PCN156

EFFECTS OF PHARMACEUTICAL INNOVATION AND DEMOGRAPHIC CHANGE ON THE GERMAN ONCOCOLOGY MARKET

Sign F1

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OBJECTIVES: Several studies forecasting health care spending predict continuously increasing expenses due to at least three different factors: ageing, technical progress, and increasing prices. The aim of this study is to identify the effects of influencing factors on the German oncology-related expenditures on prescribed drugs (PD/OPs), considering predictor variables such as elderly (65 years and older) population (POP65), two pharmaceutical innovation proxies (product age [NEW], parallel trade [PT]), logarithmized prices (PRICE), and relevant health care reference price (RRP). METHODS: A Random Coefficient Mixed Model is implemented to explore multivariate longitudinal/repeated observation data excluding drug-drug variation from evidence, providing more efficient estimators by separating aging (changes over time within drugs) from cohort effects. RESULTS: The analyses including logarithmized German monthly prescription data for a 5 years period (2003–2007) covering all relevant ATC classes related to cancer treatment show highly significant effects within a fixed effects model for LC(0.043,p < 0.0001), NE-W1(1.6264,p < 0.0001), PT(2.1314,p < 0.0001), and PDOP65(2.1976,p < 0.0001). The random effects model also provides highly significant results for the drug specific INTERCEPT(37.0172,p < 0.0001), time-varying effects of REFORM(0.0005,p < 0.0001), and PRICE(1.3300,p<0.0001). CONCLUSIONS: The results show increasing oncology-related prescriptions with increasing manufactures (respectively decreasing parallel imports) in the market and the longer the drugs are available in the market. It seems that prescriptions are influenced by a certain awareness and trust in new drugs. The newer the drug the less it’s prescribed which might be a consequence of risk adversity due to lacking experienced successful treatments. Decreasing prescriptions with increasing elderly population is somewhat counterintuitive but might be caused by multimorbidity and difficulties due to adverse effects of multiple prescriptions. The intercept indicates a high baseline and over time reforms are not successful in cost containment. Additionally, increasing prices lead to increasing oncology related prescriptions.

PCN157

COST-EFFECTIVENESS OF UGT1A1 GENOTYPING IN IRINOTECAN THERAPY

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OBJECTIVES: Studies have shown that the use of high-dose irinotecan in cancer therapy is associated with an increased risk for severe neutropenia in UGT1A1 7/7 genotype patients. The aim of the present study was to evaluate cost-effectiveness of UGT1A1 genotyping prior to administration of high-dose irinotecan in second-line colorectal cancer treatment. METHODS: UGT1A1 genotyping with subsequent initial irinotecan dose reduction or a prophylactic use of G-CSF in UGT1A1 7/7 genotype patients was compared to standard therapy in a decision analysis. The effectiveness outcome was severe neutropenia occurrence and number of life-years gained. Cost-effectiveness of UGT1A1 genotyping was calculated separately for patients with African, Asian and Caucasian origin due to different UGT1A1 7/7 genotype frequencies. The analysis was performed from the USA health care payer perspective. RESULTS: UGT1A1 genotyping in combination with subsequent reduction of initial irinotecan dose for UGT1A1 7/7 genotype patients was cost-saving for the population of African and Caucasian origin. On the contrary, an incremental cost-effectiveness ratio was more than 6 mio USD per LYG for the population of Asian ancestry. Furthermore, UGT1A1 genotyping with subsequent prophylactic use of granulocyte-colony stimulating factors in UGT1A1 7/7 genotype patients resulted in incremental cost-effectiveness ratios above 3 mio USD per life-year gained for all population groups. CONCLUSIONS: The use of UGT1A1 genotyping prior to high-dose irinotecan therapy could represent a good value for money for certain patient groups.

PCN158

LUXEMBOURG LUNG CANCER PROJECT: POTENTIAL CLINICAL AND ECONOMIC IMPACT OF BIOMARKER DEVELOPMENT IN THE DIAGNOSIS AND TREATMENT OF SINGLE PULMONARY NODULES IN LUXEMBOURG

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OBJECTIVES: As part of a program using economic evaluation to guide discovery efforts in personalized medicine, we evaluated the potential clinical and economic impact of biomarker-directed management of patients with single pulmonary nodules (SPN) in Luxembourg. METHODS: We conducted a decision model from the payer perspective using data from Luxembourg and neighboring countries. Decision pathways were based on input from clinical experts and health services researchers. The model follows patients from SPN identification to death comparing standard care (bronchoscopy, CT scans, and FDG PET scans) with biomarker-directed evaluation. Endpoints included lung cancers detected, false positive and negative tests, life expectancy, and related medical care costs. Threshold analyses were performed to assess levels of biomarker performance that would be cost-effective. RESULTS: Compared to standard care, biomarker-based management produced an average survival benefit of 0.015 years and average cost savings of €1430, dominating standard care. The improved life expectancy was primarily the result of identifying and treating patients with malignant tumors earlier. The cost savings were primarily driven by avoiding costly diagnostic procedures (e.g. FDG PET). In sensitivity analysis, cost and utilities for bronchoscopy, CT, and FDG PET had little impact on results. At a sensitivity/specitivity of 0.83/0.83, the biomarker-based strategy was no longer more effective than standard care. There was no simultaneous decrease in sensitivity/specitivity that made the biomarker-based strategy more costly than standard care. Finally, the cost of the biomarker-based test could increase from €150 with the strategy remaining less costly than standard care. CONCLUSIONS: Biomarkers have the potential to improve the management of patients diagnosed with SPN in Luxembourg. At a sensitivity/specitivity of 0.95/1.0, biomarker-directed management could improve outcomes and reduce costs for the Luxembourg health system. Biomarker development efforts at this and other strategic points along the lung cancer treatment pathway are underway.

