compared with BEV + IFN and sunitinib. **METHODS:** A linear decision analytic model was developed to assess the management costs of all-grade and grade 3/4 AEs for BEV + LD IFN from the perspective of health care purchasers in Germany, France and UK. Data sources included published cost literature and clinical trials, official price/tariff lists and country-specific cost databases. **RESULTS:** The total side-effect management costs for BEV + LD IFN were €908, €1,381 and €703 in Germany, France and UK, respectively. The use of BEV + LD IFN provides reduced management costs per patient of €616, €576 and €606, respectively, compared with BEV + IFN, and €1,286, €3,746 and €1,647, respectively, compared with sunitinib. The main drivers for sunitinib costs were thrombocytopenia, neutropenia and lymphopenia compared with fatigue/asthenia, proteinuria and anaemia for BEV + LD IFN. **CONCLUSIONS:** Costs of managing the side effects of sunitinib treatment are greater than those for BEV + IFN in Germany, France and UK [Mickisch, ASCO 2008]. The present analysis shows that combining BEV with LD IFN is associated with the lowest side effect management costs. The tolerability profiles and associated management costs of agents used in mRCC may therefore influence selection of therapy.

PCN17

COST OF MANAGING SIDE EFFECTS OF FIRST-LINE THERAPY FOR METASTATIC RENAL CELL CARCINOMA (MRCC) IN GERMANY, FRANCE, UK AND ITALY: BEVACIZUMAB (BEV) + INTERFERON-ALPHA2A COMPARED WITH SUNITINIB

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OBJECTIVES: The combination of BEV + interferon-alpha2a (IFN) prolongs progression-free survival compared with IFN + placebo [Escudier, Lancet 2007], providing comparable efficacy to sunitinib in patients with mRCC. Notably, the type and frequency of side effects differ between the two regimens. When selecting treatment options, the management of side effects and associated costs are important factors to consider for physicians and health care payers. A previous report showed that grade 3/4 adverse events (AEs) account for the majority of side-effect management costs [Mickisch, ASCO 2008]. We report here the results of an updated analysis of grade 3/4 AE management costs for BEV + IFN and sunitinib. **METHODS:** A linear decision analytic model was developed to compare the management costs of grade 3/4 AEs of BEV + IFN and sunitinib from the perspective of health care purchasers or hospital-based care in Germany, France, the UK and Italy. Data sources included published cost literature and clinical trials, official price/tariff lists and country-specific cost databases. **RESULTS:** The grade 3/4 AE management costs for sunitinib were higher than those for BEV + IFN in Germany (€1785 vs €1367), France (€2590 vs. €1618), UK (€1475 vs. €804) and Italy (€891 vs. €402). The main cost drivers were country dependent, but in general were lymphopenia, leucopenia, neutropenia, thrombocytopenia and fatigue/asthenia for sunitinib; the main cost drivers for BEV + IFN were proteinuria, fatigue/asthenia, bleeding, anaemia and gastrointestinal perforation. The difference in management costs between the two regimens was mainly due to the higher incidence of haematological side effects with sunitinib compared with BEV + IFN and their associated high management costs. **CONCLUSIONS:** The costs of managing AEs of sunitinib are greater than those for BEV + IFN in Germany, France, UK and Italy. AE profiles are therefore an important consideration when selecting treatments for mRCC.

PCN18

ECONOMIC IMPACT OF SEVERE INFUSION REACTIONS IN PATIENTS WITH COLORECTAL CANCER TREATED WITH CETUXIMAB

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OBJECTIVES: To assess the incidence rate and risk factors of severe infusion reactions (IRs), and to quantify the costs associated with their management in patients with colorectal cancer (CRC) treated with cetuximab. **METHODS:** Using administrative claims of a US national commercially insured population, the study evaluates patients with CRC receiving cetuximab treatment from 2004 to 2006. An algorithm was developed to identify IRs using a combination of three indicators: outpatient diagnoses of signs/symptoms of IRs, outpatient treatment for IRs, and ER visits or hospitalizations for IRs. IRs were categorized as severe based on the occurrence of an ER visit/hospitalization with an IR admitting diagnosis; or presence of both outpatient diagnosis of IR signs/symptoms and outpatient IR treatment. Total costs associated with each cetuximab administration were calculated. A logistic regression was run to identify risk factors for IRs. A Generalized Linear Model regression controlling for demographic and clinical characteristics was conducted to quantify additional economic impact of severe IRs. **RESULTS:** A total of 1,122 patients were identified with 12,367 cetuximab administrations. The incidence of severe IRs was 8.4%. Approximately 38% of patients experiencing severe IRs required an ER visit or hospitalization. Mean adjusted costs were $6,339 for administrations resulting in a severe IR that required outpatient treatment only; $13,174 for administrations resulting in a severe IR that required an ER visit or hospitalization; and $4,450 for administrations without an IR. Younger age was associated with a statistically higher likelihood of IRs. Living in states with high pollen counts also had a trend of increased likelihood of severe IRs, although it was not statistically significant. **CONCLUSIONS:** The rate of severe IRs with cetuximab in clinical practice was found to be higher than that reported in the product labeling and clinical trials. Total costs associated with managing severe IRs to payers were substantial.

