PDB23

COST-EFFECTIVENESS OF BIPHASIC INSULIN ASPART 30 VERSUS HUMAN PREMIX INSULIN FOR TYPE 2 DIABETES PATIENTS IN A POLISH SETTING

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OBJECTIVES: The aim of this analysis was to project the long-term clinical and economic outcomes associated with therapy conversion from human premix insulin to Biphasic Insulin Aspart 30 (BIAsp 30) in type 2 diabetes patients in a Polish setting. **METHODS:** A previously published and validated computer simulation model for diabetes was used to make long-term projections of clinical and cost outcomes based on patient characteristics and treatment effects from a sub-analysis of the PRESENT study (1219 patients). The study analyzed the impact of converting patients receiving human premix insulin (with or without conventional oral medication) to treatment with BIAsp 30 whilst maintaining existing oral therapy. Probabilities of complications were derived from landmark clinical and epidemiological studies and the costs of treating complications in Poland were retrieved from published sources. Total direct costs (complications + treatment costs) were projected over patient lifetimes with both costs and clinical outcomes discounted at 5% per annum. **RESULTS:** Improved glycemic control (HbA1c reduction of 1.82%) and decreased hypoglycemic events associated with BIAsp 30 were projected to lead to fewer diabetes-related complications and an increase in quality-adjusted life expectancy of 0.280 quality-adjusted life years (QALYs) (3.338 ± 0.075 versus 3.058 ± 0.072 QALYs). The reduction in predicted diabetes-related complications resulted in a net saving in direct medical costs of PLN 7,790 (PLN 28,746 ± 1,097 versus 36,536 ± 1,379). **CONCLUSION:** This modeling study indicated that the increased cost of therapy for BIAsp 30 versus human premix insulin will be offset by reductions in the cost of diabetes-related complications leading to a net saving in direct costs. Moreover, BIAsp 30 was associated with improved life expectancy and quality-adjusted life expectancy, making it a dominant treatment option compared to human premix insulin.

PDB24

A PHARMACOECONOMIC COMPARISON BETWEEN ANGIOTENSIN CONVERTING ENZYME INHIBITORS AND ANGIOTENSIN RECEPTOR BLOCKERS IN PATIENTS WITH DIABETIC NEPHROPATHY

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OBJECTIVES: Diabetic nephropathy is the leading cause of end-stage renal disease (ESRD), which is related to substantial clinical and economic burden. The purpose of this study was to compare the efficacy and costs of angiotensin converting enzyme inhibitors (ACEi) and angiotensin receptor blockers (ARBs) in patients with diabetic nephropathy. **METHODS:** We performed a cost-effectiveness analysis based on numbers needed to treat (NNT). Clinical inputs were derived from a meta-analysis of randomized controlled trials investigating the effect of ACEi and ARBs on the incidence of ESRD in patients with diabetic nephropathy. Analysis was by a random-effects model, and results were expressed as relative risks (RR) and NNT. All costs were calculated from a public insurance system perspective, in 2006 Euros. Future costs and clinical benefits were discounted at 3%. **RESULTS:** Compared with placebo or no treatment, ARBs significantly reduced the incidence of ESRD (RR 0.78; 95% CI 0.67 to 0.91; P = 0.001) but not ACEi (RR 0.70; 95% CI 0.47 to 1.06; P = 0.09). The weighted mean lifetime direct cost of ESRD from the perspective of the insurance system was estimated at 146,039 Euros in Greece for a 65 year-old diabetic patient (mean age of the studies' population). The cost to prevent one patient to develop ESRD was 23,678 Euros (95% CI 14,510 to 63,763 Euros; P < 0.01) for patients receiving ARBs and 141,187 Euros (95% CI 29,412 Euros to infinity; P = 0.13) for patients receiving ACE inhibitors. **CONCLUSION:** In diabetic nephropathy, ARBs is the most cost-effective drug class comparing with ACEi, placebo or no treatment. Treating patients with diabetic nephropathy using ARBs reduces the incidence of ESRD and can result in substantial cost savings for the public insurance system.

PDB25

COST-EFFECTIVENESS OF DETEMIR VERSUS NPH FOR TYPE 1 DIABETES PATIENTS TREATED WITH BASAL-BOLUS THERAPY IN A BELGIUM SETTING. A MODELING EVALUATION BASED ON RESULTS FROM A META-ANALYSIS OF THREE CLINICAL TRIALS

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OBJECTIVES: This study assessed the cost-effectiveness of type 1 diabetic patients treated with insulin detemir based basal-bolus therapy versus neutral protamine Hagedorn (NPH) insulin based basal-bolus therapy in a Belgian setting using results obtained from a meta-analysis of three clinical trials. The meta-analysis demonstrated an improvement for detemir over NPH in HbA1c (0.13% points lower), lower body mass index (BMI) (0.21 kg.m-2) and a 4% decrease in hypoglycemic events, when used in combination with either insulin aspart or human soluble insulin. **METHODS:** A published and validated computer simulation model for diabetes (the CORE Diabetes Model) was used to project short-term results obtained from the fixed-effects meta-analysis to estimate long-term clinical and cost outcomes for detemir based basal-bolus therapy versus NPH based basal-bolus therapy using Belgian specific patient characteristics, mortality rates and costs of treating complications derived from published sources. Probabilities of complications were derived from landmark clinical and epidemiological studies. Total direct costs (complications + treatment costs) for each arm were projected over patient lifetimes. Future costs and clinical benefits were discounted at respectively 3% and 1.5% per annum in line with published guidance. **RESULTS:** Short-term therapy benefits associated (improved glycemic control, decreased hypoglycemic events and lower BMI) with detemir based basal-bolus therapy led to fewer diabetes-related complications, and a resulting increase in quality-adjusted life expectancy of 0.173 quality-adjusted life years (QALYs) (7.296 ± 0.111 versus 7.123 ± 0.115 QALYs). Higher therapy costs for detemir versus NPH resulted in an increased lifetime costs/patient of €5,075 (€86,602 ± 1730 versus €81,527) and a resultant incremental cost-effectiveness ratio of €29,288 per QALY gained. **CONCLUSION:** The clinical benefits demonstrated in the meta-analysis for detemir over NPH in basal-bolus therapy predict long-term outcome improvements which reduce diabetes related complications, increased patient quality of life and result in an incremental cost-effectiveness ratio which represents good value for money in Belgium.