Abstracts

Injections (MDI) for Type-1.

RESULTS: IDet/IAsp treatment was associated with fewer diabetes-related complications, improved life expectancy (0.23 life years gained) and quality-adjusted life expectancy (0.21 QALYs gained) compared to NPH/HSI. Mean total lifetime costs were €13,761 per patient higher with IDet/IAsp, leading to incremental cost-effectiveness ratios (ICERs) of €13,761 per life year and €15,071 per QALY gained. CONCLUSIONS: Short-term clinical benefits in glycemic control, hypoglycemic event rates and BMI associated with IDet/IAsp basal/bolus therapy were projected to lead to fewer complications, improved life expectancy and quality-adjusted life expectancy compared to NPH/HSI. This resulted in ICERs for IDet/IAsp versus NPH/HSI in the range considered to represent good value for money.

ECONOMIC EVALUATION OF DETEMIR-BASED BASAL/BOLUS THERAPY VERSUS NPH-BASED BASAL/BOLUS THERAPY FOR TYPE-1 DIABETES IN GERMANY

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OBJECTIVES: In a recent randomized, controlled clinical study in 447 patients with type-1 diabetes, use of insulin detemir (IDet) versus neutral protamine hagedorn (NPH) insulin in a basal (twice daily)/bolus regimen with insulin aspart (IAsp) as bolus insulin, demonstrated that IDet/IAsp was associated with a risk reduction of 22% for hypoglycemic events (p = 0.029), a reduction of 0.2 kg in body weight (p < 0.001) and decreased systolic blood pressure (SBP) (3 mmHg, p = 0.001) versus NPH/IAsp over 6 months of treatment. No significant difference in HbA1c was noted. The aim of this analysis was to assess the impact of these changes over long-term treatment with IDet/IAsp versus NPH/IAsp. METHODS: A peer-reviewed, validated computer simulation model was used to project these short-term findings to evaluate long-term clinical and cost outcomes. Transition probabilities and risk adjustments were derived from published studies. Baseline cohort characteristics were taken from the clinical trial. Total direct costs (complications + treatment costs) were derived from published sources and projected over patients’ lifetimes from a German National Health care perspective. Costs and clinical benefits were discounted at 3.5% annually.

RESULTS: Decreased incidence of hypoglycemic events, improved BMI and SBP associated with IDet/IAsp treatment led to fewer diabetes-related complications, increased life expectancy (0.15 years) and improved quality-adjusted life expectancy (0.22 QALYs) compared to NPH/IAsp. Mean total lifetime costs were €1204 per patient higher in the IDet/IAsp treatment arm than in the NPH/IAsp group, leading to incremental cost-effectiveness ratios of €8027 per LYG and €5473 per QALY gained. CONCLUSIONS: Short-term clinical improvements associated with IDet/IAsp were projected to lead to a lower incidence of complications, improved life expectancy and quality-adjusted life expectancy compared to NPH/IAsp. Reductions in the cost of complications partially offset the costs of IDet/IAsp treatment, leading to incremental cost-effectiveness ratios within the range considered to represent good value for money.

ASSESSMENT OF THE LONG-TERM COST-EFFECTIVENESS OF INSULIN ASPART + METFORMIN VERSUS HUMAN INSULIN + METFORMIN REGIMENS IN TYPE-2 DIABETES IN GERMANY BASED ON THE CLINICAL FINDINGS OF THE PHAZIT STUDY

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OBJECTIVES: To evaluate the long-term clinical and cost outcomes associated with insulin aspart + metformin (IAsp/MET) versus human insulin + metformin (HI/MET) in patients with Type-2 diabetes in a German setting based on the findings of the PHAZIT clinical trial. METHODS: Long-term outcomes were
projected using a peer-reviewed and validated computer simulation model of diabetes. Clinical input (cohort characteristics and treatment effects) were taken from PHAZIT, a prospective, non-randomized, observational study of Type-2 diabetes patients from 51 German diabetes centers. In PHAZIT, patients were switched to a combination of IAsp/MET (n = 392) or HI/MET (n = 353) at baseline. 24-week results showed an improvement in HbA1c of 0.15% and decreased body mass index (BMI) (0.3 kg/m²) with IAsp/MET versus HI/MET. No significant changes in hypoglycemic event rates were observed. Transition probabilities in the model and HbA1c-dependent adjustments were derived from published sources. Direct costs were retrieved from published data and accounted over patient lifetimes. Costs and clinical benefits were discounted at 3.5% annually. RESULTS: Long-term projections showed that IAsp/MET treatment was associated with fewer diabetes-related complications, improved life expectancy (0.13 life years gained) and quality-adjusted life expectancy (0.09 QALYs gained) compared to HI/MET. Mean total lifetime costs were €1,173 per patient higher with IAsp/MET, leading to incremental cost-effectiveness ratios (ICERs) of €9,023 per life year gained and €13,033 per QALY gained. CONCLUSIONS: Based on data from the 24-week PHAZIT trial, improvements in glycemic control and BMI associated with IAsp/MET were projected to lead to fewer diabetes-related complications, as well as improved life expectancy and quality-adjusted life expectancy compared to HI/MET. Incremental cost-effectiveness analysis indicated that IAsp/MET was within range taken to represent good value for money compared to HI/MET in the treatment of Type-2 diabetes over patient lifetimes in the German setting.