CANCER – Cost Studies

PCN19

BUDGET IMPACT ANALYSIS OF SARGRAMOSTIM USE IN PATIENTS WITH CHEMOTHERAPY-INDUCED NEUTROPENIA

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OBJECTIVES: Myeloid growth factors are used to treat and prevent chemotherapy-induced neutropenia (CIN). Filgrastim and its long-acting version pegfilgrastim are granulocyte colony-stimulating factors (G-CSF), whereas sargramostim is a dual granulocyte-macrophage colony-stimulating factor (GM-CSF). This study analyzed the budget impact of substituting GM-CSF for G-CSF in the management of CIN from the perspective of a US health plan. **METHODS:** A spreadsheet model was developed to compute annual and per-member-per-month (PMPM) costs associated with CSFs. Inputs included cancer prevalence, the proportion of patients receiving chemotherapy and G/GM-CSFs, incidence and treatment cost of relevant adverse events (e.g., bone pain), and G/GM-CSF drug acquisition and administration costs. Incidence and cost of infection- and febrile neutropenia-related hospitalizations, based on recent analysis of medical insurance claims data, were also used. Cost savings (2006 USD) were assessed for utilization share switches from G-CSF to GM-CSF. **RESULTS:** For a health plan with 1 million members, an estimated 976 patients received G/GM-CSF annually. Modifying baseline utilization shares for pegfilgrastim, filgrastim, and sargramostim of 70/30/0%, respectively, to alternative shares of 50/25/25% yielded almost $2 million in annual cost savings, or $0.161 PMPM. Most of the cost savings were attributed to CSF acquisition and administration costs (81.8%), with lesser savings also observed for hospitalizations (14.6%) and adverse events (3.6%). Savings for patients switching from pegfilgrastim were greater than for patients switching from filgrastim. Results were sensitive to assumptions for drug cost and frequency of administration, but cost savings were observed for most scenarios. **CONCLUSIONS:** This study suggests that health plans can realize substantial cost savings by substituting sargramostim for filgrastim and pegfilgrastim in CIN patients. With 25% of sargramostim substitution, cost savings could reach more than 16 cents PMPM for a typical US health plan.

PCN20

THE BUDGETARY IMPACT OF PEMETREXED PLUS CISPLATIN AS FIRST-LINE THERAPY FOR ADVANCED NONSQUAMOUS NON-SMALL CELL LUNG CANCER (NSCLC)

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OBJECTIVES: Pemetrexed plus cisplatin (Cis/Pem) was recently approved in the US as initial treatment for advanced nonsquamous NSCLC. We developed a budget impact model to estimate the effect on a US health plan budget of adopting Cis/Pem for this new indication. **METHODS:** A deterministic Excel-based budget impact model was developed from the perspective of a one million member US health plan over a one-year time horizon. A survey of nine US thoracic oncologists was used to quantify the impact of introducing Cis/Pem as first-line therapy on the frequency of chemotherapy use and the choice of first- and second-line regimens. Results were calculated from SEER incidence rates and the anticipated changes in first- and second-line regimen utilization rates. The costs associated with each regimen were based on Medicare reimbursement rates and a claims database analysis. Model outputs included health plan total cost, cost per patient per year, and per member per month (PMPM) costs. **RESULTS:** Following the adoption of Cis/Pem, total cost per patient per year for advanced NSCLC is estimated to decrease by $702 from $67,539 to $66,837. Anticipating that the number of NSCLC patients receiving treatment over the course of one year would increase slightly, a net additional cost to the health plan of $35,512 is estimated. Overall a neutral PMPM cost ($0.00) is expected. Most sensitivity analyses produce PMPM costs between –$0.02 and $0.02. **CONCLUSIONS:** Introduction of Cis/Pem as first-line therapy is anticipated to reduce the use of less expensive doublet regimens including gemcitabine and paclitaxel; however, it is also anticipated to reduce the use of more expensive triplet regimens containing bevacizumab. When Cis/Pem is used as first-line therapy, alternative, and often less expensive, regimens are recommended for use as second-line therapy. Overall, the adoption of Cis/Pem as first-line therapy for advanced nonsquamous NSCLC is anticipated to be budget neutral.

PCN21

BUDGET IMPACT ANALYSIS OF NON – SMALL CELL LUNG CARCINOMA (NSCLC) TREATMENT WITH ERLOTINIB IN POLISH SETTING

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OBJECTIVES: to assess the financial consequences of the introduction of erlotinib as second/third line treatment of patients with IIIB/IV NSCLC in Poland. **METHODS:** Two scenarios were compared: "baseline scenario" where 96% patients received