IMPACT OF ROFLUMILAST ON HEALTH CARE RESOURCE UTILIZATION AND COSTS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN REAL-WORLD SETTINGS

Corman S1, Wan Y2, Sun X3, Gao X3
1Pharmaceutical North America LLC, Bethesda, MD, USA; 2Pharminter International, Bethesda, MD, USA; 3Forest Laboratories, Inc., Jersey City, NJ, USA

OBJECTIVES: To compare real-world health care resource utilization (HCRU) and health care costs among patients initiated roflumilast compared to patients initiated other chronic obstructive pulmonary disease (COPD) medications. METHODS: A retrospective database analysis was performed using LifelineTM Health Plan Claims Database. We included patients with a diagnosis of COPD who initiated roflumilast (roflumilast group) or any other ≥3 COPD maintenance drugs (non-roflumilast group) between May 1, 2011 and December 31, 2012. Patients must have been enrolled for 12 months prior to (baseline period) and 3 months after (follow-up period) the initiation date, been enrolled for 12 months prior to (baseline period) and 3 months after (follow-up period) the initiation date, and were without asthma diagnosis at baseline. Office and emergency department (ED) visits, hospitalizations, and total health care costs were compared between study groups using nonparametric Wilcoxon rank-sum test. Results: Difference-in-difference (DID) models were used to compare the change from baseline in hospitalizations and costs between groups while adjusting for baseline differences. RESULTS: During the baseline period, patients in the roflumilast group (N=710) had significantly more office visits, ED visits, hospitalizations, and greater total costs than patients in the non-roflumilast group (N=13,501). The changes from baseline were: monthly frequency of office visits (0.081 in roflumilast vs 0.122 in non-roflumilast group; p=0.01), ED visits (0.009 vs 0.007; p=0.80), hospital admissions (0.002 vs 0.005; p=0.52), and monthly costs ($32.02 vs $32.22; p=0.38). After controlling for key covariates using DID models, roflumilast was associated with numerically lower hospital admissions (β=−0.003; p=0.57) and total costs (β=−116; p=0.62). CONCLUSIONS: Smaller increase in office visits and hospitalizations and total costs during follow-up from baseline was observed in roflumilast vs non-roflumilast group. A longer follow-up period may be needed to assess potential improvement in these economic outcomes.

DIRECT COST INVOLVED IN THE TREATMENT OF MOST COMMONLY OCCURRING ILLNESS IN CHILDREN AT A PEDIATRIC OUTPATIENT CLINIC IN NORTH INDIA

Ahlawat R1, Tiwari P2, Gupta G2
1National Institute of Pharmaceutical Education and Research (NIPER), S.A.S Nagar, India, 2Medical College, Malwa, India

OBJECTIVES: The cost of medicine is an important factor in any disease treatment. Strengthening health systems to provide such interventions at affordable cost to all children will save many lives. The present study was carried out to determine the total number of prescriptions and direct medical costs involved in the treatment of common illness in children. METHODS: The study was carried out prospectively at a pediatric outpatient clinic over a period of 1 year in children (≤18 years of age). The data in the prescriptions of patients were captured at the time of consultation. The cost of treatment were calculated for three most commonly occurring diseases: upper respiratory tract infection (URT), acute gastroenteritis (AGE) and reactive airways disease (RAD). RESULTS: A total of 2902 patients were included in the study. URT (1078 patients) were found to be the most commonly occurring disease in children followed by AGE and RAD (468 and 332 patients, respectively). The average number of drug utilized for the treatment of RAD, AGE and URT were found to be 3.25, 3.64 and 3.43, respectively. Moreover, in the cost used for RAD was found to be INR1619, followed by INR1843 and INR1120s for AGE and URT, respectively (US $=approx INR62). Fifty seven percent of the drugs in AGE were from the National list of essential drugs, whereas all the drugs prescribed from NLEM in RAD and URT were (49% and 38%, respectively). In URT maximum cost were spent on the use of cough and cold combinations (42%, of total cost spent on all drugs). While in RAD and AGE maximum cost were spent on the use of steroids and Probiotics (33% and 43%, respectively). CONCLUSIONS: URT were found to be the most commonly occurring illness in children. RAD treatment was found to be the most costly treatment among all. These findings help in building evidence regarding the cost of treatment for different childhood illness.

