COST AND OUTCOMES OF THE DIABETES CLINIC IN A COMMUNITY HOSPITAL, MAE HONG SON, THAILAND

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OBJECTIVES: To determine cost and outcomes of a diabetes clinic in a community hospital of Mae Hong Son Province in 1999. METHODS: A retrospective study, from the provider viewpoint, was performed by collecting three groups of annual operating cost; labour cost (LC), drug and medical supplies cost (MC), and diagnostic cost (DC). The clinic contained of behavioral group counseling about diet, drug, exercise and foot-care by nurses, pharmacist and self-help group. At the end of the study, outcomes were evaluated by the number of patient who achieved in the fasting blood sugar (FBS) of 126 mg/dl. without any severe complications and/or the number of patient with adherence for follow up visits. RESULTS: Results showed that total operating cost of diabetes clinic was €193,244.64 Baht with a proportion of LC:MC:DC of 2.36:5.55:1. Drug and medical supplies accounted for more than 60% of total operating cost. The unit cost of diabetes clinic was €193.24 Baht per patient. In total, 62 patients with FBS control and 71 patients with adherence for follow-up were found from all of 100 diabetic patients in the clinic. A total of 33 successful patients with both FBS control without severe complications and having adherence were found. Uncontrolled FBS and loss from follow up were the failures that affected to the cost through drug and medical supplies overuse and the number of unwanted admissions. CONCLUSIONS: Drug and medical supplies accounted for the highest cost of the clinic. To reduce cost of drug and medical supplies overuse and increase the outcomes of the clinic, drug and self-care personal counseling by pharmacist could be a good procedure for solving the problem. To evaluate the efficiency of the clinic, cost and outcomes were the needed indicators.

ECONOMIC VALUE OF ACARBOSE TREATMENT IN PERSONS WITH IMPAIRED GLUCOSE TOLERANCE (IGT) FOR THE GERMAN HEALTH CARE SYSTEM

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OBJECTIVES: The study TO Prevent Non-Insulin Dependent Diabetes Mellitus (STOP-NIDDM) demonstrated that acarbose therapy over 3.3 years delays or prevents the development of type-2 diabetes as well as cardiovascular (CV) events in persons with impaired glucose tolerance (IGT). The aim of the present study is to assess the economic advantage of these clinical results for the German health care system. METHODS: A cost-effectiveness-analysis from the German payers' perspective was conducted. The outcome measure was cost per patient or delayed. Analyses were conducted for the total population (acarbose (N = 682) and placebo (N = 686)), and subgroups at high risk for CV disease, for diabetes or both. Cost data were derived from published sources and adjusted to the year 2003 where necessary. Future costs and benefits were discounted by 5%. Acarbose therapy costs and the costs for managing new cases of diabetes, hypertension, and CV events were taken into account. Only direct healthcare costs were considered. RESULTS: For the total population treated over 3.3 years, the incremental cost-effectiveness-ratio was €772 per case of diabetes delayed. For all high-risk subgroups, acarbose treatment was the dominant treatment option: Cost savings per person in the subgroup at high risk for CV disease, for diabetes and for both CV disease and diabetes were €674, €426 and €408 respectively over 3.3 years. These results were robust to sensitivity analyses. CONCLUSIONS: In addition to the significant clinical benefits observed with acarbose therapy in pre-diabetic persons, the cost-effectiveness model estimated potential cost savings to the German healthcare system in those persons at high risk for diabetes and/or cardiovascular events. For the total population, acarbose therapy was estimated to be cost-effective.

