PDB102

RETROSPECTIVE ANALYSIS OF THE ECONOMIC BURDEN AMONG CUSHING'S DISEASE PATIENTS IN THE U.S. MEDICAID PROGRAM

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OBJECTIVES: To evaluate the economic burden among patients diagnosed with Cushing's disease (CD) in the U.S. Medicaid program. **METHODS:** Patients diagnosed with CD (International Classification of Disease, 9thRevision, Clinical Modification (ICD-9-CM) diagnosis code 255.0) were identified using U.S. Medicaid data from 01 January 2008 through 31 December 2010. The initial diagnosis date was designated as the index date. A matching comparator cohort was created including patients of the same age, race and gender but without a CD diagnosis, and a randomly-chosen index date to minimize selection bias. Patients in both cohorts were required to be age ≥18 years, with continuous medical and pharmacy benefits for 1 year pre- and 1 year post-index date. One-to-one propensity score matching (PSM) was used to compare health care costs and utilizations during the follow-up period between the diseased and comparison cohorts, and was adjusted for baseline demographic and clinical characteristics. **RESULTS:** After risk adjustment by PSM, a total of 340 patients in each cohort were matched. CD patients had significantly higher health care utilization, including inpatient admissions (36.18% vs. 12.53%, p<0.0001) and long-term care (5.29% vs. 2.06%, p<0.05), other service (100% vs. 94.12%, p<0.0001) and pharmacy visits (84.41% vs. 78.24%, p<0.05), compared to those without the disease. CD patients incurred significantly higher inpatient ($4,688 vs. $1,139, p<0.05) and pharmacy costs ($4,054 vs. $2,100, p<0.001) compared to those without CD. Long-term care and other service costs incurred were higher for CD patients, compared to comparison patients, but were not statistically significant. **CONCLUSIONS:** In the current study, CD patients in the U.S. Medicaid program had a higher burden of illness in terms of health care resource utilization and costs, compared to those without a CD diagnosis.

PDB103

THE POTENTIAL VALUE OF ONGOING SUPPORT IN TYPE-1 DIABETES MELLITUS WITH DAFNEPLUS: EXPLORATORY PRE-TRIAL COST-EFFECTIVENESS ANALYSIS ON PROPOSED TRIAL END-POINT TARGET FOR 12-MONTH HBA1C IMPROVEMENT

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OBJECTIVES: The Dose Adjustment For Normal Eating (DAFNE) structured education programme is shown to be effective both in terms of clinical outcomes and cost-effectiveness outcomes in the treatment of T1DM. DAFNEPlus aims to revise the DAFNE 5-day curriculum based on psychological and sociological findings in DAFNE, input from DAFNE graduates and emerging knowledge around behavioural science and technological developments. The current suggested primary endpoint is for the DAFNEplus programme to have an additional 20% DAFNE participants (70% in total) achieve either, (a) a reduction of at least 0.5% in HbA1c, or (b) to have an HbA1c below 7.5% (58.5 mmol/mol), at 12 months. This paper undertakes pre-trial what-if cost-effectiveness analyses concerning the DAFNEPlus programme, which aim to be useful both in the design of the intervention itself and of the proposed trial. **METHODS:** The Sheffield Type 1 Diabetes Policy Model is an individual patient-level simulation model of T1DM. It includes long-term microvascular (retinopathy, neuropathy and nephropathy) and macrovascular (myocardial infarction, stroke, revascularization and angina) diabetes-related complications and acute adverse events (severe hypoglycaemia and diabetic ketoacidosis). Econometric methods were used to obtain the target level of HbA1c responders in the DAFNEPlus arm. **RESULTS:** DAFNEplus would be considered as cost-effective if the additional spending on the intervention would be limited to £455-£751 per patient per year, depending on the assumptions on the length of maintenance period for the HbA1c benefit and the target HbA1c responder endpoint (70% in total) being achieved in the future trial. To achieve a more favourable cost-effectiveness probability of 80%, for example, the additional per patient per year cost should be restricted to £393-£574 range. **CONCLUSIONS:** Pre-trial modelling has enabled a clear understanding of the threshold range for the annual cost of DAFNEplus, which is still being designed, in order to be considered as cost-effective at the £20,000/QALY threshold.