COST-EFFECTIVENESS ANALYSIS OF GLYCOPIRRONIUM VERSUS TIOTRIPYRON AND FIXED Dose COMBINATIONS (FROTMILAST/BUDENOSIDE and FLUTICASONE) FOR COPD IN THE COLOMBIAN HEALTH CARE SYSTEM

Giraldo LF1, Karnp Benavides E2, Kraemer M2, Thresson PS3
1Universidad de La Sabana, Colombia, 2Novartis Colombia, Bogota, Colombia, 3Novartis AG, Basel, Switzerland

OBJECTIVES: To evaluate the cost-effectiveness of Glycopyrronium (once daily) compared to tiotropium bromide and fixed dose combinations of Formoterol/budesonide and Salmeterol/Fluticasone for the treatment of COPD from the Colombian Health Care System perspective. METHODS: A Markov model was designed considering health’s state and time horizon. The COPD classification for COPD into mild, moderate, severe, and very severe. The absorbing state was death. The first four stages include the possibility of presenting or not a severe exacerbation. Efficacy, based on the initial improvement of the percentage of patients in severe exacerbation of COPD throat ratio. Case of LYGh and 90% with LYGse efficacy measure vs. salmeterol/fluticasone under threshold ratio. CONCLUSIONS: The use of budesonide/formoterol as maintenance and reliever therapy is a cost-effective treatment in the Mexican Health system compared to salmeterol/Fluticasone plus salbutamol reducing the time without a severe exacerbation and time in hospitalization.

ECONOMIC EVALUATION OF BUDENOSIDE/FORMOTEROLE AS MAINTENANCE AND RELIEVER THERAPY IN PATIENTS WITH MODERATE OR SEVERE PERSISTENT ASTHMA

Polanco AC1, Salazar A2, Cargio E3, Soto H4, Medina P2
1Instituto Nacional de Salud, Bogota, Colombia, 2Hospital Infantil de Mexico Federico Gomez, Mexico City, Mexico

BACKGROUND: Asthma is a global health problem and currently it is estimated that 300 million people are affected. The aim of asthma treatment is to achieve and maintain the best asthma control. Complete control is defined as asthma control in all areas of care. A probabilistic sensitivity analysis was performed to determine the robustness of the model. Two measures of effectiveness were used: Life Years Gained without hospitalization (LYG) and Life Years Gained without severe exacerbation (LYGse). RESULTS: Glycopirronium (Glycopi) was free from hospitalization (49.92 vs. 48.88 weeks) with an ICER (Incremental Cost-Effectiveness Ratio) of $7,541.51 and the free-time of severe exacerbations (41.08 ± 2.65 weeks) with an ICER of $1,331.86. Glycopirronium (Glycopi) was more effective than tiotropium (Tio) at 90% with LYGse efficacy measure vs. salmeterol/fluticasone under threshold ratio. CONCLUSIONS: The use of budesonide/formoterol as maintenance and reliever therapy is a cost-effective treatment in the Mexican Health system compared to salmeterol/Fluticasone plus salbutamol reducing the time without a severe exacerbation and time in hospitalization.

