Kernel Density Estimation was used to examine the lung disease by Age, Length of Stay and Total Charges by patient conditions. Text Miner in Enterprise Miner was used to examine the data according to text strings of treatment procedures. Then we predict the occurrence of lung cancer according to patient age, gender, days of stay and total charge with the predictive modeling in Enterprise Miner. **RESULTS:** There were 4718 observations related to lung cancer. There are more inpatient events starting at age 40, accelerating at age 50 and 55, and decreasing at 65. Patients with lung cancer had a higher probability of a stay of five days, which indicates that there was a higher probability of higher cost. We defined clusters of procedures with a frequency showing the effectiveness of treatment for patients. The Decision Tree is optimal with a 22.9% misclassification rate in the testing set compared with other models in Enterprise Miner. **CONCLUSIONS:** Older patients are more likely to have lung cancers that would lead to a higher probability of longer stay and higher costs for the treatment procedure. With text analysis on the procedure codes and KDE, it shows that Levels IV and VI Surgical pathology, gross and microscopic examination are used for patients of higher risk with a higher cost compared to other procedures to diagnose lung cancer.

PCN7

CLINICAL AND ECONOMIC OUTCOMES IN CANCER CHEMOTHERAPY PATIENTS INITIATED ON ERYTHROPOIESIS STIMULATING AGENTS (ESA) AT HEMOGLOBIN (HB) LEVELS < 10 G/DL

Burton T[1], Larholt K[1], Apgar E[1], Pashos CL[1], McKenzie RS[2], Piech CT[2]

[1]Abt Bio-Pharma Solutions, Inc., Lexington, MA, USA, [2]Centocor Ortho Biotech Services, LLC, Horsham, PA, USA

OBJECTIVES: Recent changes to ESA prescribing information recommend initiation at Hb levels < 10 g/dL in cancer chemotherapy patients. Real world clinical and economic outcomes data associated with this initiation range for the two FDA-approved ESAs for this population [epoetin alfa (EPO) and darbepoetin alfa (DARB)] are sparse. **METHODS:** Data collected between December 2003 and September 2008 from 61 U.S. oncology clinics from the Dosing and Outcomes Study of Erythropoietic Stimulating Therapies (D.O.S.E.) registry were assessed. Patients were included if they were initiated on ESAs at baseline (BL) Hb < 10 g/dL, age > = 18 years, and received > = 2 doses of either EPO or DARB. Outcomes assessed included transfusion utilization, cumulative ESA doses, dose ratio (cumulative dose EPO: DARB) and ESA cost (based on cumulative ESA dose and December 2008 wholesale acquisition cost: EPO $13.77/1000 Units, DARB $4.818/mcg). **RESULTS:** A total of 545 patients (237 EPO, 308 DARB) were included. BL characteristics were similar between treatment groups with regard to age, weight, cancer type and Hb. The mean administered dose was 42,610 Units in the EPO group and 259 mcg in the DARB group with a treatment interval of 11.6 days and 19.4 days, respectively. Mean treatment duration was similar between groups (~65 days, P = 0.34). The proportion of patients transfused was similar between groups (~30%, P = 0.70). Mean cumulative administered dose was 318,918 Units for EPO and 1,261 mcg for DARB corresponding to a dose ratio of 253:1 (Units EPO: mcg DARB). ESA cost was significantly lower in the EPO group compared to the DARB group (EPO: $4392, DARB: $6075; P < 0.001). **CONCLUSIONS:** In cancer chemotherapy patients with Hb < 10 g/dL prior to ESA initiation, transfusion utilization was similar between groups. However, ESA costs were 28% lower in the EPO group than the DARB group. These ESA-associated outcomes and cost data are informative to stakeholders treating cancer chemotherapy patients.

