reviewers independently selected trials, assessed their quality and extracted data. Meta-analysis of head-to-head trials was performed. RESULTS: Seven RCTs comparing CIC vs. BUD were identified and included in the analysis. Comparisons of both interventions in 1:1 and 1:2 dose ratios were assessed in 3 and 4 trials, respectively. CIC as compared with BUD in 1:1 dose ratio was associated with significant improvement in forced vital capacity (FVC) and peak expiratory flow (PEF) by spirometry (WMD = 0.09 [0.03; 0.14] and WMD = 19.00 [2.37; 35.63], respectively) as well as reduction in proportion of symptom-free days (p = 0.018). No statistically significant differences between CIC and BUD in 1:2 dose ratio were observed. CIC and BUD in either dose showed comparable efficacy with respect to the risk of asthma exacerbation, improvement in symptoms of asthma and forced expiratory volume in 1 second (FEV1). CIC-treated patients experienced less upper respiratory tract infections than those treated with BUD. However, the difference was on the border of statistical significance (RR = 0.63 [0.43; 0.99], NNT not significant). There were no statistically significant differences between CIC and BUD in either dose ratio with respect to risk of adverse events, adverse events related to study medication, pharyngitis and dysphonia. CONCLUSIONS: Ciclesonide provides an improvement in spirometric parameters and reduction of asthma symptom-free days as compared to budesonide in 1:1 dose ratio, while no differences were noticed between CIC and BUD in 1:2 dose ratio. Safety profile of ciclesonide seems to be comparable with budesonide.

QUALITY OF LIFE AND ECONOMIC IMPACT OF ASTHMA CONTROL IN FRANCE AND SPAIN. FIRST RESULTS OF THE EU-COAST STUDY

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OBJECTIVES: Current asthma management recommendations are based on the level of asthma control rather than disease severity. The financial impact associated with asthma control needs to be determined. The primary objective of this study was to estimate quality of life and health care costs according to the patients' level of asthma control in France and in Spain. METHODS: An observational retrospective bottom-up cost of illness study was conducted in adults patients with asthma. Investigators were general practitioners. Asthma control was evaluated using the validated auto-test Asthma Control Test (ACTTM) for a one month period and 2009 GINA's asthma control criteria for a three months period. Quality of life (Qol) was assessed using EQ-5D profile. Costs (direct and indirect) were evaluated from a societal perspective. RESULTS: 794 patients (France: 391; Spain: 403) were enrolled in the first study wave of the survey. Based on the ACT, asthma was determined to be well-controlled (ACT ≥ 20) in 48.1% [IC 95%: 42.1%–54%] and 56.2% [IC95: 51.1%–61.2%] of French and Spanish patients respectively. In both countries, EQ-5D scores were 0.9 and 0.7 in well-controlled and not well-controlled patients respectively (p = 0.0001). Total costs of asthma were directly related to asthma control in both countries. The average cost (Euros/month/patient) of well-controlled asthma was €28 (±13) in France and €77 (±113) in Spain compared with €140 (±782) (p = 0.0009) and €232 (±380) (p = 0.0001) respectively for not well-controlled asthma. Similar associations were observed using the latest GINA's criteria. CONCLUSIONS: We found strong associations between asthma control level, costs and Qol. in patients with asthma. Achievement of good clinical control of asthma may result in a significant decrease of the economic burden of asthma and a better health status in adults.

TRENDS IN ANTI-ASTHMA MEDICATION USE IN DUTCH CHILDREN FROM 1998 UNTIL 2007

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OBJECTIVES: The prevalence of asthma has been reported to be increasing for decades, but recent studies suggest a leveling off or even decrease in prevalence among children. The objective of this study was to assess the trends in anti-asthma medication use in Dutch children from 1998 until 2007. METHODS: From the PHARMO Record Linkage System, an administrative database network of outpatient pharmacies, hospitals, and other settings, including data of ~4 million individuals in defined areas of The Netherlands, we assessed 1) the proportion of children aged 0–19 years with anti-asthma medication use in Dutch children from 1998 until 2007. RESULTS: Overall prevalence of anti-asthma medication use was approximately 7% and remained stable between 1998 and 2007. Prevalence was highest among children aged 0–1 years and declined with increasing age. Over time, however, a change in type of medication was observed.

