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 study was a retrospective, cross-sectional, observational, consecutive patient analysis at the beginning and at the end of the study as well as baseline demographics of the patient cohort (subgroup analysis of the German cohort of PREDICTIVE study) were used. The perspective was the health care services payer over life time (35-years). Costs were reported in 2011 Malaysian Ringgits (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 from 0.40 years in the control group to 0.52 years in the reduced HbA1c 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 demonstrated that improved control is associated with cost savings of EUR 682 as a result of reduced 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-adjusted life expectancy. Reducing HbA1c from 9.8% to 8.8% improved life expectancy from 10.07 years to 10.69 years (difference 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 IDR 6,403,196 (EUR 541) lower in the reduced HbA1c group (IDR 242,721,221 [EUR 20,551]) versus IDR 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 Malaysia is sub-optimal, however, a 1% reduction in HbA1c from baseline was associated with improved life expectancy and quality-adjusted life expectancy as well as cost-saving over a 35-year time horizon.

**PDB40**

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

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**INTRODUCTION:** In T2DM, HbA1c tends to drift 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 in economic evaluations. Recent developments in modeling HbA1c evolution and assess their impact on economic evaluations of T2DM interventions. METHODS: We reviewed the ways in which HbA1c evolution has been modeled. Lifetime simulations were performed that compared two hypothetical interventions (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 3x daily short-acting insulin. RESULTS: 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 Life-Years (QALYs) were similar in the first two approaches, the best approach for (1). Costs and QALY gains were largest in (3), which allowed HbA1c to drift apart over time in each arm, and smallest in (2) (because treatment intensification reduced the HbA1c gap). The incremental cost-effectiveness ratio (ICER) ranged from $3,274 to $12,444 in (3) to $32,444 in (2). (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.

**PDB41**

**LONG-TERM EVALUATION OF THE ECONOMIC IMPACT OF REDUCING HbA1C BY 1% IN TYPE 2 DIABETES PATIENTS IN ALGIERIA**

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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...