PCN8

COMPARISON OF INFECTION-RELATED HOSPITALIZATION RISK AND ASSOCIATED COSTS AMONG PATIENTS RECEIVING SARGRAMOSTIM, FILGRASTIM, AND PEGFILGRASTIM FOR CHEMOTHERAPY-INDUCED NEUTROPENIA

Duh MS[1], Toy EL[2], Vekeman F[3], Laliberte F[3], Dority BL[2], Perlman D[2], Barghout V[4], Heaney ML[5]

[1]Analysis Group, Inc., Boston, MA, USA, [2]Analysis Group, Inc., Lakewood, CO, USA, [3]Groupe d'analyse, Ltee, Montréal, QC, Canada, [4]Bayer HealthCare Pharmaceuticals, Inc., Wayne, NJ, USA, [5]Memorial Sloan-Kettering Cancer Center, New York, NY, USA

OBJECTIVES: Myelosuppressive chemotherapy can lead to neutropenia and increase infection risk. Myeloid growth factors are commonly used to treat/prevent neutropenia. Sargramostim is a granulocyte-macrophage colony-stimulating factor (GM-CSF). Unlike filgrastim and pegfilgrastim, which are granulocyte colony-stimulating factors (G-CSFs), sargramostim activates a broader range of myeloid lineage-derived cells. Therefore, GM-CSF might reduce infection risk more than G-CSFs. This study compared real-world infection-related hospitalization rates and costs in patients using G/GM-CSF for chemotherapy-induced neutropenia. **METHODS:** This retrospective matched-cohort study analyzed nationally-representative health insurance claims in the US in 2000–2007. The sample population included patients who received chemotherapy and G/GM-CSF. G/GM-CSF treatment episodes began with the first administration of G/GM-CSF and ended when a subsequent administration was >28 days after a prior administration. Sargramostim patients were matched 1:1 with filgrastim and pegfilgrastim patients based on gender and birth year. Outcomes included infection-related hospitalization rates and the associated costs. Hospitalization rates were analyzed using univariate and multivariate Poisson methods; covariates included myelosuppressive agents received, tumor type, anemia, and comorbidities. **RESULTS:** A total of 990 sargramostim-filgrastim and 982 sargramostim-pegfilgrastim pairs were analyzed. Cohorts had similar baseline characteristics, though differences were observed in the fraction of patients with a neutropenia diagnosis (sargramostim 65%, filgrastim 57%, pegfilgrastim 45%) and who received myelosuppressive agents (sargramostim 54%, filgrastim 48%, pegfilgrastim 77%). Sargramostim patients experienced infection-related hospitalizations about half as often as filgrastim (p = 0.04) or pegfilgrastim (p = 0.06) patients. Multivariate analyses adjusted for confounding factors and found that sargramostim patients were 56% less likely to have infection-related hospitalizations compared to filgrastim and pegfilgrastim patients (p = 0.03 for both). Infection-related hospitalization costs for sargramostim patients were $728/patient/month and $226/patient/month less compared to filgrastim (p = 0.04) and pegfilgrastim patients (p = 0.01), respectively. **CONCLUSIONS:** Among patients with chemotherapy-induced neutropenia, sargramostim use is associated with reduced risk of infection-related hospitalization and lower associated costs compared to filgrastim or pegfilgrastim.

PCN9

SYSTEMATIC LITERATURE REVIEW TO ADDRESS BREAST CANCER ISSUES IN LOW-AND MIDDLE-INCOMES COUNTRIES FROM 1990–2008

Ekwueme DU[1], Coughlin SS[2], Miller J[1], Bobo J[3], Justen E[4]

[1]CDC, Atlanta, GA, USA, [2]Department of Veterans Affairs, Washington, DC, DC, USA, [3]Battelle, Centers for Public Health Research and Evaluation, Seattle, WA, USA, [4]CDC Foundation, Atlanta, GA, USA

