HbA1c are likely to lead to substantial clinical and economic benefits, driven by reduced complication rates. The cost-effectiveness of interventions designed to improve glycemic control in Saudi Arabia is worthy of investigation.

**PDB36**

**AN EVALUATION OF THE LONG-TERM COSTS AND EFFECTS OF A 1% REDUCTION IN HbA1C IN TYPE 2 DIABETES PATIENTS IN MALAYSIA**

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**OBJECTIVES:** A1cHieve is a prospective, international, observational study of basal, bolus and biphasic insulin analogues in routine clinical practice. The present analysis aimed to evaluate the economic and clinical benefits associated with a 1% reduction in HbA1c (relative to no change in HbA1c) in Malaysian A1cHieve patients. The 35-year time horizon, complication rates and the treatment options were projected over a 35-year time horizon using the published CORE Diabetes Model. At baseline, the mean (standard deviation) age of the cohort was 54 years (11 years), duration of diabetes was 12 (8) years, HbA1c was 10% (1.8%) and body mass index was 28.1 (5.1) kg/m². HbA1c was reduced by 1.5% in the active group versus the control group. Costs were reported in 2011 Malaysian Ringgit (MYR) and converted to 2011 Euros (EUR) using the mid-market exchange rate on June 30, 2011. Future costs and clinical outcomes were discounted annually at a rate of 3.5%. **RESULTS:** A 1% reduction in HbA1c was associated with reduced costs of treating diabetes complications and an increase in life expectancy. Undiscounted life expectancy was improved by 0.36 years following HbA1c reduction (7.53 versus 7.17 years). The time alive and free of any diabetes complications increased by 0.40 years in the active group. Over patient lifetimes, improved HbA1c was associated with cost savings of EUR 682 [MYR 3,067] (EUR 2,745 [MYR 13,607]) versus EUR 3,427 [MYR 16,674]). The greatest cost savings were associated with renal complications avoided. **CONCLUSIONS:** The A1cHieve study (an international, prospective, observational study of insulin use within routine clinical practice) in the Malaysian setting. **METHODS:** The analysis was performed using the published and validated CORE Diabetes Model over a time horizon of 35 years with future costs and clinical benefits were discounted at a rate of 3% per annum. At baseline patients had a mean HbA1c of 9.8%, the analysis compared patients outcomes in which HbA1c remained at 9.8% with those with reducing mean HbA1c by 1%; mean HbA1c was assumed to remain unchanged throughout the simulation. Direct costs are presented in IDR (converted to EUR at a rate of 1 EUR = 11,831 IDR). **RESULTS:** A 1% reduction in HbA1c from baseline led to improvements in life expectancy and quality-of-life outcomes. The incremental cost-utility ratio (ICUR) of reducing HbA1c from 9.8% to 8.8% improved life expectancy from 10.07 years to 10.69 years (0.61 years) and quality-adjusted life expectancy from 6.56 quality-adjusted life years (QALYs) to 7.04 QALYs (difference 0.48 QALYs). Mean direct costs were 79,521 IDR (EUR 6,403,196 [EUR 541] lower in the reduced HbA1c group (EUR 242,721,221 [EUR 20,551] vs EUR 236,318,025 [EUR 20,026]), with the biggest driver of cost savings being the reduced incidence of renal complications in the reduced HbA1c group. **CONCLUSIONS:** Baseline glycemic control in patients with diabetes in Indonesia, optimal glycemic control can be improved by lowering HbA1c from baseline was associated with improved life expectancy and quality-adjusted life expectancy as well as being cost-saving over a 35-year time horizon.

**PDB37**

**COST-EFFECTIVENESS OF ADDING Twice-DAILY EXENATIDE TO BASAL INSULIN IN PATIENTS WITH TYPE 2 DIABETES IN SCOTLAND**

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**INTRODUCTION:** In T2D, HbA1c is known to cost up over time and the extent to which anti-hyperglycemic agents can maintain initial glucose lowering effect (or durability) varies. HbA1c evolution is an important determinant of future outcomes and costs. Currently there is no consensus on how to model upward drift in HbA1c or the durability of treatments. This study used a discrete micro-simulation model to model HbA1c evolution and assess their impact on economic evaluations of T2D interventions. **METHODS:** We reviewed the ways in which HbA1c evolution has been modeled. Lifetime simulations were performed that compared two hypothetical simulations: (1) initial HbA1c reduction of 1.25% and annual cost of $1,000 and 2) initial HbA1c reduction of 1% and annual cost of $200, using ECHO-T2DM, a validated micro-simulation model. Treatment was intensified in both arms when HbA1c exceeded 7.0%, first by adding basal insulin and subsequently by adding 3× long-acting micro-simulation model. Treatment was intensified in both arms when HbA1c exceeded 7.0%, first by adding basal insulin and subsequently by adding 3× daily short-acting insulin. **RESULTS:** Four different approaches were identified: (1) no HbA1c evolution, (2) constant increase in HbA1c, irrespective of treatment, (3) constant treatment-specific increase in HbA1c; and (4) non-linear increase in HbA1c, irrespective of treatment. The simulations confirmed that these assumptions are critical. While the incremental life-years (LYs) and Quality-Adjusted LYs (QALYs) were similar in the first 10 years, the results diverged for long-term evaluation. The ICER ranged from $1,313 to $32,444 in (2) and $4 could not be implemented in this version of ECHO-T2DM. **CONCLUSIONS:** Assumptions used to model HbA1c evolution have important consequences for estimates of cost-effectiveness, a 10-fold difference in the ICER in this hypothetical example, and should be addressed with sensitivity analysis in health economic evaluations.

**PDB38**

**THE IMPORTANCE OF HbA1C EVOLUTION IN COST-EFFECTIVENESS MODELING OF TYPE 2 DIABETES MELLITUS (T2DM)**

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**OBJECTIVES:** To investigate the economic benefits of a 1% reduction in HbA1c in comparison with baseline levels in patients with type 2 diabetes in Algeria enrolled