PREVALENCE OF RENAL FAILURE IN DIABETES TYPE 2: RESULTS FROM A POPULATION STUDY AND THE BELGIAN ESRD REGISTRY

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OBJECTIVES: To study the prevalence of renal failure in a large sample of type 2 diabetes patients in Belgium and to compare the results with the data of the Belgian ESRD registry. METHODS: A total of 5353 patients, 2530 males and 2823 females, suffering from type 2 diabetes and treated with oral antidiabetic drugs were recruited from the patient files of 345 Belgian general practitioners. Age, gender, body height, body weight, and serum creatinine were recorded. Renal function was calculated using a BMI-corrected Cockroft-Gault formula and the abbreviated MDRD formula. Annual incidence of diabetics starting renal replacement therapy was retrieved from the Belgian national ESRD registry and diabetes prevalence data from the Scientific Institute of Public Health. RESULTS: The mean age was 68 years in females and 64 years in males. The mean body weight was 76.01 kg in females and 84.64 kg in males. The mean serum creatinine was 1.04 mg/dl (range: 0.5–3.0 mg/dl) in females and 1.14 mg/dl (range: 0.5–10.2 mg/dl) in males. Serum creatinine levels had a tendency to rise, both in females and males, from the age of 60 years. Renal function showed a tendency to decrease with age, regardless of the method of calculation. If we compare these results with those found in a Belgian study of the general population, we observed that the 3rd percentile of the renal function estimate in diabetics was almost identical to that of the general population. The annual incidence of ESRD among diabetics type 2 is 2.3 per million inhabitants. Given a prevalence of diabetes of 2.6%, the annual incidence of ESRD can be calculated as 0.088%. CONCLUSIONS: Apparently, there is no excess renal failure in the diabetes population and the decrease in renal function with advancing age is identical in both populations. ESRD among diabetics type 2 is rare.

THE IMPACT ON GLYCEMIC CONTROL OF DIABETIC PATIENTS BY A HOSPITAL PHARMACIST-MANAGED COMPLIANCE CLINIC IN HONG KONG

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OBJECTIVES: Diabetes Mellitus (DM) is a major health care issue potentially causing prolonged ill health and premature death. Good adherence to prescribed diabetic regimen is important to prevent complications but it needs supports from a variety of health care professionals. This study was to explore the non-compliance profile of diabetic patients and to evaluate the clinical benefits by a pharmacist-managed diabetes clinic on the degree of glycemic control through the provision of diabetic information and the implementation of a drug compliance enhancement program for the non-compliant diabetic patients. METHODS: Patients with poor medication compliance were recruited to receive three counseling sessions carried out by a hospital pharmacist. The baseline levels of compliance and hemoglobin A1C (HbA1C) were documented. The responsibility of the pharmacist in the clinic was to educate all patients individually regarding diabetes and its complications and on the proper use of their medicines. Patients were reassessed and reinforced on their levels of compliance and medication knowledge during the subsequent visits. The primary outcome measurement was the change in HbA1C over the 12-month study period. RESULTS: Ninety-five patients were recruited during the 12-month study period with 91 patients completed the study. Improvement of HbA1C was observed as compared with the first clinic visit to the final clinic visit (7.43, b 1.57% to 7.15, b 1.33%, p < 0.005). The mean compliance level improved significantly from 41.3% to 97.8% (p < 0.005). CONCLUSION: The study suggested that pharmacist-managed compliance clinic for non-compliant diabetic patients was effective and had a clinical impact on the glycemic control of patients. Pharmacist can play an important role in implementing and monitoring diabetic therapy along with the multidisciplinary team effort in diabetes management.

AN ANALYSIS OF THE RELATIONSHIP BETWEEN RAPID TRANSITION TO INSULIN, AREA UNDER THE CURVE FOR HBA1C MEASURES ACROSS TIME AND DIABETES-RELATED COMPLICATIONS: A GERMANY POPULATION BASED STUDY

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OBJECTIVES: The objectives were to assess whether rapid transitioning in newly diagnosed type II diabetics from diet and exercise to insulin results in better blood glucose control as measured by HbA1C and reduced diabetes-related complications. METHOD: We used longitudinal data from IMS Mediplus-Germany for newly diagnosed type II diabetics between June 1993 and May 2001 with at least two HbA1C readings. Patients with complications at baseline were excluded. Treatment was categorized as diet and exercise, sulfonylureas, antihyperglycemic drug combinations, insulin or insulin plus another agent. Modifications to treatment were tracked and rapid use of insulin was either initial insulin use or another agent. Modifications to treatment were tracked and rapid use of insulin was either initial insulin use or another agent. Area under the curve (AUC) for HbA1C was calculated and
PHARMACOECONOMIC ANALYSIS