COST-EFFECTIVENESS ANALYSIS OF THE DIABETES PREVENTION PROGRAM IN A SPANISH SETTING

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OBJECTIVES: Metformin (plus standard lifestyle advice) or intensive lifestyle changes (ILC) reduced the risk of developing Type-2 diabetes by 31% and 58% versus standard lifestyle advice (control) respectively, in subjects with impaired glucose tolerance (IGT) in the Diabetes Prevention Program (DPP). We adapted a validated, peer-reviewed, published diabetes prevention model to assess the cost-effectiveness of DPP interventions in a Spanish setting. METHODS: The published Markov model simulated 3 states; patients progressed from “IGT” to “Type-2 diabetes” and “death”. Probabilities were derived from the DPP and published Spanish data. Life expectancy (LE) was calculated for each treatment arm. Spanish-specific direct costs of implementing DPP interventions and of diabetes were retrieved from published sources. Total costs/patient (TC) and costs/life-year gained were calculated. LE was discounted at both 0 and 3% annually, while costs were discounted at 3% annually in accordance with current Spanish guidelines. Extensive sensitivity analyses were performed. RESULTS: Both interventions improved LE but increased TC versus control. Mean improvements in non-discounted LE were 0.33 and 0.87 years for metformin and ILC, respectively. TC were increased by €626 and €87846/patient with metformin or ILC respectively, with incremental costs/life-year gained (LYG) (TC and LE discounted 3% annually) of €3913 and €22,523 for metformin or ILC versus control, respectively. Results were most sensitive to the costs of implementing ILC (in particular, the costs associated with dieticians). CONCLUSIONS: Metformin was cost-effective, and the initial costs of pharmacological intervention in prediabetic individuals should not deter healthcare systems from implementing diabetes prevention programs. ILC was towards the upper limits of what is generally considered good value for money in Spain (i.e. <30,000€/LYG). If the role of lifestyle case managers was played by less expensive personnel (e.g. a fitness trainer), the incremental cost-effectiveness ratio for ILC versus control could be as low as 9185€/LYG.

COST-EFFECTIVENESS OF ACARBOSE FOR THE MANAGEMENT OF IMPAIRED GLUCOSE TOLERANCE IN SWEDEN

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OBJECTIVES: To assess the cost-effectiveness of acarbose in the management of patients with impaired glucose tolerance (IGT) in Sweden using the multinational, randomised, placebo-controlled STOP-NIDDM trial, in which patients with IGT treated with acarbose experienced significant reductions in the incidence of type-2 diabetes and cardiovascular (CV) events. METHODS: A disease state transition model using data from...
the STOP-NIDDM trial was developed to replicate the management of IGT patients over the 3-year trial period. The cost-effectiveness measures were cost per patient free of diabetes and cost per month free of diabetes. Analyses were performed for the total trial population and three subgroups: high risk for diabetes, high risk for CV disease and high risk for combined diabetes-CV disease. Total direct costs were calculated using standard sources and published literature. Costs and outcomes were discounted at 3% and extensive sensitivity analyses were conducted.

RESULTS: The incremental cost per patient free of diabetes (month free of diabetes) was 3032€ (136€) and 829€ (35€) for the total study population and high risk diabetes subgroup respectively. Acarbose treatment dominated (i.e. was more effective, less costly) placebo in subgroups at high CV risk and high combined diabetes-CV risk. Deterministic sensitivity analyses showed that the discount rate for costs and the probability of transition to diabetes had the largest impact on results. CONCLUSIONS: Acarbose treatment significantly reduces the incidence of diabetes and CV events in IGT patients. This clinical advantage is expected to lead to reductions in healthcare costs that exceed the acquisition cost of acarbose, thus resulting in overall cost savings in high risk subgroups for CV healthcare costs that exceed the acquisition cost of acarbose, thus reducing the incidence of diabetes and CV events in IGT patients.

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OBJECTIVE: To estimate the cost of intensive treatment of DM T2 patients (insulin therapy and combined treatment with insulin and oral hypoglycemic agents (OHAs)). METHODS: The study was conducted for 24 weeks and included 4 visits. In total, 153 patients in DM T2 were examined (65% women and 35% men). The average age was 56.7 years, the duration of the disease was 9.5 years. The cost of treatment included: the cost of patient observation, daily test monitoring, diagnostic manipulations and consultations and cost of the medicines used. Analysis of expenditures was conducted using the incremental cost estimation method that takes into account only the changing quantities.

RESULTS: All the patients were divided into two groups in dependence on the result obtained: group 1 (85 pts.), with a level of HbA1c < or = 7.0%, and group 2 (68 pts.), with a level of HbA1c > 7% (p = 0.2784). In group 1, 60 patients received insulin monotherapy and 25—a combination of insulins and OHAs. In group 2, these subgroups counted 34 and 34 patients, respectively. The intensive treatment was associated with increases in the patient management costs by USD 0.89/patient in group 1 and USD 0.78/patient/group 2. The cost of treatment increased because of an increase in the consumption of insulin and expenditures on intensive observation. CONCLUSION: The cost of achieving the clinical efficacy criteria in the group where optional glycemic control was achieved turned out to be comparable with the cost of managing patients in the group where this control was not achieved. However, in group 1, a decrease in the cost of treatment of concurrent diseases was noted. Thus, proof was obtained: glycemic control is the major determinant of the development of cardiovascular complications of advanced DM.

