PDB44

HEALTH-ECONOMIC COMPARISON OF CONTINUOUS SUBCUTANEOUS INSULIN INFUSION VERSUS MULTIPLE DAILY INJECTIONS FOR THE TREATMENT OF ADULT TYPE 1 DIABETES IN KAZAKHSTAN

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OBJECTIVES: To project the long-term costs and outcomes of continuous subcutaneous insulin infusion (CSII) compared with multiple daily injections (MDI) in adult patients with Type 1 diabetes in KAZAKHSTAN. **METHODS:** The CORE Diabetes Model is a peer-reviewed, validated model, which employs standard Markov techniques to describe the long-term incidence and progression of diabetes-related complications. It was used to simulate disease progression in a cohort of adult patients with baseline characteristics and costs taken from primary data collection in KAZAKHSTAN (mean age 39.7 years, duration of diabetes 10.1 years and mean HbA1c 8.5%). Clinical outcomes (HbA1c and hypoglycemic events) were taken from a published meta-analysis of CSII studies. Direct costs for 2013 were calculated from a third-party payer perspective. Discount rates of 5% *per annum* were applied to costs and 3% to clinical outcomes. **RESULTS:** Treatment with CSII was associated with an improvement in mean quality adjusted life expectancy (QALE) of 0.745 years compared with MDI and incidence of any diabetes related complication was delayed on average by 1 year with CSII. This produced an incremental cost-effectiveness ratio (ICER) of KZT 4'784'971 per quality-adjusted life year (QALY) gained with CSII vs. MDI. CSII related therapy costs were partially offset by the savings due to the reduction in long-term complications. CSII treatment also delayed the average onset of complications such as ESRD (1.9 years) and blindness (2.1 years). Extensive sensitivity analyses showed the robustness of the results. **CONCLUSIONS:** Improvements in glycemic control associated with CSII over MDI led to improved QALE owing to reduced incidence of diabetes-related complications. CSII was associated with ICERs representing good value for money by current standards in KAZAKHSTAN (using a WTP threshold of 6,330,000 KZT [3x GDP]) from a payer's perspective. CSII would be even more attractive from a societal perspective when including indirect costs.

PDB45

COST OF ACHIEVING RELEVANT COMPOSITE ENDPOINT OF HBA1C<7%, NO HYPOGLYCAEMIA AND WEIGHT LOSS OF ≥3% IN A 52 WEEK POST-HOC ANALYSIS OF DAPAGLIFLOZIN VERSUS GLIPIZIDE

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OBJECTIVES: Dapagliflozin (DAPA), a selective SGLT2 inhibitor, reduces hyperglycaemia in an insulin-independent manner by increasing urinary glucose excretion. Glipizide (sulphonylurea) reduces hyperglycemia by increasing beta cell insulin secretion. We conducted an analysis of the cost of treating patients to a clinically relevant composite endpoint of HbA1c <7%, no major or minor hypoglycaemic events and weight loss ≥3%. **METHODS:** The Cardiff Diabetes model was used to estimate the cost of treating patients to the composite endpoint of HbA1c <7%, no major or minor hypoglycaemic events and weight loss ≥3% in the UK using 52 week data from a previously published double-blind randomised clinical trial of DAPA vs glipizide (GLIP) in combination with metformin (NCT 00660907). The cost of treating one patient to the composite endpoint using DAPA or GLIP over 52 weeks was calculated as total cost per treatment arm divided by number of patients that reached the composite endpoint in that treatment arm. Calculation of costs included drug acquisition costs, cost for adverse events, and costs related to the patient's BMI level. **RESULTS:** The number needed to treat was 5 on DAPA and 54 on GLIP for one patient to achieve the composite endpoint. The overall cost of treating one patient over 52 weeks to the composite endpoint of HbA1c <7%, no major or minor hypoglycaemic events and ≥3% weight loss was £3296 on DAPA and £13620 on GLIP. **CONCLUSIONS:** The cost of treating one patient to composite endpoint of HbA1c <7%, no major/minor hypoglycaemic events and ≥3% weight loss was approximately 4 times higher with GLIP compared to DAPA. These results demonstrate that when multiple treatment goals, including weight loss and reduction of hypoglycaemic events are targeted, the cost of treating patients with DAPA is lower compared to GLIP.

PDB47

COST-EFFECTIVENESS ANALYSIS OF DAPAGLIFOZIN VERSUS OTHER T2DM TREATMENTS IN THE SPANISH CONTEXT

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OBJECTIVES: To analyse the cost-effectiveness of dapagliflozin in combination with metformin in the treatment of type 2 diabetes (T2DM) in comparison with sulfonylureas, thiazolidinediones and DPP4 inhibitors also combined with metformin in Spain. **METHODS:** The analysis was based on the results of the available clinical trials in order to estimate the quality-adjusted life years (QALY) and economic consequences of managing the disease and its complications. An economic model was used to simulate the natural history of 10,000 T2DM patients with each treatment option. The analysis was performed from the National Health System perspective considering direct costs (pharmacological costs, adverse events, T2DM complications, hypoglycaemias and costs related to weight gain) and patient's entire life as time horizon. A discount rate of 3% was applied to costs and benefits. All costs were updated to €2013. **RESULTS:** The primary analysis compared dapagliflozin with sulfonylureas resulting in 0.525 additional QALYs and €1,835 additional cost (cost-effectiveness ratio of €3,496/QALY). The higher drug cost of dapagliflozin was partially offset by lower costs of complications, hypoglycemia and the cost associated with weight gain. In the secondary analyses, dapagliflozin was a cost-effective option compared with thiazolidinediones and DPP4, resulting in a cost per QALY gained of €20,183 and €487, respectively. The univariate and probabilistic sensitivity analyses confirmed the robustness of the results. **CONCLUSIONS:** Dapagliflozin in combination with metformin proved to be a cost-effective alternative compared to sulfonylureas, thiazolidinediones and DPP4 inhibitors in the treatment of T2DM.

