ECONOMIC EVALUATION OF LONG-ACTING INSULIN ANALOGUES FOR THE TREATMENT OF PATIENTS WITH TYPE-1 AND TYPE-2 DIABETES MELLITUS IN CANADA

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OBJECTIVES: To estimate the cost-effectiveness of using long-acting insulin analogues (LAIAs) compared to neutral protamine hagedorn (insulin NPH), in the treatment of diabetes mellitus (DM). This information may assist policy makers in making informed decisions on reimbursement of LAIAs. METHODS: An economic evaluation, from the perspective of a third-party provincial payer, was conducted using the Center for Outcomes Research (CORE) Diabetes Model (CDM). Clinical outcomes (e.g., A1C reduction) were derived from temporary beta-cell analyses. Costs were both discounted at 5%, were obtained from published sources. Sensitivity analyses were performed to test the robustness of results. RESULTS: Type-1 DM (T1DM) – the incremental cost-utility ratio (ICUR) for insulin glargine relative to insulin NPH, was $87,952 per Quality Adjusted Life Year (QALY) gained (difference ($ in cost, $1342; QALYs, 0.039). The ICUr for insulin detemir relative to insulin NPH, was $387,729 per QALY gained ($cost, $4,344; QALYs, 0.011). Type-2 DM (T2DM) – the ICUr for insulin glargine relative to insulin NPH, was $62,492 per QALY gained ($cost, $4,945; QALYs, 0.031). Insulin detemir was more costly ($6,512 per patient) and less effective (0.034 QALYs) than insulin NPH. Results were sensitive to variations of parameters in sensitivity analyses. CONCLUSIONS: Compared with insulin NPH, the use of LAIAs for the treatment of DM was associated with relatively high ICURs.

ECONOMIC EVALUATION OF METFORMIN, METFORMIN + SIBUTRAMIN OR ACARBOSI IN THE MANAGEMENT OF OVERWEIGHT AND OBESITY DIABETES PATIENTS

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OBJECTIVES: Diabetes mellitus is an important public health problem in Mexico. The illness progression is faster when the patient also presents obesity or overweight. The objective of this study was to evaluate the clinical and economical impact of the use of metformin, sibutramine versus metformin and acarbose as a treatment for weight loss in patients with DM-2 with obesity and/or overweight, in Mexico. METHODS: Cost-effectiveness analysis by decision tree of the pharmaceutical treatments for weight loss in patients with diabetes mellitus II from the health service provider and patient perspective considering a temporary hospitalization and treatment were $2.9 billion in 2003. This study expands on previous work, analyzing race and gender differences in insurance and out-of-pocket costs per patients with a primary diagnosis of diabetes in Tennessee. We hypothesize that non-Hispanic Blacks, especially men, bear a disproportionately higher burden compared to Non-Hispanic Whites. METHODS: This study utilized inpatient and outpatient data from the 2003 Tennessee Hospital Discharge Data System. Chi-square and t-tests were performed to analyze significant differences in key demographic and clinical factors among race and gender groups. Multivariate regression models were developed to estimate log inpatient and outpatient charges for all hospitalizations with a primary diagnosis of diabetes (ICD-9 code: 250). RESULTS: Analyses revealed significant differences in comorbid presentations across race-gender groups and other factors contributing to charges. Overall, women were significantly more likely to present with hypertension than men, although percentages for blacks were higher (all p < 0.001). Ulcers were more prevalent in men versus women (all p < 0.001), highest among white men (significant only for outpatient events, p < 0.001), and resulted in significantly higher (48%; p < 0.0001) inpatient charges. As predicted, hospital charges were highest among blacks, although black males had significantly higher (20.2%, p < 0.0001) mean inpatient charges and black females had significantly higher (6.8%, p < 0.0001) outpatient charges. CONCLUSIONS: To improve the quality of care in diabetes, it is critical to identify disparities in treatment. The analysis revealed that a significantly higher percentage of men suffered ulcers, which significantly increased inpatient charges. As such, gender-targeted education may be warranted to reduce the incidence of diabetic ulcers. In addition, increased prevention efforts may be necessary in black communities to reduce avoidable hospitalizations.