EVALUATION ANALYSIS COMPARING TIOTRIPYRON WITH Salmeterol or Indacaterol IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN Taiwan

Chou CW, Lee CC, Lin CC, Liu SF, Chen CC
1Shou University, Kaohsiung, Taiwan

OBJECTIVE: This study presents a cost effectiveness of tiotropium compared to salmeterol or indacaterol for patients with chronic obstructive pulmonary disease (COPD) in Taiwan. METHODS: A medical reimbursement claims databases from Taiwan’s National Health Insurance were used. National Health Insurance enroll- ees who had an index event of at least one prescription claim (index medication) for either tiotropium, salmeterol or indacaterol during the study period (January 1, 2002–December 31, 2006) and met all eligibility criteria were classified into one of three cohorts according to their medication use. Utilization and cost data of the 1-year post-index period was extracted from these 3 cohorts and used as a cost parameter. A published COPD probabilistic Markov model was adapted to compare the cost-effectiveness of tiotropium vs. salmeterol or indacaterol. RESULTS: The study population included 3464 patients (n=1559 tiotropium cohort, n=169 salmeterol, n=1918 indacaterol). The estimated mean annual cost per patient on tiotropium was NT$49851, on salmeterol was NT$45039, and on indacaterol was NT$36645. Tiotropium was associated with lower medical and non-medical costs across all translated into being cost-effective. The probabilistic sensitivity analysis presented Glycopirronium as a dominant alternative compared to tiotropium and formoterol/ budesonide in more than 90% of the cases and against salmeterol/fluticasone the results were not conclusive. CONCLUSIONS: Tiotropium is cost-effective when compared to other long-acting bronchodilators in the Colombian Health Care System.
represent a cost-effective alternative to salmeterol and Ipratropium if daily cost for tiotropium can be reduced to a reasonable level in Taiwan’s National Health Insurance.

PRS40 AMINO ACID FORMULA AS A FIRST-LINE DIAGNOSIS TOOL IN INFANTS WITH CDG OR CDG-ALOS: A COST-EFFECTIVENESS ANALYSIS UNDER THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM PERSPECTIVE

Casteiro APBM1, Morais MRD2, Cardoso AL2, Vieira MC2, Spolidoro JFV3, Nishikawa AM4, Alves MC2

1Universidade de Sao Paulo, Brazil, 2Hospital Pediatrico Principe, Brazil, 3Pontificia Universidade Catolica do Rio Grande do Sul, Brazil, 4Evidencias, Campinas, Brazil

OBJECTIVES: Cow’s milk allergy (CMA) is the main cause of food allergy in infants, resulting in life-threatening events such as anaphylaxis, impairment in growth and quality of life. CMA symptoms are also related to other diseases, making the differential diagnosis crucial for an earlier effective treatment, avoiding waste of resources. Rice, soy, and peanut (AAR) is an alternative in treatment, but it can also be used as a diagnostic tool for children with CMA suspicion, shortening the time for diagnosis, which may reduce resources use. Our goal is to estimate the cost-effectiveness of an alternative practice (AP) using AAR as a diagnostic tool for CMA and evaluate their incremental cost-effectiveness ratio (ICER).

METHODS: Four hundred and eighty-six children (2317 school children in Finland indicated that 199 children (8.6%) are on avoidance treatment) were identified from the Brazilian Health Care System database. As children were already under treatment, it was assumed that all diagnoses were resolved. Model inputs were based on literature review and opinions of allergists/pediatricians. Exchange rate was 1.00USD = 2.30BRL. Only direct costs were considered, such as formula, tests, allergy treatment, medical visits and hospital admissions. Results were shown as incremental costs/resources per case avoided. Deterministic and probabilistic sensitivity analyses were performed.

RESULTS: The CP presented rates of 25% and 9.3% of diseases other than CMA after 8 and 12 weeks, respectively versus 34% in 2 weeks for AP. With this difference an effective treatment could be established in a shorter time, diminishing the waste of resources. The final analysis showed that the AP using AAR for diagnosis is dominant, with a cost saving of BRL 1.45 per case avoided (non-symptomatic children 1870-8760 non-symptomatic days). CONCLUSIONS: AP enabled an earlier CMA diagnosis, avoiding waste of resources, allowing the establishment of prompt treatment effects and leading to higher compliance with clinicians’ recommendations.