PDB104

THE COST-EFFECTIVENESS OF SAXAGLIPTIN WHEN ADDED TO METFORMIN AND SULPHONYLUREA IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS IN SPAIN

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OBJECTIVES: In patients with type 2 diabetes mellitus (T2DM), when blood glucose is not adequately controlled by the combination of metformin (MET) and sulphonylurea (SU), the clinician has to choose between adding a third oral drug or starting insulin therapy. The objective of this study was to assess the cost-effectiveness in the Spanish setting of adding saxagliptin (SAXA) to MET and SU, compared to adding basal insulin (INS). Additionally, the SAXA strategy was compared with a thiazolidinedione (TZD), also added on top of MET and SU. **METHODS:** The published and validated CARDIFF long-term diabetes model was used to estimate the direct medical costs and quality-adjusted life years (QALYs) associated with each strategy. Clinical inputs were obtained from a network meta-analysis. Based on the United Kingdom Prospective Diabetes Study equations, the model predicted disease progression and occurrence of micro- and macro-vascular complications, including mortality. Costs and utilities were applied to complications, hypoglycaemias and body mass index changes. The perspective of the Spanish Healthcare System was adopted over a lifetime horizon, at a discount rate of 3% (costs and health outcomes). Univariate and probabilistic sensitivity analyses were conducted. **RESULTS:** SAXA add-on to MET plus SU resulted in a dominant strategy compared to INS add-on to MET plus SU, providing a gain of 0.377 QALYs (95% CI: -0.227 to 0.754) and cost savings of €264 (95% CI: -€ 1,879 to € 2,768).. At a willingness-to-pay threshold of €30,000 per QALY gained, SAXA strategy had an 82% probability to be cost-effective. Compared to TZD add-on to MET plus SU, the triple therapy with SAXA reached an incremental cost-effectiveness ratio of €2,610 per QALY gained. **CONCLUSIONS:** Saxagliptin was predicted to be a cost-effective option in Spain when a new drug needs to be added in T2DM patients inadequately controlled with metformin and sulphonylurea alone.

PDB105

THE COST-EFFECTIVENESS OF DAPAGLIFLOZIN IN COMBINATION WITH INSULIN FOR THE TREATMENT OF TYPE 2 DIABETES MELLITUS (T2DM) IN SPAIN

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OBJECTIVES: To assess the cost-effectiveness of dapagliflozin, a sodium-glucose co-transporter-2 (SGLT-2) inhibitor versus dipeptidyl peptidase-4 inhibitor (DPP4i) both added on top of insulin, or compared to insulin alone (±oral anti-diabetes agents) for patients who are inadequately controlled on insulin strategy. **METHODS:** The CARDIFF diabetes model was used. Clinical inputs were derived from a randomized clinical trial comparing dapagliflozin add-on to insulin with insulin alone, and network-meta-analysis for the comparison with DPP4i. Together with United Kingdom Prospective Diabetes Study (UKPDS) equations, the model predicts disease progression and the number of micro- and macro-vascular complications, along with diabetes-specific and all-cause mortality. The perspective of the Spanish health care payer was adopted over a lifetime horizon. Costs and utilities were assigned to the appropriate model parameters to calculate total Quality-Adjusted-Life-Years (QALYs) and total costs. Deterministic and probabilistic sensitivity analyses were conducted. **RESULTS:** Compared to insulin alone, dapagliflozin added to insulin was associated with 0.698 incremental QALYs (95%CI: 0.442; 1.211) at an additional cost of €1,508 (95%CI: €611; €1,517), resulting in an incremental cost-effectiveness ratio (ICER) point estimate of €2,159/QALY. Dapagliflozin was found to dominate DPP4i add-on to insulin, being associated with slightly less costs (-€51; 95%CI: -€913; €553) and higher QALYs (0.168; 95%CI: -0.007; 0.417). At a willingness-to-pay threshold of €20,000/QALY, the dapagliflozin strategy was estimated to have a 100% probability of being cost-effective when compared to the insulin alone, and a 98% probability when compared to the DPP4i strategy. These findings were shown to be robust to variation in range of model parameters. **CONCLUSIONS:** Dapagliflozin added on top of Insulin was predicted to be a cost-effective (vs. insulin alone) and cost saving (vs DPP4i) alternative in Spain in combination with insulin for patients who are inadequately controlled with insulin treatment regimens.

