LONG-TERM OUTCOMES IN PATIENTS WITH TYPE 2 DIABETES RECEIVING GLIMEPIRIDE COMBINED WITH LIRAGLUTIDE OR ROSIGLITAZONE

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OBJECTIVES: Poor control of type 2 diabetes (T2D) results in substantial morbidity and economic burden to the health care system. Studies of new T2D treatments are rarely designed to assess mortality, complication rates and costs. We sought to estimate long-term consequences of liraglutide and rosiglitazone both as add-on to glimepiride.

METHODS: To estimate clinical and economic consequences, we used the CORE diabetes model, a validated cohort model that uses data from long-term clinical trials to simulate morbidity, mortality and costs of T2D. Clinical data were extracted from the randomized double-blind placebo-controlled LEAD 1 trial evaluating two doses (1.2 mg and 1.8 mg) of a once daily human GLP-1 analog liraglutide, or rosiglitazone 4 mg, added to glimepiride. The CORE diabetes model was calibrated to the LEAD 1 baseline patient characteristics. Survival, cumulative incidence of cardiovascular, ocular and renal events and costs were estimated over three periods: 10, 20 and 30 years.

RESULTS: In a cohort of 5000 patients per treatment followed for 30 years, liraglutide 1 mg, and 1.8 mg had higher survival compared to the group treated with rosiglitazone (15.0% and 16.0% vs. 12.6% after 30 years), and fewer cardiovascular, renal, and ocular events. Cardiovascular deaths after 30 years were 69.7%, 68.4% and 72.5%, for liraglutide 1.2 mg, 1.8 mg, and rosiglitazone, respectively. First and recurrent amputations were lower in the rosiglitazone group compared to both doses of liraglutide (1.4% vs. 0.5% for liraglutide 1.2 mg and 1.8 mg, and rosiglitazone, respectively).

CONCLUSIONS: Overall cumulative costs per patient were lower in both liraglutide groups compared to rosiglitazone mainly driven by the costs of cardiovascular events (US$383,639, $39,239, and $40,401 for liraglutide 1.2 mg, 1.8 mg, and rosiglitazone, respectively). Projected survival and long term outcomes favored liraglutide 1.2 mg and 1.8 mg over rosiglitazone both added to glimepiride.

EXCESS COSTS OF DIABETES MELLITUS AMONG MEDICARE RECIPIENTS IN A SKILLED NURSING FACILITY SETTING

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OBJECTIVES: This retrospective matched cohort study compared resource utilization and costs between diabetic and non-diabetic patients requiring skilled nursing facility (SNF) admissions.

METHODS: Patients with a SNF admission for at least 30 days during 2004 were identified from a 5% random sample of Medicare patients. The "diabetes" cohort consisted of patient with an ICD-9-CM diagnosis on 1 SNF claims. Each diabetes patient was matched (by age, sex, and race) with one patient having no diabetes claims in 2004 and followed for 12 months. The diabetes and non-diabetes cohorts were compared, both overall and within subgroups defined by age, with respect to time to develop co-morbid conditions/co-morbid conditions, home health care resource utilization, and Medicare payments in 2005. Ordinary least squares regression was used to estimate adjusted costs controlling for comorbid conditions (i.e., selected chronic conditions, Charlson comorbidity score).

RESULTS: We identified 204,177 diabetic patients and 78,154 non-diabetic patients in 2004. Following matching, there were 20,158 in each group (45% aged 80+ years, 62% female, 82% white). Relative to matched controls, diabetic patients had higher Charlson comorbidity scores and were more likely to have complications such as congestive heart failure (24.1% vs. 18.1%, p < 0.01) and renal disease (11.2% vs. 6.7%, p < 0.01). On average, diabetic patients had an additional one-half day (p < 0.01) in the hospital over one year of follow-up. Total unadjusted mean Medicare payments were greater among diabetic patients than controls ($26,075 vs. $24,622, p < 0.01), primarily due to differences in inpatient costs. After adjusting for comorbidities, total costs were $969 higher among diabetic patients (p < 0.01). Excess costs were greater among patients <70 years ($1269, p < 0.01) versus those >70 years ($892, p < 0.01). CONCLUSIONS: These findings suggest that diabetic patients in skilled nursing facilities had higher health care costs than non-diabetic patients even after controlling for complications related to diabetes and chronic comorbidity.

IMPROVEMENT IN CARDIOVASCULAR RISK FACTORS AND LONG-TERM OUTCOMES IN PEOPLE WITH TYPE 2 DIABETES TREATED WITH LIRAGLUTIDE OR GLIMEPIRIDE MONOTHERAPY

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OBJECTIVES: Morbidity, mortality, and costs of Type 2 Diabetes (T2D) remain high despite the available efficacious treatment options. New agents have shown improve- ments in cardiovascular risk factors and in some instances show outcomes are unknown, remote to the clinician. Data from randomized controlled trial of liraglutide monotherapy (LEAD 3) was used to determine long-term consequences of treatment with liraglutide, a new OD GLP-1 analog, compared to glimepiride in a simulated 30-year follow-up. The CORE diabetes model, calibrated to LEAD 3 baseline patient characteristics, employed data from long-term studies to project morbidity, mortality and costs of T2D. We simulated clinical and economic consequences of patients receiving liraglutide 1.2mg and 1.8mg compared to glimepiride 8 mg, all as monotherapy, for treatment of T2D. The effect of treatment on A1C, SBP, lipids, weight and risk of hypoglycemia was taken into account. Survival, cumulative incidence of CV, ocular, renal events and costs (dis- counted 3%/yr) were estimated over three periods: 10, 20, 30 years. RESULTS: Simu- lations produced higher survival rates for liraglutide 1.8 mg and 1.2 mg compared to glimepiride after 30 years’ follow-up (16.5%, 13.6%, 7.3%, respectively). Highest difference in fatal events across treatment groups related to end-stage renal disease, although the main cause of death in all groups was associated with CV events. Non-fatal renal and ocular events were lower for both liraglutide doses. Neutrophils that led to a first or recurrent amputation were higher for glimepiride compared to the liraglutide doses. The average cumulative cost per patient was US$9367 higher for glimepiride at year 30, compared to liraglutide 1.8mg, and US$6491 higher than liraglutide 1.2 mg. CONCLUSIONS: The main cost component for all groups was management of CV events. Using the CORE model and data from LEAD 3, projected survival, diabetes complications and costs over the long term favored liraglutide 1.2 mg and 1.8 mg compared to glimepiride in the treatment of T2D.

DAILY AVERAGE CONSUMPTION OF BASAL INSULIN IN PATIENTS WITH TYPE 2 DIABETES

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OBJECTIVES: study compared the daily average consumption (DACION) of insulin detemir (DET), insulin glargine (GLAR) and NPH insulins in patients with T2D in a real-world setting.

METHODS: Patients with T2D (per ICD-9 code 250.x 250.x) newly treated with DET, GLAR or NPH insulin monotherapy were identified in the VeraScan Electronic Data Warehouse (SDI, Plymouth Meeting, PA) from 7/1/2006 to 6/30/2007. A study utilization is that VeraScan data has an open architecture and may not include eligibility data, but filtering techniques were employed to eliminate cohort shrinkage. A patient level DACON was calculated as the number of insulin units dispensed from the first to the second to last prescription in the observation period divided by the elapsed days from the first to last fill. Unpaired t-tests and chi-square