PCN159

TREND OF METASTASECTOMY AND CHEMO- AND BIOLOGIC THERAPY IN PATIENTS WITH METASTATIC COLORECTAL CANCER

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OBJECTIVES: Metastasectomy in patients with metastatic colorectal cancer (mCRC) is the best option to achieve long-term survival and offers the only chance for cure. Increasing the number of resectable patients is therefore a medical treatment goal. This study examines the trend over time in metastasectomy and pre-surgery chemo- and biologic therapy in newly diagnosed mCRC patients. METHODS: Using a large, U.S. medical claims database from a national commercially-insured population, we identified patients with newly diagnosed mCRC between 2001 and 2005. Metastasectomy results. At a sensitivity/specitivity of 0.95/1.0, biomarker-directed management could improve outcomes and reduce costs for the Luxembourg health system. Biomarker development efforts at this and other strategic points along the lung cancer treatment pathway are underway.
cancer patients irrespective of drug is identified. The estimate combines the prediction of number of newly diagnosed and treated patients with the prediction of number of cancer patients irrespective of drug is identified. The estimate combines the prediction of number of newly diagnosed and treated patients with the prediction of number of cancer patients irrespective of drug.

PCN161

REIMBURSEMENT OF ADMINISTRATION COSTS ARE UNAFFECTED BY SINGLE, DOUBLE OR TRIPLE ANTI-CANCER TREATMENT COMBINATIONS IN SMALL CELL LUNG CANCER (MNSCLC) IN FRANCE AND GERMANY

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METHODS: A systematic literature search performed in Medline, Embase, Cochrane, and Centre of Reviews and Dissemination databases identified 378 publications of anticancer agents. In addition, an evaluation of national reimbursement tariffs in both inpatient and outpatient settings was performed.

CONCLUSIONS: Single- and double-dose administrations of paclitaxel-pemetrexed (PP) and docetaxel-pemetrexed (DP) were cost-effective compared to single-agent paclitaxel (PA) and docetaxel (DO). The cost-effectiveness of triple-drug combinations was not evaluated.

PCN162

REIMBURSEMENT OF ACTIVE-IMMUNOTHERAPEUTICS (AI): AN ANALYSIS BASED ON A STUDY OF CURRENT REIMBURSEMENT APPROACHES

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OBJECTIVES: Despite implementation of radical cost control measures, pharmaceutical expenditure is expected to keep increasing due to highly innovative, expensive drugs, including immunotherapeutics. The objective of this study was to understand how different markets are responding to cost containment pressures, using a comparison-and-contrast approach of reimbursement decisions for three recently approved treatments for metastatic renal cell carcinoma (mRCC). Based on the findings we propose fundamentals to build acceptable reimbursement strategies for AI, including cancer vaccines.

METHODS: We examined commonalities and differences of three drugs for mRCC, assessing drug costs, health technology assessments (HTA), and reimbursement decisions across 7 countries with similar pharmaceutical funding schemes (Canada, France, Germany, Italy, Spain, Sweden, and the UK). In each of the 7 countries primary reimbursement criteria for these drugs were identified, local HTAs were reviewed, and specific qualitative research with local payers and experts was conducted. For country comparisons, drug treatment costs were calculated from a payer perspective (6 weeks therapy).

RESULTS: Treatment cost differences in the seven countries were minimal and mostly related to exchange rates indicating that, for innovative drugs, price convergence has been achieved in these countries. More than 70% of the total HTA evaluations conducted involved immunotherapeutics. Only the SMC assessment recommended against the use of the 3 studied drugs. Most countries applied the HTA to decide on reimbursement. In the US, a set of drug-specific risk-sharing programs was developed for forthcoming drugs. CONCLUSIONS: Most payers accept high priced drugs, however, they certainly restrict patient access or set up different types of agreements with suppliers to be able to maintain budget control. Current reimbursement schemes in the countries studied will need to evolve according to similar parameters in order to give access to highly complex therapies as AI. In each country, the feasibility of implementing processes to track drug use, cost and outcomes will determine how these reimbursement schemes develop.