PRS44 COST-EFFECTIVENESS ANALYSIS OF NURSE-ADMINISTERED ORAL CORRECTIVE FORMULA IN refuge ATRIAL TACHYCARDIA IN PATIENTS WITH CHRONIC HARTITIS

Lancen M1, Caile D2, Barrowman N3, Zemek R4

1University of Ottawa, Ottawa, ON, Canada, 2Children’s Hospital of Eastern Ontario Research Institute, Ottawa, ON, Canada, 3Children’s Hospital of Eastern Ontario, Ottawa, ON, Canada

OBJECTIVES: Deferral of diagnosis and treatment for oral corticosteroids in the management of acute pediatric asthma exacerbations, delays in administration are still common. This often leads to an increase in inpatient admissions and more hospital admissions. Results were shown as incremental costs/relapses avoided. Amino acid formula (AAF) is an alternative in treatment of CMA patients, being resolved. Model inputs were based on literature review and opinions of allergists/pediatricians. Exchange rate was 1.00USD = 2.30BRL. Only direct costs were considered, such as formula, tests, allergy treatment, medical visits and hospital admissions. Results were shown as incremental costs/resources per case avoided. Deterministic and probabilistic sensitivity analyses were performed.

RESULTS: The CP presented rates of 25% and 9.3% of diseases other than CMA after 8 and 12 weeks, respectively versus 34% in 2 weeks for AP. With this difference an effective treatment could be established in a shorter time, diminishing the waste of resources. The final analysis showed that the AP using AAR for diagnosis is dominant, with a cost saving of BRL 1.45 per case avoided (non-symptomatic children 1870-8760 non-symptomatic days). CONCLUSIONS: AP enabled an earlier CMA diagnosis, avoiding waste of resources, allowing the establishment of prompt treatment effects and leading to higher compliance with clinicians’ recommendations.

PRS43 COST-EFFECTIVENESS ANALYSIS OF VARENICLINE USE FOR SMOKING CESSATION IN THE CITY OF SAO PAULO FROM THE PUBLIC HEALTH SYSTEM PERSPECTIVE

Portela LD1, Issa JS1, Santos VG1, Santos PFCD1, Pereira ADC2, Cipriano SL1, Ferreze CN2, Manfrin DF2

1Heart Institute (InCor), University of Sao Paulo Medical School, Sao Paulo, Brazil, 2Pfizer, Inc., Sao Paulo, Brazil

OBJECTIVES: Drugs for smoking cessation are considered of great importance to the prevention of this epidemic, as smoking is the largest preventable cause of death worldwide. This study aimed to evaluate the cost-effectiveness of varenicline compared with bupropion and NRT (‘gum and patches’ in the treatment of smoking population from Sao Paulo, Brazil’s city. METHODS: Effectiveness data of 6-months of treatment were obtained from 1044 patients (504 in the current smoking case of Instituto do Coração São Paulo-Brasil (InCor)). Direct drug costs were extracted from the Health System Prices Database. A Decision Tree Model was used for the analysis of Smoking cessation: CEs (cost-effectiveness) and Incremental cost-effectiveness ratio (ICER), considering varenicline monotherapy as standard. RESULTS: The CEs obtained were BRL 1.31, BRL 1.34, BRL 1.88, BRL 3.09 and BRL 1.98 billion in the use of varenicline monotherapy, varenicline associated with bupropion, bupropion associated with gum, bupropion associated with NRT (‘gum and patches’) and NRT in gum and patches, respectively. The ICERs were BRL 1.66 billion, BRL 153 million and per patient of BRL 1.400 and BRL 138,41 for varenicline associated with bupropion and bupropion associated with gum respectively and ICERs for bupropion associated with NRT and isolated NRT respectively were BRL 1.65 billion and BRL 164 billion (dominant). CONCLUSIONS: According to the results, treatment with varenicline (monotherapy) is cost-effective for all comparators and cost saving when compared to NRT and bupropion associated with NRT.

