PDB24

COST-EFFECTIVENESS OF ROUX-EN-Y GASTRIC BYPASS IN TYPE 2 DIABETES PATIONTS IN CANADA

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OBJECTIVES: Our objective was to estimate the cost-effectiveness of Roux-en-Y Gastric Bypass (RYGB) for treating obese patients with type 2 diabetes mellitus (T2DM) in Canada compared with standard medical management using clinical data from a prospective observational study conducted at an academic medical center in the United States. **METHODS:** Our study used the CORE Diabetes Model which employs Monte Carlo simulation with tracker variables to estimate the lifetime costs and clinical outcomes of RYGB as a treatment for obese patients with T2DM compared with standard medical management. Costs ($CAN 2009) and clinical outcomes were discounted at 5% consistent with Canadian-specific guidelines. RESULTS: The base-case analysis showed that RYGB improved life-expectancy and quality-adjusted life years (QALYs) compared with medical management of obese patients with T2DM at a lower cost and was therefore cost-saving in the base case. The incremental mean discounted life expectancy for RYGB was increased by 0.44 years while QALYs increased by 0.54 years. We doubled the price of RYGB in Canada (from $CAN 6,837 to $CAN 13,674) while holding everything else constant and found that RYGB moved to an incremental cost-effectiveness ratio of $CAN 7,946 placing it well below the threshold value proposed by Laupacis *et al* in 1992 of $CAN 20,000 for a cost-effective intervention worth adopting. CONCLUSIONS: The results of our study suggest that RYGB is cost saving in Canada compared with standard medical management of obese patients with T2DM. Our results were robust to doubling the price of RYGB compared with medical management of T2DM in Canada.

PDB25

THE ECONOMIC IMPACT OF WEIGHT LOSS FOR PATIENTS WITH NEWLY DIAGNOSED TYPE 2 DIABETES MELLITUS (T2DM) IN THE US

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OBJECTIVES: As excess weight adversely affects health outcomes in patients with T2DM, weight loss a fundamental goal of treatment. This study assessed the effect of weight reduction on long-term health outcomes and associated direct medical care costs for patients newly diagnosed with T2DM. **METHODS:** We simulated 500 cohorts of 1000 patients over 25 years using the Economic and Health Outcomes (ECHO)-T2DM model, which captures the development of key micro- and macrovascular diabetic complications. All patients were assumed to increase weight over time (0.51 pounds per year), however, half of the patients were assumed to lose 10 pounds in the first year, so that a 10 pound differential was maintained. Pharmacotherapy was administered according to the 2009 American Diabetes Association Consensus Statement. The effect of weight on T2DM complications was modeled using risk equations from the UK Prospective Diabetes Study, wherein weight is a direct determinant of the risk only of congestive heart failure (CHF). The risks of stroke and myocardial infarction are affected only indirectly via the linkage with CHF and mortality risk is only affected indirectly via macrovascular event history. We assumed that weight change directly affects QALYs, utilizing T2DM-specific utility parameters from the CODE-2 study. Costs and health outcomes were discounted at 3%. **RESULTS:** Ten pounds of weight loss resulted in cost-savings of $613 over an average of 14.6 years, mainly attributable to reductions in CHF incidence. Life years increased marginally; QALYs, however, increased more substantially (0.16). **CONCLUSIONS:** At a willingness-to-pay threshold of $50,000, an intervention would be welfare improving at an incremental cost of up to $8,613 over 14.6 years. As this modeling exercise conservatively excluded a number of benefits of weight loss (e.g., effects via improved lipids and blood pressure and reductions in cancer and other obesity-related illnesses), the true economic value is likely greater.

PDB26

MODELLING COST EFFECTIVENESS OF BEHAVIOUR MODIFICATION PROGRAMMES AND EFFECTS ON MEDICATION: CASE STUDY OF EDUCATION PROGRAMMES IN DIABETES

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OBJECTIVES: 1) To model long-term clinical and cost-effectiveness of the Diabetes Education and Self-Management for Ongoing and Newly Diagnosed (DESMOND) for people with newly diagnosed Type 2 diabetes, versus usual care in the UK; 2) To consider issues arising in modelling education / behaviour modification programmes and how such modelling can support the development of clinical research. **METHODS:** The modelling undertakes a long-term cost-utility analysis with evidence from a 12-month multicentre cluster RCT using the Sheffield Type 2 Diabetes Model. Short and long-term outcomes include Hba1c, lipids and systolic blood pressure, patients' weight and smoking status. The model examines long-term use of therapies including oral hypoglycemic agents. Risk / disease progression models based on UKPDS and other evidence are used to estimate incidence of complications, mortality, costs and health-related quality of life. **RESULTS:** Estimated mean (95% CI) incremental lifetime costs per person (trial based) = ≤ 218 (-≤ 194 to ≤ 758), incremental QALYs = 0.0406 (-0.0283 to 0.1050), and incremental cost/QALY = ≤ 5369. Using current real-world costs, the incremental cost = ≤ 91 (-≤ 321 to ≤ 631) and incremental cost/QALY = ≤2241. Probabilistic sensitivity analysis suggests an 87% likelihood of being cost effective at a ≤20,000/QALY threshold. One-way sensitivity analysis showed results are most affected by effects around weight and smoking, and that DESMOND would likely be cost effective under the conservative assumption of zero effect maintained after year one. **CONCLUSIONS:** Whilst results suggest that DESMOND is cost effective compared to usual care, further modelling should include: whether maintenance of effect via longer-term top-up education is effective, subgroup analysis of those who respond / do not respond, direct modelling of exercise benefits, and adaptation to education programmes such as Dose Adjustment for Normal Eating (DAFNE) in Type 1 diabetes.