A PHARMACOECONOMIC ANALYSIS OF THE USE OF AN INTENSIVE STRATEGY FOR TREATMENT OF PATIENTS WITH DIABETES MELLITUS TYPE 2 (DM T2)

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OBJECTIVE: To estimate the cost of intensive treatment of DM T2 patients (insulin therapy and combined treatment with insulin and oral hypoglycemic agents (OHAs)). METHODS: The study was conducted for 24 weeks and included 4 visits. In total, 153 patients in DM T2 were examined (65% women and 35% men). The average age was 56.7 years, the duration of the disease was 9.5 years. The cost of treatment included: the cost of patient observation, daily test monitoring, diagnostic manipulations and consultations and cost of the medicines used. Analysis of expenditures was conducted using the incremental cost estimation method that takes into account only the changing quantities.

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DIABETES MELLITUS

DIABETES—Quality of Life/Utility/Preference Studies

PDB24

CONTINGENT VALUATION OF AN INHALED DELIVERY SYSTEM FOR INSULIN

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OBJECTIVES: Various delivery systems for inhaled insulin (INI) are under development. However, they will likely be substantially more expensive than subcutaneous insulin (SCI). Whether this increased cost is justified is an important question which can be addressed through Contingent Valuation (CV), a survey technique that elicits individuals’ preferences for non-marketed products in terms of the amount they would be willing-to-pay. The purpose of this study was to assess diabetic (DM) patients’ preference and willingness-to-pay (WTP) for INI. METHODS: A face-to-face CV survey was administered to 96 type-1 and type-2 adult DM patients at St. Michael’s Hospital (Toronto, Canada) who were taking insulin and/or oral antihyperglycaemic drugs. Standardized information about INI and SCI was provided by video, and participant’s WTP was elicited using “payment scale” method, along with socioeconomic and clinical data. Published data was used to define INI attributes. The CV questionnaire received expert review for content validity and was pilot tested with 22 patients. RESULTS: Participants were 51.8 ± 13.4 years old, and had DM for an average of 11.8 ± 7.8 years; 77 had type-2 and 19 had type-1 DM. Significantly more participants (89%) preferred INI over SCI (P < 0.01). The mean monthly WTP for INI ($153.70 ± $99.90) was significantly more than typical SCI cost of $50 (P < 0.01). A greater proportion of type-2 patients (n = 72/77) preferred INI than did type-1 patients (P < 0.001). The mean WTP for INI in type-2 subgroup ($177.10 ± $91.60) was significantly more compared to type-1 ($154 ± $66.6, P = 0.025). Significantly more participants who were not on insulin preferred INI compared to participants using insulin (P < 0.001). Multiple-regression analysis showed strong association between participants’ income and insulin experience and their WTP for INI (P < 0.001). CONCLUSIONS: DM patients prefer INI over SCI and are willing-to-pay significantly more per month than the cost of SCI. Preferences are stronger in type-1 patients DM and those with prior insulin experience.

PDB25

QUALITY OF LIFE IN SUBJECTS WITH AND WITHOUT TYPE-2 DIABETES MELLITUS

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OBJECTIVES: Type-2 diabetes mellitus is a chronic and progressive disease with a negative impact on quality of life. Objectives of the present study were to describe Health-Related Quality of life (HRQOL) in type-2 diabetes mellitus and to compare the health state between diabetic and non-diabetic subjects. METHODS: Type-2 diabetes mellitus patients were selected from a representative sample of the Italian general population aged from 40 to 79 years enrolled in a population based naturalistic prospective survey. We matched each of them by age and sex with a non-diabetic subjects. The EuroQol (EQ-SD), a self-administered generic questionnaire, completed during the enrolment visit, was used to evaluate HRQOL. RESULTS: We analyzed two groups of 157 subjects each (diabetic and non-diabetic group). The mean age was 63.0 years, 94 (59.9) were male. Diabetic patients reported more problems than non-diabetic subjects in the physical sphere, specifically for mobility