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at start of treatment. Patient education and precise individual dose titration combined with once-daily dosing regimens may improve persistence with ICS.

RS3

THE COST-EFFECTIVENESS OF TIOTROPIUM VERSUS IPRATROPIUM IN A US VETERANS POPULATION DIAGNOSED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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OBJECTIVE: This study models the cost-effectiveness of tiotropium versus ipratropium in a veterans population while incorporating information on medication compliance, disease severity, and history of health care utilization. **METHODS:** Electronic medical records from the Veterans Affairs (VA) Maryland Health Care System for 2004 were analyzed. Inclusion criteria: 1) filled prescription for ipratropium in 2004; 2) pulmonary function test (PFT) results; 3) PFT-based evidence of chronic obstructive pulmonary disease (COPD). Hospitalizations and emergency room (ER) visits for COPD exacerbations, COPD severity, and medication adherence were identified via chart review. The relative effectiveness of tiotropium was based on published clinical trial results. The incremental cost-effectiveness ratio (ICER) was calculated for 702 actual ipratropium patients and 702 modeled tiotropium patients for two effects: avoided exacerbations (ICERex) and avoided hospitalizations (ICERhos). Sensitivity analysis was also conducted. **RESULTS:** The ipratropium sample characteristics were: mean age of 69 years; 98 percent male; 21 percent Black; and 40 percent smokers. The distribution by severity was: mild (7%), moderate (42%), severe (40%) and very severe (11%). The total (exacerbation-related) ER visits and hospitalizations were 879 (171) and 462 (75), reflecting the exclusion of 40 ER and 9 hospital encounters following missed medications. The overall ICERex and ICERhos were $1318.38 and $4284.75. Tiotropium was dominant in very severe patients: ICERex of –$2099.00 and ICERhos of –$6297.00. Tiotropium was dominant (–$4215.46) for patients with one hospitalization and ranged from $433.29 to $117.27 for patients with one to three ER visits. The results were most sensitive to variation in tiotropium compliance, the cost of ipratropium, and the relative efficacy of tiotropium. **CONCLUSIONS:** Assuming VA efficacy similar to published estimates, tiotropium is more cost-effective in patients with more severe disease or a history of ER visits and is dominant when considering patients with very severe COPD or with a previous hospitalization.

RS4

CLINICALLY IMPORTANT FACTORS CONTRIBUTING TO COSTS OF CARE DEFINED VIA ANALYSIS OF COMPREHSIVE PATIENT RECORDS

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OBJECTIVES: To evaluate the use and costs of all health care provider services among 1000 patients with chronic asthma during a five year period. **METHODS:** Patients who had visited the Pulmonary Clinics of Helsinki University Hospital during the yrs 2000–2004 were invited to the study. The participants' consent was obtained and a comprehensive medical history collected from all health care providers who had treated the participant during the last 5 years. Data included all physician recorded symptoms, signs, adverse drug effects, complications, diagnostic test results, given treatments, and procedures as unstructured text. Using advanced linguistic analysis methods, we identified for each event both cost related attributes (location, personnel, type of contact, urgency) and clinical attributes (age, gender, BMI, smoking, lung functions, co-morbidities, and prescribed medication) potentially explaining the differences across their clinical outcomes. We developed a medication independent score for the stability of asthma based on physician recorded observations. Membership [0.1] of an asthma related contact was defined as a probability-like function P. **RESULTS:** Our regression model is based on 65,698 health care contacts explaining a significant proportion (43%) of all direct non-pharmacological costs of the patients. Fifty-six percent of the contacts were asthma related. An asthma related event occurred on average 6 times per year with an average cost of €256 (based on average costs in Finland). Unexpectedly the use of prescription antihistamines resulted less frequent patient interaction with the health care system and potentially in better asthma control. Smoking, adverse drug events, co-morbidities, existing allergy symptoms increased asthma related expenditures significantly. Use of antihistamines, normal FVC in spirometry, and male gender decreased the costs. **CONCLUSIONS:** This empirical model of health care utilization can be used to explain differences in health care utilization among patients with different co-morbidities and different treatment protocols.

PODIUM SESSION IV: CANCER

CN1

TREATMENTS FOR METASTATIC MELANOMA: SYNTHESIS OF EVIDENCE FROM RANDOMIZED TRIALS

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OBJECTIVES: Advanced melanoma is usually fatal, with few effective treatments. Dacarbazine (DTIC) is considered standard therapy, but newer drugs have recently been marketed. The study objective was to quantify success rates (Complete + Partial response) of DTIC alone versus all other comparators in treating Stage-III (non-resectable) and Stage-IV melanoma of cutaneous origin. **METHODS:** We retrieved all head-to-head randomized controlled trials involving dacarbazine (DTIC) and other active drugs or multiple-drug combinations. Two reviewers searched the literature, and compared results, with differences resolved through consensus. Success rates were combined using random effects meta-analysis. Heterogeneity was tested using chi-square and publication bias using funnel plots and the Begg-Mazumdar test. Quality was assessed using Jadad's method. **RESULTS:** We found 23 studies (3356 patients, 1966 DTIC, 1390 other treatments, average age = 52.8 ± 4.3) with DTIC as standard treatment. Studies were generally of poor quality; 2 scored "high" quality and 21 scored "low" quality. Heterogeneity was non-significant (chi-square = 24.63, P = 0.32), suggesting combinability. Funnel plots were not abnormal and the Begg-Mazumdar test was non-significant (tau = –0.13, P = 0.38), indicating no publication bias. DTIC success rate was 14.9%. All other treatments combined were somewhat superior to DTIC alone (OR = 1.31, CI95%:1.06–1.61). Average survival time was 7.5 ± 2.0 months for DTIC and 8.7 ± 3.6 months for all others. Adjunct therapy [DTIC+additional drug(s)] was supe-