ASSOCIATION OF YOUNGER AGE WITH POOR GLYCAEMIC AND CHOLESTEROL CONTROL IN ASIANS WITH TYPE-2 DIABETES IN SINGAPORE

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OBJECTIVES: Among 1,747 patients with diabetes, 80.64% had an eA1c$8.48$. Patients with poor LDL-c (<4.0 mmol/l) were 4.2 times more likely to undergo the proper monitoring. Well monitored patients had a higher odds of having poor glycaemic control (95%CI:3.78-4.66) while those with Grade 2 or 3 diabetic retinopathy had an odds of having poor glycaemic control (95%CI:3.78-4.66) while those with Grade 2 or 3 diabetic retinopathy had a 3.7% decrease in insulin costs on a patient-day basis, particularly for lengths of stay under 30 days. The increase in pen device use was associated with a marked decrease in insulin costs on a patient-day basis, particularly for lengths of stay under 30 days.

BUDGET IMPACT ANALYSIS OF THE INTRODUCTION OF SAXAGLITIN IN THE TREATMENT OF TYPE-2 DIABETES IN CHILE

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OBJECTIVES: To estimate the budget impact of Saxagliptin introduction as a treatment option for patients with type 2 diabetes mellitus (DM2) compared to the present situation. METHODS: An M$Excel-based budget impact model assuming coverage for one million people. The time horizon was three years and the analysis parameter estimates that of the public health care system in Chile. Pharmaceutical expenses of antidiabetic agents were based on list prices adjusted to co-payments, expressed in 2009 US dollars; the Saxagliptin price was considered to be equal to the average wholesale price. The market share of the different drugs was based upon marketed studies and data provided by Bristol Myers Squibb. The budget impact is reported in terms of annual budget impact, per member per month (PMPM). The cost of pioglitazone and rosiglitazone related cardiovascular events, as well as that of sulphonylureas related hypoglycaemia events were expressed as rates of occurrence per year and cost per occurrence. RESULTS: The estimated net budget impact for the introduction of Saxagliptin was US$ 70,723, US$ 162,885 and US$ 251,574 for the first, second and third year respectively; the cumulative net budget impact was US$ 485,181. PMPM was US$ 0.0055, US$ 0.0136 and US$ 0.0209 each year, respectively. The cumulative impact in the total annual budget for antidiabetics represented an increase of 4.22%. CONCLUSIONS: The budget impact of adding Saxagliptin in a population of one million people to the public health care system in Chile is minimal in patients with DM2. The rise in pharmaceutical expenses derived from introducing Saxagliptin into the formulary is balanced by savings in terms of reduction of adverse events related to thiazolidinediones and sulphonylureas, as well as lowering of insulin requirements in an extended time horizon.

ECONOMIC ASSESSMENT OF CONVERSION TO INSULIN PEN DEVICES IN A LONG-TERM CARE FACILITY CHAIN

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OBJECTIVE: To estimate the economic impact of a pharmacy program to convert insulin utilization from multi-dose vials to pen delivery. METHODS: Purchasing data was obtained at the patient level for basal and short acting insulin from a chain of 75 skilled nursing facilities for the 12 month period ending June 2010. Data included date dispensed, amount dispensed (mls), delivery system (pen or vial) and amount paid to the dispensing pharmacy. The insulin cost per patient-day for each month was calculated as total acquisition cost for the month divided by the number of patient-days. The insulin cost per patient-day for each stay was calculated as the total insulin acquisition cost divided by the length of stay in days. The mean cost per patient-day for each stay subset based on payer type, length of stay and delivery system used (pen or vial) was calculated. RESULTS: There were 2,405 inpatient stays over the 12 month period, 70% covered by Medicare and 29% by Managed Care. Two-thirds of Medicare stays and over three-fourths of managed care stays were 30 days or less. Pen device purchases increased from under 1% to almost 35% of total purchases over the study period during which the insulin cost per day declined from over $10 per patient-day to $4. The cost per day for vial-only stays ($7.84) and combination vial and pen stays ($7.79) were 72% higher than pen-only stays ($4.54), despite a 39% price premium per pen for the pens. Differences in insulin costs were more pronounced under 30 days. CONCLUSIONS: The increase in pen device use was associated with a marked decrease in insulin costs on a patient-day basis, particularly for lengths of stay under 30 days.

