

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.

PRS39

AMINO ACID FORMULA AS A FIRST-LINE DIAGNOSIS TOOL IN INFANTS WITH COW'S MILK ALLERGY (CMA): A COST-EFFECTIVENESS ANALYSIS UNDER THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM PERSPECTIVE

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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. Amino acid formula (AAF) is an alternative in treatment of CMA patients, 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 AAF as a diagnostic tool for CMA followed by treatment according to current practice, compared to those currently (CP) used in Brazil, under the perspective of the public health care system. **METHODS:** A decision model was constructed depicting the CMA management, with a time horizon until patients turned three years old, when most of CMAs are resolved. Model inputs were based on literature review and opinions of allergists/gastroenterologists/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/relapses avoided. Deterministic and probabilistic sensitivity analyses were performed. **RESULTS:** The CP presented rates of 25.4% 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 AAF for diagnosis is dominant (USD1,345 and 900.6 non-symptomatic days) compared to CP (USD1,476 and 876.0 non-symptomatic days). **CONCLUSIONS:** AP enabled an earlier CMA diagnosis, avoiding waste of resources, allowing the establishment of prompt effective treatments and leading to higher compliance with clinicians' recommendations.

PRS40

COST-EFFECTIVENESS ANALYSIS OF NURSE-ADMINISTERED ORAL CORTICOSTEROIDS AT TRIAGE IN PEDIATRIC ASTHMA

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OBJECTIVES: Despite evidence supporting the need for oral corticosteroid use 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 time spent in the emergency department (ED). Using data from a time-series controlled trial, the objective of this study was to assess the cost-effectiveness of triage nurse-administered oral corticosteroids (NAC) in children presenting to the ED with moderate to severe asthma exacerbations prior to physician assessment. **METHODS:** Resource use and cost data for 644 acutely asthmatic patients enrolled in the controlled trial comparing NAC with standard care was used. Analysis assessed the per patient health care system costs for both the NAC (after) phase and the physician-ordered (before) phase over the trial's 8-month follow-up. Uncertainty around estimates was assessed through nonparametric bootstrapping which allowed calculation of the probability that NAC was cost-effective for different threshold values. Net benefit regression was used to estimate the incremental net benefit (INB) adjusted for potential confounders for reduced time in ED. **RESULTS:** NAC was dominant over standard care as it was both less costly (Canadian \$499.24 versus \$724.90) and mean time to clinical improvement was shorter (218 minutes versus 264 minutes). The probability that NAC was cost-effective was greater than 0.98 for all threshold values of reduction in time with symptoms. Sensitivity analyses adopting various alternative assumptions found only modest differences in cost savings between the phases, but did not change the conclusions of the analysis. Results of the net benefit regression provided further evidence that NAC was cost-effective. **CONCLUSIONS:** Triage nurse initiation of oral corticosteroids before physician assessment is a cost-effective strategy for treating children with moderate to severe asthma exacerbations in pediatric ED.

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 IN FINLAND

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OBJECTIVES: Aim of study, in accordance 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 at Härkätie Primary Care Unit, including 2317 school children in Finland indicated that 199 children (8.6%) are on avoidance diet ex. celiac disease. There is 37 (1.6%) milk and 32 (1.4%) egg free diets. Peanut and hazelnut allergy is indexed for 39 children and 6 are indicated as soya allergic. History of anaphylaxis was noted in 7. Avoidance recommendation is provided by parents and has direct impact in costs and patient's quality of life. The 199 children were contacted by letter, and 36 (18%) were interviewed by physician. Of those, 24 children agreed to take part in the study with IVD (67%). **RESULTS:** An unnecessary diet 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 after specific IgE IVD. Prior to the introduction of food a secondary care specialist food provocation was performed to confirm the IVD 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 avoidance diets decreased by 63%. The results indicate, even with low patient recruitment, 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.

PRS42

COST EFFECTIVENESS ANALYSIS OF RESPIRATORY SYNCYTIAL VIRUS INFECTION PROPHYLAXIS IN CHILDREN WITH CONGENITAL HEART DISEASE

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OBJECTIVES: Respiratory syncytial virus (RSV) is the leading cause of acute lower respiratory illness in children under two years of age. In Brazil, the VSR is the cause of 54.1% of all hospitalizations for pneumonia/bronchiolitis in infants under one year old, reaching up to 70% during the epidemic periods. Congenital heart disease (CHD) is an important risk factor for morbidity and mortality of RSV infection. This study performed a cost effectiveness analysis of Palivizumab (PVZ) to prevent RSV infection in infants undergoing cardiac surgery for correction of CHD. **METHODS:** Three Systematic Reviews (SR) of literature were performed, in Medline, Cochrane and LILACS, for efficacy, safety of PVZ and the prevalence of RSV in infants in Brazil. The economic evaluation developed a decision analytic model to estimate the cost-effectiveness ratio of using PVZ for prophylaxis of RSV infection in children undergoing cardiac surgery, from the perspective of Public Health System, with the time horizon of the postoperatively period. **RESULTS:** Efficacy search (478 titles) showed that PVZ reduces hospitalization for children with CHD by 45%. Safety search (67 titles) showed that the PVZ is safe for this population and the prevalence of RSV in Brazil search (120 titles) showed that in children hospitalized with lower respiratory tract infection there is a prevalence of 24.35% of RSV infection. The analytical model showed an incremental cost-effectiveness ratio of USD863.3 per day of hospitalization avoided and incremental cost-effectiveness ratio of USD132,398.9 per complication avoided. **CONCLUSIONS:** The prevalence of RSV in Brazil is 24.35%. PVZ was effective and safe to prevent severe RSV infection in children under two years of age with CHD, but at a high cost to avoid an outcome. Its use has shown a significant decrease in hospitalization of children receiving medication. Studies published worldwide are controversial, requiring discussion for the implementation of the therapy in Brazil.

PRS43

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

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OBJECTIVES: Drugs for smoking cessation are considered of great importance to the decline 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 São Paulo, Brazil's city. **METHODS:** Effectiveness data of 6-months of treatment were evaluated from a sample of patients (504) in the outpatient smoking care 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 Cost Effectiveness (CE) 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.

PRS44

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

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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 executed to assess the cost-effectiveness of a new EAI device among patients experiencing life-threatening food-allergy reactions. **METHODS:** An episodic Decision-analysis model was developed to estimate the incremental cost-effectiveness ratio (ICER) associated with the new EAI compared to standard EAI, from a societal perspective. Both EAls contain the same active drug of equal strength, but have different delivery systems. The model assumed a cohort of "at-risk" patients in the US population, with moderate-to-severe food-allergy reaction. Treatment success was defined as epinephrine self-injection without any errors. Data were obtained from published sources including patient survey studies. Direct costs (drug cost, hospitalization and emergency department cost) and indirect costs (lost work-productivity cost) associated with the treatments were calculated in 2013 US\$. Sensitivity analyses were performed on drug costs and treatment success rates. TreeAge Pro 2011 software