tions. Relative effectiveness for glycaemic control (HbA1c) and hypoglycaemia was determined from pivotal clinical trials. RESULTS: Pooled analysis of pre-registration studies showed no difference in HbA1c between glargine-treated patients and NPH but did show a 28% risk reduction in severe hypoglycaemic episodes and a 22% risk reduction in nocturnal hypoglycaemic episodes compared to NPH. Over 40 years, treatment with NPH resulted in 42,518 additional severe hypoglycaemic events and 662,698 additional nocturnal hypoglycaemic events compared to insulin glargine. The discounted incremental cost effectiveness ratio (ICER) was £12,302 per quality adjusted life year (QALY) gained. Sensitivity analyses showed these findings were robust. CONCLUSIONS: For any given degree of glycaemia, there was reduced likelihood of severe and nocturnal hypoglycaemia with glargine. Insulin glargine is cost-effective when used as basal insulin for the treatment of people with Type 1 Diabetes. The ICER is well within accepted thresholds for cost-effective treatments in the UK.

OBJECTIVES: The 2-year RESULT study demonstrated that rosiglitazone (RSG) + sulphonylurea (SU) induced a sustained increase in beta-cell function (BCF) (56%, p < 0.0001) compared to no change with SU alone (6% p = 0.41). This study explores the impact of modelling improved BCF on predicted lifetime health outcomes and health care expenditure in Spain. METHODS: DiDACt, a peer-reviewed published long-term model of T2DM, was used to project the natural lifetime progression of T2DM for 1000 Spanish patients with characteristics matched to those in the RESULT study (73% male, mean age 68.2 years, mean BMI 30 kg/m2). Following failure to maintain glycaemic target (HbA1C ≥ 7.5%) with intermediate dose of SU, up-titration of SU therapy was compared to RSG + SU combination. Future costs and outcomes were discounted at 5% per year. The original calibration of RSG in DiDACt was based primarily on insulin sensitization. Improved BCF can be represented by using an additive, multiplicative or combined approach. The additive representation assumes a one-off change independent of existing BCF. The multiplicative representation assumes the impact is proportionate to current BCF. RESULTS: The findings demonstrate that both multiplicative and additive approaches to representing RSG’s effect on BCF result in reduced lifetime costs and increased Quality Adjusted Life-Years (QALYs) compared with the previous calibration, with cost-effectiveness ratios falling well below both established thresholds and previous estimates. CONCLUSIONS: Each modelling method of the impact of improved BCF in the management of T2DM indicated that RSG is more cost-effective than previously estimated. The impact of RSG on BCF may be confirmed in next forthcoming long-term studies.

OBJECTIVES: To examine if close control of blood glucose levels in patients with type 2 diabetes treated with diet restrictions or oral medication has an economic benefit. METHODS: A decision analytic model with a time horizon of eight years has been developed. Costs are assessed from the perspective of the Swiss health care system. Data on the efficacy of SMBG come from the large observational ROSSO study conducted in Germany. The economic endpoint is the impact of blood glucose monitoring on direct medical costs, taking into account reduced costs due to five major diabetes-related complications (myocardial infarction (MI), stroke, haemodialysis due to renal failure, blindness, and foot amputation), and assuming no difference in all other direct medical costs of diabetes. The clinical endpoint is quality adjusted life years (QALYs) gained. RESULTS: Self-monitoring of blood glucose induces a cost saving of CHF1062 over eight years due to a reduction in the number of diabetes-related complications. This hints at an annual budget saving in diabetes related complications of CHF21 Mio. per year, based on an estimate of 160000 non-insulin treated type 2 diabetes patients in Switzerland. In addition, the quality of life is improved for patients performing SMBG. A critical parameter is the number of test strips used. A sensitivity analysis shows that with a weekly consumption of more than 5.25 strips per patient, SMBG is no longer a dominant strategy. No related, evidence-based guidelines are currently available. CONCLUSIONS: The potential economic benefit of self-monitoring of blood glucose among non insulin dependent type 2 diabetes patients seems to be substantial in Switzerland, due to a reduction in long-term diabetes complications.
CONTINUOUS SUBCUTANEOUS INSULIN INFUSION VERSUS MULTIPLE DAILY INJECTION OF INSULIN IN PATIENTS WITH TYPE 1 DIABETES: A LONG-TERM HEALTH ECONOMIC ANALYSIS IN THE NORWEGIAN AND SWEDISH SETTINGS