TYPE-2-DIABETES MELLITUS—A MEDICAL AND PHARMACOECONOMIC ANALYSIS

OBJECTIVES: Pioglitazone (PIO), a thiazolidinedione, is a member of a new class of oral antidiabetic agents targeted to treat insulin resistance, the major underlying cause of type 2 diabetes mellitus. Insulin (INS) is believed to be the “gold standard” for achieving optimal glycaemic control. This study is aimed to compare both treatment options with regard to metabolic control and effectiveness under the conditions of daily practice. METHODS: Prospective, controlled, non-randomized observational study where patient selection, allocation to treatment and dose was left at the physicians’ discretion. Quality standards included a central laboratory and a regular monitoring. Primary parameter was the change of HbA1C compared to baseline (Δ HbA1C) where a difference of <0.5% between both arms was set for defining non-inferiority. Analyses were performed under the perspective of the German Statutory Health Care System. RESULTS: A total of 299 and 218 patients in whom PIO or INS was started for insufficient metabolic control were treated for a mean duration of 26 weeks at 51 specialised out-patient diabetic centres. Adjusted Δ HbA1C (±0.72), PIO (±0.42) INS and adjusted Δ Fasting Plasma Glucose (−24.5 mg/dl, PIO; −19.5 mg/dl, INS) were observed. Responder rates (adjusted Δ HbA1C ≥0.6%) were 54.9% (PIO) and 37.2% (INS), respectively. Mean total treatment costs were €1207 (PIO) and €1510 (INS) where mean costs for antidiabetic medication and glucose self-monitoring (diapstick measurement) could be assessed as €646 (PIO) and €774 (INS). Compared to INS, PIO revealed to be more cost-effective (Δ HbA1C/€1000) in the insulin resistant (ATP-III), younger (<64 years) and more obese (BMI <30 kg/m2) individuals with shorter diabetes duration (<5 years). For INS a similar trend could not be observed. CONCLUSIONS: PIO proved to be non-inferior to INS treatment in terms of metabolic control as well as cost-effectiveness. Targeting individual patient profiles achieve best possible outcomes.

DIABETES—Cost Studies

THE COMPACT-STUDY: PIOGLITAZONE VS. INSULIN FOR TREATMENT OF PATIENTS WITH TYPE-2-DIABETES MELLITUS—A MEDICAL AND PHARMACOECONOMIC ANALYSIS

OBJECTIVES: Pioglitazone (PIO), a thiazolidinedione, is a member of a new class of oral antidiabetic agents targeted to treat insulin resistance, the major underlying cause of type 2 diabetes mellitus. Insulin (INS) is believed to be the “gold standard” for achieving optimal glycaemic control. This study assessed the relationship between the time to first complication and AUC, rapid transition to insulin and the number of modifications. A Cox model assessed the relationship of rapid transition to insulin. A regression model explained AUC as a function of rapid transition to insulin and the number of modifications. Adjusted Δ HbA1C (±0.72), PIO (±0.42) INS and Δ Fasting Plasma Glucose (−24.5 mg/dl, PIO; −19.5 mg/dl, INS) were observed. Responder rates (adjusted Δ HbA1C ≥0.6%) were 54.9% (PIO) and 37.2% (INS), respectively. Mean total treatment costs were €1207 (PIO) and €1510 (INS) where mean costs for antidiabetic medication and glucose self-monitoring (dip-stick measurement) could be assessed as €646 (PIO) and €774 (INS). Compared to INS, PIO revealed to be more cost-effective (Δ HbA1C/€1000) in the insulin resistant (ATP-III), younger (<64 years) and more obese (BMI <30 kg/m2) individuals with shorter diabetes duration (<5 years). For INS a similar trend could not be observed. CONCLUSIONS: PIO proved to be non-inferior to INS treatment in terms of metabolic control as well as cost-effectiveness. Targeting individual patient profiles achieve best possible outcomes.

DIABETES DISEASE MANAGEMENT IS ASSOCIATED WITH PHARMACY SAVINGS IN A MANAGED CARE SETTING

OBJECTIVES: To compare pharmacy costs for patients fulfilling HEDIS® for diabetes in an HMO disease management program (DDM) vs. those not in the program. METHODS: We analyzed HMO paid drug costs among 1362 continuously enrolled GHP members with prescription coverage who met HEDIS® criteria for diabetes January 1, 2000 to December 31, 2001. We compared patients in an opt-in “DDM” versus those not enrolled. Multiple linear regression was used to control for the impact of age and gender. RESULTS: Of 1362 patients fulfilling criteria, 1273 (93.5%) were in DDM versus 89 (6.5%) not in DDM. The DDM male/female ratio (Program M/F = 52.4%/47.6% vs. Non-program M/F = 58.6%/41.4%, p = 0.07) was similar and those in DDM were 1.9 years younger than non-DDM (56.0 vs. 57.9 years, p = 0.15). Mean pharmacy PMPM paid claims for DDM vs. non-DDM patients was $92.24 (STD = $99.18) vs $143.98 (STD = $136.78), (t = 4.63, p < .0001). The mean PMPM for DDM vs. non-DDM for insulin for ($20.17 Program vs. $15.49), other diabetes medications ($29.71 vs. $25.39) and diabetes supplies ($4.31 vs. $5.77) were not statistically different. The mean PMPM for non-diabetes medications for DDM patients was of $61.06 (STD = $81.91) vs. a mean PMPM of $123.34 (STD = $131.97). After controlling for age and gender, this difference was statistically significant (p < .0001). CONCLUSIONS: We observed lower pharmacy costs for non-diabetes medicines among DDM participants. These data suggest that diabetes disease management is not necessarily associated with an increase in pharmacy costs.