PCN163

RURAL-URBAN DIFFERENCES IN COLORECTAL CANCER HOSPITALIZATIONS IN WEST VIRGINIA, USA

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OBJECTIVES: Colorectal cancer (CRC) is the third leading cause of cancer mortality in the US with disparities in risk between rural and urban patients. The aim of the study was to 1) describe the characteristics of hospital admissions, 2) compare the length of stay and in-hospital deaths in rural and urban West Virginia residents with a primary diagnosis of CRC. METHODS: Data from the Health Care Cost and Utilization Project, State Inpatient Database for the years 2003, 2005, 2006 and 2007 were used to perform analyses of all discharges with a primary diagnosis of CRC. Chi square tests compared categorical descriptive statistics between rural and urban cases. One-way ANOVA compared mean length of stay based on rural-urban category. RESULTS: Admissions for CRC as a primary diagnosis decreased constantly from 862 in 2003 to 787 in 2007. In hospital deaths rose steadily from 5.1% in 2003 to 7.0% in 2006, but fell to 5.7% in 2007. Mean in-hospital length of stay was 73.0 years and percentage of female admissions ranged between 53.1% and 55.2% over the four years. A greater proportion of patients from large areas (17.4%) died in-hospital compared to small areas (7.0%), micropolitan (8.4%) and rural (5.2%) areas (p < 0.001). Leading primary payer was Medicare for all four locations. Rural patients had the shortest mean length of stay (90.9 days). The mean length of stay differed significantly between rural (9.0 days) and micropolitan (10.0 days) patients. CONCLUSIONS: Colorectal cancer provides a significant burden to the health care system in West Virginia. Unlike previously reported in certain other states and countries, a greater proportion of urban patients in West Virginia are dying in-hospital due to CRC. The reasons for these disparities go beyond demographic differences between rural-urban residents and need to be explored.

PCN164

TWO DIFFERENT DOSES OF PALONOSETRON (PAL) FOR PREVENTION OF CHEMOTHERAPY-INDUCED VOMITING (CIV) IN PATIENTS RECEIVING MODERATELY OR HIGHLY EMETOGENIC (ME) TREATMENT: SYSTEMATIC REVIEW (SR) AND META-ANALYSIS (MA)

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OBJECTIVES: Chemotherapy-induced vomiting (CIV) is a frequent side effect of cancer treatment, with debilitating symptoms and negative effects on quality of life. CIV may be acute (within 24 hours of chemotherapy) or delayed (up to 7 days later). Different doses of PAL are available but the ideal dose is still unknown. A recent meta-analysis demonstrated that PAL is more effective than other serotonin inhibitors in preventing nausea and CIV in patients receiving ME chemotherapy. We aimed to perform a SR and MA of all randomized controlled trials (RCT) comparing PAL 0.25 mg (or 0.3–1 mcg/kg) to PAL 0.75 mg (or 10 mcg/kg) as single intravenous doses in this setting of patients. METHODS: We searched several databases: MEDLINE, EMBASE, LILACS, and CENTRAL. The primary endpoints were the incidence of acute and delayed vomiting. The side effects of each treatment were analyzed. A subgroup analysis was planned and performed to evaluate the influence of the use of corticosteroids. The results of individual studies were pooled in MA, using the Revman 5.1 software. The results were expressed as Risk Ratio (RR). RESULTS: Eight studies with 1674 patients were included. There was no difference between the efficacy of the evaluated doses in preventing either acute (RR = 1.04; CI = 0.95% to 1.18; p = 0.46) or delayed vomiting (RR = 1.01; CI = 0.90 to 1.13; p = 0.89). There were no differences in side effects either: headache (RR = 0.88; CI = 0.64 to 1.20; p = 0.41), dizziness (RR = 1.20; CI = 0.33 to 4.35; p = 0.78), constipation (RR = 0.67; CI = 0.42 to 1.06; p = 0.09) or diarrhea (RR = 1.51; CI = 0.95% to 2.53; p = 0.52). The subgroup analysis found that the addition of corticosteroids had no impact on the efficacy of PAL. CONCLUSIONS: Both doses of PAL have equal efficacy and safety profile in preventing CIV in patients receiving MoHE chemotherapy. The choice of scheme, in this situation, must be the least costly one.

PCN165

SYSTEMATIC REVIEW OF PUBLISHED META-ANALYSES, SYSTEMATIC REVIEWS, AND HEALTH TECHNOLOGY ASSESSMENTS OF RITUXIMAB FOR THE TREATMENT OF NON-HODGKIN LYMHPHOMA

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OBJECTIVES: To perform a review of the published meta-analyses, systematic reviews and health technology assessments (HTA) which evaluated the use of rituximab for the treatment of non-Hodgkin lymphoma (NHL) regarding its benefits, safety profile and cost-effectiveness. METHODS: A search of MEDLINE, Lilacs, Cochrane library, Web of science and INAHTA websites from 1990 to 2009 was conducted. The following MESH terms were used: “Meta-Analysis”, “Systematic Reviews”, “Lymphoma, Non-Hodgkin”, “Lymphoma, Large B-Cell, Diffuse” and “rituximab”. Included studies were those which evaluated the use of rituximab alone and/or in combination with other therapies in first line, second line and maintenance therapy for naive, refractory patients or relapsed disease in different patient characteristics.