OBJECTIVES: To project the long-term clinical and economic outcomes associated with continuous subcutaneous insulin infusion (CSI) compared with multiple daily injection (MDI) in patients with type 1 diabetes in Sweden and Norway.

METHODS: A previously published and validated computer simulation model of type 1 diabetes was adapted to project life expectancy (LE), quality-adjusted life expectancy (QALE), and costs in Norwegian and Swedish settings. Effects associated with CSI and MDI delivery systems and baseline simulated cohort characteristics (mean age 26 years, duration of diabetes 12 years, 54% male, mean HbA1c 8.6%) were taken from a recent meta-analysis. Direct medical costs and indirect costs (human capital approach) were accounted in year 2005 values. Clinical and cost outcomes were projected over a lifetime horizon and discounted at a rate of 3% per annum.

RESULTS: CSI treatment was associated with increased LE versus MDI in the Norwegian and Swedish settings (0.95 and 1.03 years, respectively) and increased QALE (0.98 and 1.03 quality-adjusted life years (QALYs), respectively). The cumulative incidence of diabetes-related complications, particularly nephropathy and retinopathy complications was also lower in the CSI treatment arm compared to MDI. Mean lifetime costs were greater for CSI treatment compared to MDI in the Norwegian setting (NOK 3,505,368 ± 77,645 versus 3,480,974 ± 76,698), which produced an incremental cost-effectiveness ratio (ICER) of NOK 24,837 (∼€3200) per QALY gained for CSI versus MDI. In the Swedish setting, CSI was also associated with higher lifetime costs compared to MDI (SEK 3,026,056 ± 58,873 vs 2,965,366 ± 60,025) which led to an ICER of SEK 58,830 (∼€6300) per QALY gained for CSI versus MDI.

CONCLUSIONS: CSI was associated with increased LE and QALE and reduced incidence of diabetes-related complications compared to MDI. CSI represents good value for money in the Norwegian and Swedish setting from a societal perspective by generally accepted standards.

THE RELATIVE COST EFFECTIVENESS OF INSULIN GLARGINE VERSUS NPH INSULIN IN THE UK IN PEOPLE WITH TYPE 2 DIABETES

OBJECTIVES: The purpose of this study was to evaluate the relative cost effectiveness (cost utility) of insulin glargine versus NPH insulin in the UK for the treatment of people with type 2 diabetes mellitus (T2DM) using pooled data from the Phase III clinical trials programme.

METHODS: This was a health economic evaluation using a stochastic simulation model. Transition probabilities for progression to diabetes-related complications for the model were derived mainly from the UKPDS (UK Prospective Diabetes Study) risk equations. Costs were derived from published estimates and local data. The maximum time horizon was 40 years to ensure effective modelling of diabetes complications was also lower in the CSI treatment arm compared to MDI. Mean lifetime costs were greater for CSI treatment compared to MDI in the Norwegian setting (NOK 3,505,368 ± 77,645 versus 3,480,974 ± 76,698), which produced an incremental cost-effectiveness ratio (ICER) of NOK 24,837 (∼€3200) per QALY gained for CSI versus MDI. In the Swedish setting, CSI was also associated with higher lifetime costs compared to MDI (SEK 3,026,056 ± 58,873 vs 2,965,366 ± 60,025) which led to an ICER of SEK 58,830 (∼€6300) per QALY gained for CSI versus MDI.

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