ECONOMIC IMPACT OF AUGMENTATION THERAPY IN TYPE 2 DIABETES PATIENTS INITIATED ON SULFONYLUREAS: A RETROSPECTIVE COHORT ANALYSIS

Kalsekar ID, Latran M
Butler University, Indianapolis, IN, USA

OBJECTIVE: To assess the economic impact of augmentation therapy [thiazolidinediones (TZDs) or metformin] in type 2 diabetes patients who initiated mono-therapy with sulfonylurea.

METHODS: A retrospective cohort design was used to meet the study objective. Patients newly diagnosed with type 2 diabetes and initiating therapy with sulfonylurea were identified during the four-year period (1998–2001) from a Medicaid claims database. These patients were then followed till they augmented therapy by adding another oral hypoglycemic agent (TZDs or metformin) to their regimen. The date of the first prescription for a TZD or metformin was treated as the index date and type 2 diabetes-related costs in the 12-month follow-up period were assessed. Semi-logarithmic OLS models were used to estimate the impact of therapy on total diabetes-related costs. Costs were also examined separately in terms of diabetes-related Emergency Room (ER)/hospitalization, outpatient and prescription costs using appropriate two-part models. RESULTS: The final cohort consisted of 298 type 2 diabetes patients who initiated mono-therapy with sulfonylurea and augmented with either TZDs (n = 96) or metformin (n = 202). Results of the semi-log OLS model indicated that patients augmenting sulfonylurea therapy with metformin incurred 33.27% lower total diabetes-related costs as compared to those augmenting therapy with TZDs (p < 0.001). Further breakdown of the costs indicated that there were no significant differences in diabetes-related ER/Hospitalization and outpatient costs between the two groups. However, diabetes-related prescription costs were 45.47% lower for patients augmenting with metformin as compared those augmenting with TZDs (p < 0.001). CONCLUSION: Patients with type 2 diabetes initiated on monotherapy with sulfonylureas and augmenting with metformin have significantly lower type 2 diabetes-related costs as compared to those augmenting with TZDs, primarily due to lower prescription costs. The study results can aid in making important formulary decisions and developing treatment algorithms for management of type 2 diabetes.

MODELLING LIFETIME HEALTH CARE COSTS AND CONSEQUENCES OF A NURSE-LED MULTIFACETED INTERVENTION TO IMPROVE THE MANAGEMENT OF PATIENTS WITH DIABETES: RESULTS FROM A COMPUTERIZED SIMULATION MODEL

O'Reilly D1, Clarke P1, Hopkins R1, Hux J1, Tarride JE1, Blackhouse G1, Goeree RA1
1McMaster University, Hamilton, ON, Canada; 2University of Oxford, Headington, Oxford, UK; 3Institute for Clinical Evaluative Sciences, Toronto, ON, Canada

The increased costs of intensive early management of diabetes may be offset by a reduction in future complications. As complications of diabetes have been shown to significantly contribute to health care costs, computer simulation models are increasingly being used to evaluate the likely impact of interventions on the progression of diabetes as well as the health and economic consequences interventions are likely to accrue over a patient's lifetime. OBJECTIVES: Stimulate long-term costs and consequences of an observational 18-month nurse-led multifaceted diabetes management program aimed at the patient, the health care providers and the health care system. METHODS: We conducted a cost-effectiveness analysis based on patient-level data from an observational study involving 404 patients with diabetes. Changes in intermediate outcomes (e.g. HbA1c, blood pressure, cholesterol, and smoking status) at the end of the intervention period were measured and used as risk factors in a Canadian-specific probabilistic discrete-event model to simulate the mean difference in cost and expected quality-adjusted life years (QALYs). Incremental cost-effectiveness ratios were calculated based on the net cost of health care resources associated with the program and on effectiveness estimated over a patient’s lifetime. In the base case, the cost-effectiveness ratio was calculated assuming the effect of the intervention continued for 1 year using a discount rate of 3%. RESULTS: The multifaceted diabetes management program on average reduced HbA1c by 1% (SD 2.3%), systolic blood pressure by 1.4 mmHg (SD 21.3), total to HDL cholesterol ratio by 0.69 (SD 1.30). The incremental cost