAPY IN GERMANY AND ITALY

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OBJECTIVES: Although new treatments for advanced NSCLC offer benefits over standard chemotherapy they should also offer value for money by reducing treatment costs and improving patient survival and time to progression in patients with advanced NSCLC with chemotherapy compared with chemotherapy alone. Pemetrexed has shown improved efficacy over gemcitabine for induction chemotherapy and best supportive care in maintenance and marketing authorization is anticipated during 2009. The aim of this study was to compare the treatment costs of bevacizumab plus cisplatin and gemcitabine (bevacizumab-based therapy) with pemetrexed plus cisplatin induction and maintenance therapy (pemetrexed-based therapy) in Germany and Italy. METHODS: A 3-state Markov model was used to evaluate the costs of treating advanced or recurrent NSCLC with either bevacizumab-based or pemetrexed-based therapy. The model assumes patients move between states according to transition probabilities derived from the efficacy data (progression-free survival) from the pivotal trials. Drug costs assumed chemotherapy was given for up to 4 cycles, that single agents pemetrexed and bevacizumab (7.5 mg/kg) were administered until progression. RESULTS: Compared with pemetrexed-based therapy, the mean monthly drug cost with bevacizumab-based therapy was €769 less per patient in Italy. The mean monthly drug costs for bevacizumab-based therapy were €6455 and €6106 for pemetrexed-based therapy in Germany/Italy, respectively. However, the mean monthly cost of bevacizumab was almost 3 times less than pemetrexed (€3499 vs €8571 in Germany; €2067 vs €6360 in Italy). The mean total treatment cost with bevacizumab-based therapy was always less than pemetrexed-based therapy (e.g. €27550 for bevacizumab-based therapy, €33291 for pemetrexed-based therapy in Italy). CONCLUSIONS: Triplet therapy with bevacizumab is similar or less costly than doublet therapy with pemetrexed. Furthermore, it is anticipated that drug costs with bevacizumab-based therapy will reduce in 2009 when gemcitabine comes off patent. From a budget perspective bevacizumab should be considered as the targeted therapy of choice for patients with advanced NSCLC.