A COST COMPARISON OF A BASAL BOLUS REGIMEN (INSULIN GLARGINE AND INSULIN G LisPRO) WITH A CONVENTIONAL PRE-MIXED INSULIN REGIMEN IN TYPE-2 DIABETES PATIENTS – THE GINGER STUDY

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OBJECTIVES: This cost analysis, based on the results of the GINGER study, aimed to investigate whether an intensified insulin regimen is better value than a 2 injection per day conventional regimen. METHODS: GINGER was a 52 week multi-national study comparing 720 patients on insulin for an average of 5 years with poor glycemic control. It compared mealtime rapid-acting insulin glulisine (IGL) and insulin glargine (IG) once daily with 2 injections per day of pre-mixed insulin. Use of IGL/IG resulted in a change of HbA1c from baseline to endpoint of −1.31% and −0.98% for IGL/IG and IGL respectively. Costs were calculated from a UK NHS perspective using MIMS November 2010 prices. Insulin costs were based on the use of IGL/IG (Apidra SoloStar and Lantus SoloStar) and biphasic insulin aspart (BIA, NovoMix 30 FlexPen) prefilled disposable injection devices. It was assumed that a needle, lancet and blood glucose test strip were used for each injection with a 2U priming dose of insulin. Sensitivity analyses replacing BIA by insulin lispro or isophane insulin gave very similar results for both groups. The cost of needles, lancets and test strips was much lower for IGL/IG when compared with BIA. The annual drug cost per patient in IGL/IG was higher than BIA at £692 and £612 respectively with the cost of metformin similar for both groups. The cost of needles, lancets and test strips was much lower for IGL/IG when compared with BIA. The annual drug cost per patient in IGL/IG was £1,105 compared with £957 for BIA. Over the 52 weeks the relative cost of a 1% reduction in HbA1c was £394 for IGL/IG and £1197 for BIA, a 1mmol/l reduction in FPG was £518 with IGL/IG and £635 with BIA. Sensitivity analyses replacing BIA by insulin lispro gave very similar results. CONCLUSIONS: A similar reduction in HbA1c and FPG can be achieved at a relatively lower cost with IGL/IG in comparison with BIA.
OBJECTIVES: As Type 2 Diabetes (T2D) progresses oral hypoglycaemic agents (OHAs) alone fail to maintain blood glucose control and insulin is required. LAPTOP was a large, multinational, randomized controlled trial comparing the effect of intensifying the therapy (IG, Lantus Solostar) to glimepiride and metformin with twice 30% daily. 70% human NPH insulin (Actraphane 30) without any additional OHAs in 371 T2D patients over a 24 week period. IG plus OHAs was significantly more effective in lowering HbA1c (−1.64% vs. −1.31%). A cost minimization analysis was undertaken using LAPTOP data to compare the costs of the 2 regimens. METHODS: The analysis was undertaken from a UK NHS perspective with prices from MIMS November 2010. Cost estimates were based on the use of non-proprietary OHAs and IG and biphasic insulin aspart (BIA, NovoMix 30 FlexPen) prefilled disposable injection devices. It was assumed a new needle, lancet and blood glucose test strip were used for each injection with a 2U priming dose of insulin before each injection. RESULTS: Costs were calculated over the 24 week study period. The total cost of drugs per patient or divisor was significantly lower in BIA ($1,350) and MET ($1,679) compared with BIA ($3,120) and D8 ($2,805) with additional insulin. Mean total healthcare expenditure varied for patients intensifying their therapy also had significantly lower expenditure of $2,472 compared with BIA ($3,120) and D8 ($2,805) with additional insulin. The likelihood of treatment modification and mean total healthcare expenditure varied for patients intensifying their therapy also had significantly lower expenditure of $1,546 (p = 0.0001). After adjusting for covariates, the cost decrease associated with RSG + MET remained statistically significant (cost difference =−$1,248; cost ratio = 0.87, p = 0.0120). Diabetes-related adjusted incremental cost saving of RSG + MET over STG + MET was $599 (cost ratio = 0.83, P = 0.0160). The adjusted work loss cost was also lower for RSG + MET compared to STG + MET (cost ratio = 0.72, cost ratio = 0.93, P = 0.0120).

CONCLUSIONS: Compared to the new DPP-4 agent STG combined with MET, RSG, a thiazolidinedione, combined with MET may save more all-cause and diabetes-related direct healthcare costs and indirect work loss costs.