PDB106

THE COST-EFFECTIVENESS OF TOLVAPTAN FOR THE TREATMENT OF HYPONATRAEMIA SECONDARY TO SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE SECRETION IN SWEDEN

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OBJECTIVES: Tolvaptan is a selective vasopressin V2-receptor antagonist indicated for the treatment of adult patients with hyponatraemia (HN) secondary to syndrome of inappropriate antidiuretic hormone secretion (SIADH). To date there have been no published economic evaluations assessing the cost effectiveness of tolvaptan in this indication. The aim of this study was to evaluate the cost effectiveness of tolvaptan versus no active treatment (NAT) from a Swedish societal perspective. **METHODS:** The economic evaluation considers a hypothetical population of individuals with HN secondary to SIADH who have either failed to respond to fluid restriction or for whom the use of fluid restriction is not suitable. The analysis considers three clinically relevant patient populations within the SIADH indication: 'all SIADH', small-cell lung cancer (SCLC) and pneumonia. A discrete event simulation was developed to model the progression of individuals through multiple inpatient admissions over a 30 day time horizon (180 days in the SCLC scenario). Key sources of evidence included randomised controlled trials (SALT I & II) and observational data sources. Unit costs were collected from publicly available sources. Utility values were obtained from mapping the SF-12 scores from the SALT I & II trials to EQ-5D. The primary outcome of the analysis was the incremental cost-effectiveness ratio (ICER) expressed as a cost per quality-adjusted life-year (QALY). **RESULTS:** In the 'all SIADH' population tolvaptan was associated with reduced costs (SEK 5,778) and increased QALYs (0.0019) versus NAT and was therefore dominant. In the SCLC and pneumonia subgroups tolvaptan was also associated with reduced costs and QALY improvements. The results were most sensitive to the duration of tolvaptan treatment and the assumptions around duration of hospitalisation. **CONCLUSIONS:** In all populations considered (all SIADH, SCLC and pneumonia) tolvaptan was dominant compared to NAT being associated with reduced costs and increased QALYs.

PDB107

COST-EFFECTIVENESS OF EMPAGLIFLOZIN (JARDIANCE®) 10 MG AND 25 MG ADMINISTERED AS AN ADD-ON TO METFORMIN COMPARED TO OTHER SODIUM-GLUCOSE CO-TRANSPORTER 2 INHIBITORS (SGLT2IS) FOR PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN THE UK

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OBJECTIVES: To assess the cost-effectiveness of the novel SGLT2is empagliflozin 10mg and 25mg compared to other SGLT2is (canagliflozin 100mg, canagliflozin 300mg, and dapagliflozin 10mg) when administered as an add-on to metformin for the treatment of patients with T2DM in the UK. **METHODS:** A micro-simulation model was developed, based on the United Kingdom Prospective Diabetes Study (UKPDS68) and the Januvia Diabetes Economic (JADE) model, to estimate long-term diabetes-related complications, QALYs and costs in a cohort of T2DM patients initiating dual therapy. The model was populated with the results of a network meta-analysis that estimated