FIXED COMBINATION METFORMIN PLUS GLIBENCLAMIDE (GLUCOVANCE®) IS COST AND LIFE SAVING COMPARED TO METFORMIN PLUS ROSIGLITAZONE IN TYPE-2 DIABETES PATIENTS IN FRANCE

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OBJECTIVES: To evaluate the cost-effectiveness of oral antidiabetic therapies, a fixed combination (metformin plus glibenclamide, Glucovance®) and a free combination (metformin plus rosiglitazone), in France. METHODS: A peer-reviewed, published, validated computer simulation model was used to project long-term clinical and cost outcomes of treatment with Glucovance® or metformin + rosiglitazone. The model combined standard Markov sub-models to simulate the incidence and progression of complications and calculate costs over patients’ lifetimes. Transition probabilities and risk adjustments were derived from published sources, including the UKPDS. Treatment effects, average doses and baseline cohort characteristics were taken from a recent double-blind randomized clinical trial showing that Glucovance® resulted in significantly greater reductions in HbA1c (~0.4%) compared with metformin + rosiglitazone in Type-2 diabetes patients inadequately controlled on metformin monotherapy. Direct costs (2004 Euros) were retrieved from published sources and projected over patient lifetimes from a third party health care payer perspective. Costs and clinical benefits were discounted at 3% annually. RESULTS: In the long-term, Glucovance® treatment was associated with improvements in discounted life expectancy (0.19 years) and quality-adjusted life expectancy (0.18 years) compared to metformin + rosiglitazone. Undiscounted life expectancies were 14.73 and 14.40 years in the Glucovance® and metformin + rosiglitazone groups respectively. Diabetes-related complications were delayed by an average of 0.3 years in the Glucovance® arm. Lifetime direct costs (treatment and complication costs) were on average less expensive with Glucovance® than with metformin + rosiglitazone (by €5605 per patient). At a shorter time horizon of 10 years, Glucovance® treatment was also projected to be associated with improved life expectancy and lower total costs than metformin + rosiglitazone. CONCLUSIONS: In France, Glucovance® is dominant to metformin + rosiglitazone over medium and long-term time horizons, leading to improvements in life expectancy, quality-adjusted life expectancy and cost savings in Type-2 diabetes patients inadequately controlled on metformin monotherapy.

COMPARATIVE EVALUATION OF THE LONG-TERM COST-EFFECTIVENESS OF BIPHASIC INSULIN ASPART 30 AND INSULIN GLARGINE IN A SUB-POPULATION OF POORLY CONTROLLED PATIENTS WITH TYPE-2 DIABETES RECEIVING ORAL ANTIDIABETIC AGENTS

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OBJECTIVES: To project the long-term clinical and economic outcomes of intensive treatment with either biphasic insulin aspart 30 (BIAsp30) or insulin glargine among Type-2 diabetes patients exhibiting particularly high HbA1c levels when taking oral antidiabetic therapy alone. METHODS: Baseline characteristics and end-of-study treatment effect data among a sub-population of insulin naïve Type-2 subjects with baseline HbA1c levels ≥ 8.5% (mean HbA1c: 10.2%) were derived from a multicenter, 28-week, head-to-head clinical trial (INITIATE). Significant improvements in HbA1c levels favoring randomization to twice-daily BIAsp 30 + metformin (met) ± thiazolidinediones (TZD) compared to bedtime insulin glargine + met ± TZD were demonstrated (−0.53% between arms; p < 0.005). A peer-reviewed, validated Markov/Monte-Carlo model combining published literature for risk of long-term diabetic complications with quality-of-life utilities projected the incremental cost-effectiveness ratio (ICER) and cumulative incidences of diabetes-related complications over 35 years. Cost-effectiveness was measured as cost per life years gained (LYG) and cost per quality adjusted life years gained (QALY). Cardiovascular, neurological, renal, and retinal complication rates were assessed. Lifetime costs were calculated as the annual direct pharmacy costs plus complication costs (US Medicare perspective). Clinical outcomes and costs were discounted at 3% annually. Sensitivity analyses were performed. RESULTS: Improvements in glycemic control corresponded with incremental increases in LYG and QALY favoring BIAsp 30 versus glargine (0.28 ± 0.21 and 0.27 ± 0.15 years, respectively). Treatment with BIAsp 30 was associated with reductions in the cumulative incidence of diabetes-related complications, notably in renal (18% less end-stage renal disease) and retinal (12% less severe vision loss) co-morbidities. An ICER of $30,924 per QALY gained was deduced. Sensitivity analyses support the reliability of the results. CONCLUSIONS: Among a sub-population of poorly controlled insulin naïve Type-2 patients, BIAsp 30 was estimated to reduce lifetime complication incidences and be cost-effective within commonly supported thresholds when compared to insulin glargine.