ECONOMIC IMPACT OF NON-ADHERENCE TO GOLD GUIDELINES IN COPD PATIENTS IN PRIMARY CARE IN SPAIN

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OBJECTIVES: The aim of this study is to analyze the economic impact of non-adherence to GOLD guidelines in COPD patients. METHODS: A retrospective analysis was carried out on a claim database. Patients ≥80 years-old with diagnosis of COPD confirmed with spirometry (FEV1/FVC < 0.7) were eligible for this analysis. Patients were classified into two groups according to whether they fulfill with therapeutics recommendations by severity defined in GOLD guidelines (GOLD group) or those who don't fulfill (NO-GOLD group). Demographics, medical and use of resources data were collected and direct and indirect costs were analyzed. a probabilistic mul-
tivariate sensitivity analysis of avoided costs was carried out. All results are presented annualized and costs expressed in €2009. RESULTS: A total of 1365 patients were included, 79.5% males, mean (±SD) age was 71.4 (±10.3), mean FEV1 was 65.34% and a COPD history of 3.5 (±2.9) years. Patients were divided into GOLD group and NO-GOLD group as stage B (FEV1 < 80% and ≥50%) and stage III (FEV1 < 50% and ≥30%) for both groups. Total annual costs per patient were analyzed. Direct costs analyzed were treatment, medical visits, emergency visits, hospital stay, laboratory, spectrometry, radiology and oxygenotherapy. Indirect cost evaluated was sick leave. Avoided costs between both groups will be analyzed, and confirmed with sensitivity analysis. CONCLUSIONS: The results of this study will provide whether the adherence to the recommendations of the GOLD guidelines in COPD patients can lead to significant savings to the Spanish health care system.

PRS14 THE POTENTIAL COST IMPACT OF USING A PEG HYDROGEL SEALANT TO PREVENT AIR LEAKS AFTER LUNG RESECTION SURGERY IN SPAIN
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OBJECTIVES: Persistent air leaks after lung resection surgery often lead to increased complications including longer length of hospital stay and resulting treatment costs. A PEG hydrogel sealant (PleuraSeal™) is used as an adjunct to standard closure of pleural air leaks during lung resection surgery and has demonstrated shorter hospitalizations (1.7 fewer days; Wain JC et al, 2008, Conference Abstract) and more rapid removal of chest tubes in a clinical study (Covidien, data on file) when compared with standard closure (e.g. staples and sutures alone). Our study was designed to estimate the potential cost offsets for using PleuraSeal™ compared with standard closure in 100 hypothetical patients from a Spanish hospital who had an air leak after lung resection surgery using the cost offset from shorter hospital stays balanced against the cost for PleuraSeal™. METHODS: We assumed the cost for PleuraSeal™ in Spain to be €153 per treatment applied to all 100 hypothetical patients compared with no added cost for standard closure. We then balanced the added cost for PleuraSeal™ with the reduction in number of hospital days and subsequent costs ($590/day [Varella et al, 2006] $1.7 fewer days per patient) compared with standard closure and calculated the potential cost offset for PleuraSeal™. RESULTS: A Spanish hospital that performs 100 lung resections with air leaks can expect to save $58,300, or approximately €583 per patient when compared to standard closure as patients who had air leaks stayed in hospital an average of 1.7 days longer than those without air leaks. CONCLUSIONS: The cost for PleuraSeal™ is completely offset by the shorter length of hospital stay compared with standard closure inspain. PleuraSeal™ is a compelling option for Spanish hospitals that perform lung resection surgeries as the cost of the treatment is completely offset by the reduction in air leaks and subsequent shorter hospital stay.

PRS15 THE POTENTIAL COST IMPACT OF USING A PEG HYDROGEL SEALANT TO PREVENT AIR LEAKS AFTER LUNG RESECTION SURGERY IN ITALY
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OBJECTIVES: Persistent air leaks after lung resection surgery often lead to increased complications. A PEG hydrogel sealant (PleuraSeal™) is used as an adjunct to standard closure of pleural air leaks and has demonstrated shorter hospitalizations (1.7 days; Wain JC et al, 2008, Conference Abstract) when compared with standard closure (e.g. staples and sutures alone). Our study was designed to estimate the potential cost offsets for using PleuraSeal™ in 100 hypothetical patients with an air leak using the cost offset from shorter hospital stays balanced against the cost for PleuraSeal™. METHODS: We assumed the cost for PleuraSeal™ in Italy to be €420 per treatment applied to all 100 hypothetical patients compared with no added cost for standard closure. We then balanced the cost for PleuraSeal™ with the reduction in number of hospital days and subsequent costs ($337/day thoracic ward day, a Brunelli et al, 2007) calculated the potential cost offset for PleuraSeal™. RESULTS: A Spanish hospital that performs 100 lung resections with air leaks can expect to save €58,300, or approximately €583 per patient when compared to standard closure as patients who had air leaks stayed in hospital an average of 1.7 days longer than those without air leaks. CONCLUSIONS: The cost for PleuraSeal™ is completely offset by the shorter length of hospital stay compared with standard closure in Spain. PleuraSeal™ is a compelling option for Italian hospitals that perform lung resection surgeries as the cost of the treatment is completely offset by the reduction in air leaks and subsequent shorter hospital stay.