OBJECTIVES: Breast cancer prevention and control in low-and middle-income countries (LMCs) are critical emerging issues. Most LMCs lack sufficient resources for screening, early detection, and treatment of breast cancer. However, little is known about what works to reduce the burden of breast cancer in low-resource settings or how best to maximize public health interventions. The purpose of this study was to assemble a knowledge base of studies in LMCs on breast cancer prevention, early detection, treatment, and palliative care that address issues of equity, access, and costs. **METHODS:** We conducted a systematic literature search via PUBMED and other computerized electronic databases. We classified each citation as relevant, peripherally relevant, not relevant, or unknown and maximized the criteria by using free-text words and medical subject headings. All citations identified were independently reviewed by three members of the research team. Relevant studies were selected if they met inclusion criteria: published in English or Spanish between January 1, 1990 and April 30, 2008. **RESULTS:** A total of 1907 citations were identified, of which, 53.2% were excluded as "not relevant;" 27.1% were considered likely to be "relevant"; 5.5% were coded "peripherally relevant"; and 6.0% were "unknown". All relevant articles (516) coming from 60 LMCs met the inclusion criteria and were abstracted. We found 80 articles on East Asia/Pacific countries; 82 on Europe/Central Asia countries; 76 on Latin American/Caribbean countries; 64 on Middle East/North Africa countries; 100 on South Asia countries; 71 on Sub-Saharan Africa countries; and 43 articles with no region-specific focus. We identified three articles on palliation and end-of-life care and a small number of articles reported cost data or economic analyses. **CONCLUSIONS:** The review contains a wealth of practical information that would be extremely useful to the myriad of clinicians and public health professionals working to prevent and treat breast cancer in LMCs.

PCN10

LUNG CANCER IN THE CHINESE PASSIVE SMOKING POPULATIONS

Wang L[1], Li Y[2]

[1]Sichuan University, Chengdu, Sichuan, China, [2]West China Hospital, Sichuan University, Chengdu, China

OBJECTIVES: Worldwide, the association of passive smoking with development of lung cancer has been ascertained. However, it remains unknown of the magnitude of the association in the Chinese population. We thus systematically reviewed the published studies worldwide. **METHODS:** We searched Medline, EMBASE, and three other Chinese databases from their inception to June 30, 2008. We included case-control and cohort studies that investigated the association of passive smoking with lung cancer, and that provided data on the magnitude of the association. Two reviewers screened the eligibility, assessed the extent of the bias, and extracted data independently. We obtained the unadjusted and adjusted estimates of studies. We pooled the trial data using the random-effect model and explored the heterogeneity by the pre-specified variables. **RESULTS:** We included 20 studies (n = 88,379). One was cohort study (n = 72,829) and 19 case-control studies (cumulative cases: 5977, and controls: 9573). Passive smoking increase the risk of lung cancer by 25% (OR = 1.25, 95%CI = 1.03 to 1.47). Pooling of adjusted estimates of 10 case-control studies (2704 cases and 3495 controls) showed that the risk of lung cancer increased by 95% (1.95, 1.49 to 2.55). In female life-long non-smokers, the passive smoking increased the risk of lung cancer by 77% (1.77, 1.22 to 2.58, n = 5685), and increased the risk of squamous cell carcinoma and adenocarcinoma of female non-smokers by 99% (1.99, 1.19 to 3.33) and 7% (1.05, 0.45 to 2.51). Because of the limited data, no significant dose-response relationship was found between the risk of lung cancer and the exposure amounts, durations and the initiating age. **CONCLUSIONS:** The increased risk of lung cancer associated with passive smoking in the Chinese population has been ascertained. Passive smoking has a strong association with squamous cell carcinoma.

PCN11

LUNG CANCER IN THE CHINESE SMOKING POPULATION

Wang L[1], Li Y[2]

[1]Sichuan University, Chengdu, Sichuan, China, [2]West China Hospital, Sichuan University, Chengdu, China

OBJECTIVES: Worldwide, the association of smoking with development of lung cancer has been ascertained. However, it remains unknown of the magnitude of the association in the Chinese population. We thus systematically reviewed the published