PDB5

COST OF ALL-CAUSE AND CARDIOVASCULAR DISEASE-RELATED HOSPITALIZATION IN PATIENTS WITH TYPE 2 DIABETES TREATED WITH EXENATIDE BID, SULFONYLUREAS, OR INSULIN: A RETROSPECTIVE ANALYSIS OF THE LIFELINK DATABASE

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OBJECTIVES: To assess the cost of all-cause or cardiovascular disease-related hospitalization in a real world setting among patients with type 2 diabetes prescribed exenatide, a GLP-1 receptor agonist, compared to patients treated with sulfonylureas or insulin. METHODS: Analyses included patients in the LifeLink database initiated exenatide (N = 3,538) or insulin (N = 16,463) between June 1, 2005 and March 31, 2009, without a prescription for the same agent in the prior 9 months. Patients were followed for 12 months. Intention-to-treat analyses of costs of all-cause and cardiovascular disease-related hospitalization were performed. RESULTS: The adjusted work loss costs were estimated using multivariate regression. RESULTS: Mean age (SD) was 53 (8) for patients treated with exenatide (n = 14,400), 55 (12) for patients treated with sulfonylureas (n = 43,242), and 52 (12) for patients treated with insulin (n = 17,627). 43.4%, 53.5%, and 48.9% of patients treated with exenatide, sulfonylureas, and insulin were male, respectively. More patients treated with exenatide were obese (17.0%) than patients treated with sulfonylureas (7.4%) or insulin (10.5%). Patients treated with exenatide were more likely to have hyperlipidemia (57.9%) than patients treated with sulfonylureas (49.9%) or insulin (50.2%). Patients treated with exenatide had significantly lower mean (SD) all-cause hospitalization costs than patients treated with sulfonylureas ($2,725 $1,536, insulin; p = 0.001). Diabetes-related all-cause hospitalization costs patients treated with sulfonylureas ($428 $1,536, insulin; p = 0.001) or insulin ($470 $1,536, insulin; p = 0.001). Patients treated with exenatide also had significantly lower mean (SD) cardiovascular disease-related hospitalization costs than patients treated with sulfonylureas ($428 $1,536, insulin; p = 0.001) or insulin ($470 $1,536, insulin; p = 0.001). CONCLUSIONS: Exenatide treatment was associated with significantly lower costs for all-cause and cardiovascular disease-related hospitalization compared to treatment with sulfonylureas or insulin.

PDB6

ECONOMIC EVALUATION OF GLIMEPIRIDE AND GLIMEPIRIDE/METFORMIN FOR TYPE-2 DIABETES MELLITUS IN MEXICO

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OBJECTIVES: To perform an economic evaluation of the use of glimepiride (GMP) and the fixed-dose combination (FDC) of glimepiride/metformin (GMP/Met) in the treatment of patients with DM-2, from the Mexican Public Health System perspective. METHODS: Two Markov models were designed for reflecting different treatment sequences. Model 1 is for not controlled diet and exercise and metformin intolerant patients, where GMP is compared to gliclazamide (GBC) and thiazolidinedione (T2D). Model 2 is for patients for which the lifestyle change and the mono-therapy with Metformin was insufficient for reaching a level of HbA1c target and a sulfonylurea/Met combination is compared to T2D/Met. The direct costs of the drug treatment and the hypoglycemia episode were calculated. The dosage and efficacy of the oral antidiabetic agents and insulin were established based on the literature review and local practice. The unit costs were elicited from official sources. The time horizon was three years, divided in quarterly cycles. RESULTS: Therapy with GMP was dominant versus the treatment sequences which included a beginning therapy with thiazolidinedione. The savings for three years with GMP or GMP/ Met instead of using T2D ranged from $552.87 to $632.1 per patient. Although GBC was cheaper in cost, it is associated with an increase in the mortality rate and hypoglycemia events. A FDC of GMP/Met caused an incremental cost of 20% versus GBC and metformin separately. The average costs per additional life year obtain by using GMP instead of GBC ranged from US$5,074.9 to US$2,631.4. The probabilistic sensitivity analysis (PSA) of GMP/Met showed a 90% confidence interval for the incremental cost-effectiveness ratio in approximately 90% of the simulations. CONCLUSIONS: Glimepiride mono-therapy (model 1) and the administration of GMP/Met (model 2) represent highly cost-effective health interventions regarding the use of gliclazamide and it is dominant versus the use of thiazolidinedione.