PDB48

A BUDGET IMPACT AND COST-EFFECTIVENESS ANALYSIS OF BLOOD GLUCOSE MONITORING SYSTEM IN ONE ITALIAN REGION

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OBJECTIVES: Diabetes is a chronic disease and associated with significant health care expenditures. Increasing costs are mainly related to long-term complications. Identifying patterns of hypoglycemia by means of a blood glucose monitoring system (BGMS) can be used to support diabetes management efficiently. **METHODS:** An economic analysis was carried out to estimate the life-time cost-effectiveness (CEA) of blood glucose monitoring system (BGMS) with pattern alert technology vs. standard BGMS for the prevention of Severe Hypoglycaemia (SH) in insulin-treated type 1 (DM1) and type 2 patients (DM2). The cost-effectiveness analysis was based on a literature review and cost data (direct and indirect) from the Emilia Romagna region; a decision tree was developed to calculate the incremental cost per additional quality of life. The BIA (Budget Impact Analysis) estimated the cost of using the new pattern alert technology in the Italian Healthcare System. **RESULTS:** For the base-case scenario, the utilization of BGMS with pattern alert technology was less costly and more effective compared to standard BGMS. Life time cost savings for the prevention of SH were 300 euro for DM1 and DM2 patients using pattern alert technology. The difference in life time QALYs was 0,17. **CONCLUSIONS:** BGMS with pattern alert technology, monitoring individual blood glucose levels are cost effective in preventing SH for DM1 and insulin-treated DM2 patients, as well as in detecting blood glucose trends and patterns. Nevertheless, empirical data on the probability of reducing Severe Hypoglycemia is necessary in order to reach any firm conclusions.

PDB49

INCRETIN THERAPY FOR PATIENTS WITH TYPE 2 DIABETES IN SPAIN: A COST-EFFECTIVENESS ANALYSIS OF LIRAGLUTIDE VERSUS SITAGLIPTIN

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OBJECTIVES: Diabetes mellitus represents a significant challenge to health care providers in Spain, with a national prevalence of over 8% and approximately 20,000 diabetes-related deaths annually. Treatment with GLP-1 receptor agonists and DPP-4 inhibitors, which target the incretin axis, has the potential to improve glycemic control without the weight gain associated with traditional therapies. To evaluate the relative cost-effectiveness of incretin therapies, the present study compared the long-term clinical and cost implications associated with liraglutide and sitagliptin in type 2 diabetes patients in Spain. **METHODS:** Data were taken from a randomized, controlled trial (NCT00700817) in which adults with type 2 diabetes (mean age 55 years, HbA1c 8.4%, BMI 33kg/m^2) failing metformin monotherapy were randomly allocated to receive either 1.2mg liraglutide or 100mg sitagliptin daily in addition to metformin. Liraglutide was associated with greater improvements from baseline HbA1c (–1.24% vs. –0.9%) and BMI (–0.99kg/m^2 vs. –0.33kg/m^2). Long-term projections of clinical outcomes and direct costs (2012 EUR) were made using a published and validated model of type 2 diabetes and assumed patients switched to insulin after five years. **RESULTS:** Liraglutide was associated with improved life expectancy (14.05 years vs. 13.91 years) and quality-adjusted life expectancy (9.04 quality-adjusted life years [QALYs] vs. 8.87 QALYs) compared to sitagliptin. Improved clinical outcomes were driven by improved glycemic control, leading to a reduced incidence of diabetes-related complications, including renal disease, cardiovascular disease, ophthalmic and diabetic foot complications. Mean cost savings as a result of avoided complications were EUR 1,827 per patient. Overall, liraglutide was associated with increased direct costs of EUR 2,297, yielding an incremental cost-effectiveness ratio of EUR 13,266 per QALY gained versus sitagliptin. **CONCLUSIONS:** Liraglutide was projected to improve life expectancy, quality-adjusted life expectancy and reduce incidence of diabetes-related complication. Liraglutide is likely to be cost-effective from a health care payer perspective in Spain.

PDB50

HEALTH-ECONOMIC COMPARISON OF CONTINUOUS SUBCUTANEOUS INSULIN INFUSION VERSUS MULTIPLE DAILY INJECTIONS FOR THE TREATMENT OF TYPE 1 DIABETES IN KAZAKHSTAN CHILDREN

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OBJECTIVES: To project the long-term costs and outcomes of continuous subcutaneous insulin infusion (CSII) compared with multiple daily injections (MDI) in children with Type 1 diabetes in KAZAKHSTAN. **METHODS:** The CORE Diabetes Model is a peer-reviewed, validated model, which employs standard Markov/Monte