compared with BEV + IFN and sunitinib. METHODS: A linear decision analytic model was developed to assess the management of 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 pricing lists, and additional 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 €1,266, €1,746 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.

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

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OBJECTIVES: The combination of BEV + interferon-alpha2a (IFN) prolongs progressionsurvival in metastatic renal carcinoma compared with IFN + placebo (Roscchi, Lancet 2007). BEV + IFN is comparably efficacious 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 pricing lists and country-specific cost data. RESULTS: The grade 3/4 AE management costs for sunitinib were higher than those for BEV + IFN in Germany (€1758 vs €1736), France (€2590 vs €1618), UK (€1475 vs €804) and Italy (€981 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 due to BEV 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.

ECOONMIC 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 angio-oedema 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 a IR admission 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 with a severe 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

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 lenograstim are granulocyte colony-stimulating factors (G-CSFs), 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 GGM-CSFs, incidence and treatment cost of relevant adverse events (e.g., bone pain), and G-CSF-GM-CSF drug acquisition and administration costs. Incidence and cost of infections- 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. This equates to an annual net effect of savings of $1.520 million in annual cost savings, or $0.161 PMPM. Most of the cost savings were attributed to CSF acquisition and administration costs ($1.81%), 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 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.