PDB27

COST AND EFFECTIVENESS OF EDUCATIONAL STRATEGIES FOR THE CONTROL AND TREATMENT OF TYPE 2 DIABETES (DMT2) AND CARDIOVASCULAR RISK FACTORS (CVRF)

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OBJECTIVES: To estimate and compare costs and effectiveness of different educational interventions at PRODIACOR study. **METHODS:** PRODIACOR is a prospective study (three years), randomized controlled trial, which aims to improve the quality of care for people with type 2 diabetes, optimizing the use of resources and prevent complications, thus reducing morbidity and socioeconomic cost. Includes 4 groups (control, educated patients, doctors educated and educated patients and physicians) of 9 physicians and 117 patients each. Clinical and metabolic changes were recorded in an ad-hoc form (annually and semiannually). Costs and utilization rates for drugs, consultations and practices were obtained from the administrative dataset of the coverage institutions involved. The intervention was approved by independent ethics committee. We performed a descriptive and inferential statistical analysis, verifying differences in means and proportions using t test, ANOVA and Chi square. **RESULTS:** *Clinical and metabolic:* although there was improvement of several registered indicators no significant differences in the percentage of patients at goal between groups were found. *Cost:* in the period before the intervention the total average expenditure for each patient was AR$ 1,848 (66% drugs, 26% practices and 8% consultations). No significant differences between all the intervention groups were found. After the first year all groups significantly increased total average expenditure (Group 1: 259%; Group 2: 39%, Group 3: 59%, Group 4: 61%). The costs then progressively decreased in all groups and at the third year the total average expenditure was AR $1551 (72% drug, 26% practices and 2% consultations). Group 3 had the lowest average total expenditure (AR$ 925), followed by Group 4 (AR$ 1264), Group 1 (AR$ 1881) and Group 2 (AR$ 2133). **CONCLUSIONS:** Although preliminary, these results suggest that educational interventions improve clinical indicators and reduce direct medical costs associated with diabetes with a satisfactory cost-effectiveness.

PDB28

COST-EFFECTIVENESS OF SOMASTATIN ANALOGUES FOR THE TREATMENT OF ACROMEGALY IN COLOMBIA

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OBJECTIVES: To evaluate the cost-effectiveness of somatostatin analogues in the treatment of acromegaly in Colombia. **METHODS:** Cost-effectiveness of both somatostatin analogues, octreotide and lanreotide, was estimated using decision analysis. Response to treatment in the model was derived from a recent meta-analysis. Costs and resource utilization included only data directly related to the treatment of the acromegaly during the 2 year time-horizon in Colombia. Transition probabilities were calculated based on the efficacy results from clinical trials pooled in the meta-analysis. The model's effectiveness outcome is patients who are successfully controlled in terms of their Growth Hormone <2.5 mcg. **RESULTS:** Using the estimated prevalence of the disease in Colombia, a hypothetical cohort of 2,503 subjects with acromegaly with an average age of 50 years was included in the model. The total annual medical treatment costs for the octreotide group were COP$ 162,802 million, compared to the total annual costs for the lanreotide group of COP$ 214,047 million. In the octreotide arm 65.3% of the patients and in the lanreotide arm 59.5% of the patients were successfully controlled. The estimated number of deaths was 164 and 168 for the groups with octreotide and lanreotide, respectively. Because the costs are lower and the effectiveness is higher for octreotide in comparison with lanreotide, octreotide is more cost-effective (dominant). Probabilistic sensitivity analyses were consistent showing octreotide as the most cost-effective option. . **CONCLUSIONS:** Costs and effects of octreotide compare favorably to those of lanreotide in the treatment of acromegaly in Colombia. Sensitivity analysis showed that despite the uncertainty in cost-effectiveness ratio this result is robust.

PDB29

COST/EFFECTIVENESS STUDY OF THIAZOLIDINEDIONES IN DIABETIC MEDICATION~A TAIWANESE EMPIRICAL STUDY

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OBJECTIVES: Using Taiwan's National Health Insurance (NHI) claims data, we took thiazolidinediones (TZDs) as study target to explore its impact on medical expenditure and prognosis of diabetic patients. **METHODS:** This is a population-based retrospective cohort study on diabetic patients during 2000~2006. Our study population was those who had a diagnosis of diabetes and took oral hypoglycemic agents. We classi-