PRS42 COST-EFFECTIVENESS ANALYSIS OF A NEW EPINEPHRINE AUTO-INJECTOR FOR THE TREATMENT OF FOOD-ALLERGY REACTIONS: DECISION MODELLING USING SOCIETAL PERSPECTIVE

Patei AM, Saxena K, Holdford DA

Virginia Commonwealth University, Richmond, VA, USA

OBJECTIVES: Food allergy affects around 15 million Americans with an annual economic burden of over $25 billion. Guidelines emphasize prompt use of epinephrine auto-injector (EAI) for emergency treatment of allergic reactions. This study was performed to assess the cost-effectiveness of a new Epinephrine auto-injector (EAI) associated with varenicline (monotherapy) and varenicline associated with bupropion and NRT (‘gum and patches’ in the treatment of smoking population from Sao Paulo, Brazil’s city. METHODS: Effectiveness data of 6-months of treatment were obtained from 1044 patients (504 in the current smoking case of Instituto do Coração São Paulo-Brasil (InCor)). Direct drug costs were extracted from the Health System Prices Database. A Decision Tree Model was used for the analysis of Smoking cessation: CEs (cost-effectiveness) and Incremental cost-effectiveness ratio (ICER), considering varenicline monotherapy as standard. RESULTS: The CEs obtained were BRL 1.31, BRL 1.34, BRL 1.88, BRL 3.09 and BRL 1.98 billion in the use of varenicline monotherapy, varenicline associated with bupropion, bupropion associated with gum, bupropion associated with NRT (‘gum and patches’) and NRT in gum and patches, respectively. The ICERs were BRL 1.66 billion, BRL 153 million and per patient of BRL 1.400 and BRL 138,41 for varenicline associated with bupropion and bupropion associated with gum respectively and ICERs for bupropion associated with NRT and isolated NRT respectively were BRL 1.65 billion and BRL 164 billion (dominant). CONCLUSIONS: According to the results, treatment with varenicline (monotherapy) is cost-effective for all comparators and cost saving when compared to NRT and bupropion associated with NRT.

PRS41 HEALTH ECONOMIC BENEFIT OF INCLUDING COMPONENT RESOLVED DIAGNOSTICS (CRD) IMMUNOCAP ISAC IN IN VITRO DIAGNOSTIC (IVD) ALGORITHM IN PROSPECTIVE TRIAL WITH SUSPECTED FOOD ALLERGIC SCHOOL CHILDREN

Hermansson L1, Pensamo E2, Korhonen K1, Rantanen S1, Isoaho R1, Savolainen J2

1Thermo Fisher Scientific, Uppsala, Sweden, 2University of Turku, Turku, Finland, 3Härikkite Primary Care Center, Laita, Finland

OBJECTIVES: Children in Finland according to Finnish Allergy Program 2008-2018, is to decrease food avoidance diets by 50 %. Here focus is in algorithm with IVD and patient history in primary care school children. Health economic benefit of CRD (ISAC, is evaluated. METHODS: Database analysis EndoHart Primary Care Unit, including 2317 school children in Finland indicated that 199 children (8.6%) are on avoidance diet. In the present study, 19 of 116 children (16.3%) were intimated by contact allergy, and has direct impact in costs and patient’s quality of life. The 19 children were contacted by letter, and 36 (18%) were interviewed by physician. Of those, 24 agreed to take part in the study with PVZ. RESULTS: The used alternative was concluded for 15, which is 63% of children included in the study: cow’s milk 7 (29%), peanut 5 (21%), egg 3 (13%), fish 1 (4%) and fruits 1 (4%). Peanut could be reintroduced to all children after CRD, egg and milk remained specific IgE/IVD. Prior to the introduction of food a secondary care specialist food provocuation was performed to confirm the IGD result. CONCLUSIONS: CRD ISAC was beneficial in 54% of the cases and in 21% of the cases it was critical for decision making. The aim of the study was reached as avoiding the decrease of food avoidance diets, even though some children should be further evaluated. It is likely that introducing ISAC/IVD to traditional diagnostic algorithm can be considered cost-effective, with an average cost per avoided unnecessary diet for 480 EURs per child. To confirm the findings a larger study will be executed.