PRS16 PITFALLS IN THERAPEUTIC REFERENCE PRICING PRACTICE OF ITALY
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OBJECTIVES: Therapeutic reference pricing (TRP) is one of the most frequently employed methods for cost-containment of pharmaceuticals. The Hungarian National Health Insurance Fund (NHIF) applies TRP based on DDD, yet even the WHO objects to using DDD in pricing and reimbursement decisions. Our objective was to compare actual drug use to DDD and to evaluate whether TRP based on DDD could result in savings in the costs of maintenance medication and the total direct health expenditures between asthma patients treated with Symbicort Turbohaler (SYT) and Seretide Diskus (SED). METHODS: Real world data for the analysis was derived from the NHIF database. Actual drug use and average costs were compared in four groups (high dose SYT, medium dose SYT and medium dose SED and very low dose SED). Multiple linear regression was employed to adjust data for the differences in gender and age distribution of patients. RESULTS: A total of 12,260 patients using SED and 15,539 patients using SYT for asthma were involved into the analysis. Average drug use was lower in both SED groups than DDD. Patients used 1.38–1.95 inhalations in both SED groups, 1.28–1.97 inhalations in the high dose SYT group, and 1.74–2.49 inhalations in the medium dose SYT group. Although the daily therapeutic cost of medium dose SED based on SYT would be much lower than the cost of SYT, no difference was found in the actual cost of the maintenance therapy or the total medical costs. CONCLUSIONS: Our analysis provides evidence about the limitation of employing daily therapy costs according to DDD for TRP. No relationship was found between the daily therapeutic costs calculated using the NHIF methodology and costs of real drug use, in real world TRP did not lead to the reduction of expenditures from the payer perspective. Potential confounding factors may limit the generalizability of conclusions.

PRS17 COST OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE: A HEALTH CARE ADMINISTRATIVE DATABASES ANALYSIS
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OBJECTIVES: Chronic Obstructive Pulmonary Disease (COPD) currently represents the fifth leading cause of death worldwide and it's estimated to rise to the third cause by 2030. The burden of COPD has been characterized in a wide database. Actual drug use and average costs were compared in four groups (high dose SYT, medium dose SYT and medium dose SED and very low dose SED). Multiple linear regression was employed to adjust data for the differences in gender and age distribution of patients. RESULTS: A total of 12,260 patients using SED and 15,539 patients using SYT for asthma were involved into the analysis. Average drug use was lower in both SED groups than DDD. Patients used 1.38–1.95 inhalations in both SED groups, 1.28–1.97 inhalations in the high dose SYT group, and 1.74–2.49 inhalations in the medium dose SYT group. Although the daily therapeutic cost of medium dose SED based on SYT would be much lower than the cost of SYT, no difference was found in the actual cost of the maintenance therapy or the total medical costs. CONCLUSIONS: Our analysis provides evidence about the limitation of employing daily therapy costs according to DDD for TRP. No relationship was found between the daily therapeutic costs calculated using the NHIF methodology and costs of real drug use, in real world TRP did not lead to the reduction of expenditures from the payer perspective. Potential confounding factors may limit the generalizability of conclusions.

PRS18 HEALTH CARE COSTS OF INDIVIDUALS WITH AND WITHOUT COPD IN SWEDEN
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OBJECTIVES: This analysis estimates the health care costs (hospitalizations and outpatient visits) due to respiratory and co-morbid diseases in a cohort of subjects with and without COPD in Sweden. METHODS: A cohort of individuals was identified in earlier clinical examinations of the general population within the Obstructive Lung Disease in Northern Sweden (OLIN) Studies. The cohort consisted initially of 993 subjects fulfilling criteria (GOLD criteria for COPD and an age and gender matched control group of same size without obstructive lung function impairment). Data were extracted from Healthcare Administrative Databases (HADs) of the region of Lombardy, which covers a population of 9.2 million members. HADs related to eligibility criteria, hospital admissions, pharmaceutical and outpatient claims have been organized in a data warehouse using probabilistic record linkage. The study included subjects aged more than 18 years that in 2003 had at least one hospitalization with respiratory as the second diagnosis. The main part was performed via cardiovascular, respiratory or heart failure, pneumothorax and acute pulmonary heart disease. Subjects were followed for two years collecting information on health care resource and vital status. Severe and moderate exacerbations of COPD were respectively defined as hospitalizations for COPD and as prescriptions of corticosteroids and/or antibiotics after the index hospitalization. RESULTS: We selected 16,476 subjects with age mean 76 years and an average follow-up of 19 months. The 38% of patients were women with mean age three years higher than men. Subjects with severe exacerbations had on average 4.4 moderate and 1.9 severe episodes after the index hospitalization. The mean annual cost for these patients was €11,824 (IC95% 11,554–12,079). Patients with only moderate exacerbations had on average 3.9 moderate exacerbations and the mean annual cost was €6,413 (IC95% 6288–6345). Costs were routine in time. CONCLUSIONS: The burden of COPD is important both in frequency and cost; it requires an effort in programming new health services particularly devoted to aging population.