The impact of starting insulin glargine versus insulin detemir on quality of life (QOL) and treatment satisfaction (TS) in patients with type 2 diabetes inadequately controlled on oral glucose-lowering drugs (OGGLDs)

**OBJECTIVES:** To compare the impact of starting either insulin glargine once-daily or insulin detemir twice-daily on multiple dimensions of QOL in patients with type 2 diabetes who were inadequately controlled on OGGLDs.

**METHODS:** This study was part of a 24-week, multinational, randomised trial in which 964 insulin-naïve patients, aged 40–75 years, with inadequately controlled type 2 diabetes (HbA1c 7.0–10.5%) were randomised to glargine once-daily or detemir twice-daily. For both insulins the dose was titrated every 2 days by 2 U to obtain fasting plasma glucose ≤5.6 mmol/l. For detemir, there also was a pre-dinner target ≤5.6 mmol/l. QOL and TS were assessed using: type 2 Diabetes Symptom Checklist revised (DSC-r), World Health Organization-5 well-being index (WHO-5), Hypoglycaemia Fear Survey (HFS) and Diabetes Symptom Questionnaire (DSQ). Higher scores indicate greater symptom distress, well-being, worries about hypoglycaemia and TS, respectively.

**RESULTS:** Data were analysed using ANCOVA. Results: HbA1c reductions and overall hypoglycaemia were comparable between glargine and detemir (mean ± SD change in HbA1c: −1.46 ± 1.09 and −1.14 ± 1.11, respectively [P = 0.149]). Total diabetes-related symptom distress (DSQ-r) decreased in both treatment groups. There were no significant differences between groups, except for the neuropathic pain subscale (P = 0.027 in favour of glargine). Well-being (WHO-5) increased equally in both groups (+13 ± 21.47 for glargine and +7.54 ± 19.06 for detemir on scale 0–100, P = 0.743). There was a significant difference between the HFS (P = 0.441). TS (DTSQ) improved for both treatment groups, but significantly more for glargine than for detemir: Mean ± SD increase in total satisfaction score (scale 0–36): 5.1 ± 6.6 for glargine and 4.1 ± 8.8 for detemir (P < 0.001). CONCLUSIONS: Initiating insulin glargine or detemir twice-daily in patients with inadequately controlled type 2 diabetes on OGGLDs resulted in similarly improved glycemic control, associated with an overall positive effect on diabetes symptom distress and emotional well-being. TS improved with both insulins, however, improvement was significantly greater with glargine than detemir.

**Conclusions:** Insulin glargine improved both diabetes symptom distress and emotional well-being more than detemir.
questionnaire regarding their medical care and self-management. Medications (the last 7 days), physical examination and laboratory tests were documented. DDMP participation was validated by the primary physician. Only DM2s with statutorily health insurance and validated DDMP enrolment were included in the analysis (n = 164). Adjusting for confounders (age, sex, education, duration and previous diabetes complications) were conducted. RESULTS: DDMP enrols (n = 89) reported medical examination of eyes and feet and medical advice regarding diet and physical activity more frequently (p < 0.05), received antidiabetic and antihypertensive medicines more often (p < 0.05) and attended diabetes education more frequently (p < 0.005). DDMP enrols measured their blood pressure more frequently (p < 0.05). The groups did not differ regarding Hemoglobin A1c (HbA1c), but of 34 DM2s with values over 7%, only 3.6% of DDMP enrols were receiving no diabetes education whereas this was true for 38.5% of patients not in DDMP. This difference remained significant (p = 0.0129) after adjustment for diabetes duration. CONCLUSIONS: According to our study, health care quality in DDMPs is improved. However, patient self-management of all diabetes must be improved.

**ECONOMIC IMPACT OF COMPLIANCE AND PERSISTENCE TO TREATMENT WITH ANTIDIABETES MEDICATION IN T2DM— A SYSTEMATIC REVIEW**

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OBJECTIVES: Suboptimal compliance and failure to persist with antidiabetes therapies are of potential economic significance. The present research aims to review the recent literature regarding the impact of poor compliance and persistence with antidiabetes medications on the cost of health care or its components for patients with type 2 diabetes mellitus (T2DM).

METHODS: Systematic literature search was conducted in PubMed for relevant articles published in the period between January 1, 2000 and April 30, 2009. Studies describing economic consequence of compliance and/or persistence with pharmaceutical antidiabetes treatment were identified. RESULTS: Of 449 articles corresponding to the primary search algorithm, 12 studies (all conducted in USA) fulfilled inclusion criteria regarding the economic impact of compliance and/or persistence with treatment on the overall cost of T2DM care or its components. Compliance was assessed via medication possession ratio (MPR) in 10 studies, and ranged from 0.52 to 0.93 depending on regimen. Persistence was assessed in one study. Method of analysis per patient having T2DM varied between the studies ranging from $4,570 to $17,338. In 7 studies medication compliance was inversely associated with total health care costs, while in four other studies inverse associations between medication compliance and hospitalisation costs were reported. In one study increased adherence did not change overall health care costs. CONCLUSIONS: Improving medication compliance can lead to reductions of the total health care costs in T2DM, mainly through decrease in hospitalisations. Studies assessing economic impact of compliance with pharmacotherapy in T2DM are limited, and studies investigating cost consequences of compliance are predominantly using MPR as a measure of compliance. Further research is needed in countries other than USA to assess impact of compliance and persistence to pharmacotherapy on T2DM costs in country-specific settings. Researchers should follow definitions of compliance and persistence proposed by the ISPOR Medication Compliance and Persistence Special Interest Group.

**THE UTILIZATION OF ROSIGLITAZONE AND PIOGLITAZONE AFTER THE CARDIOVASCULAR RISK-WARNINGS: WAS THERE A DIFFERENTIAL EFFECT?**

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OBJECTIVES: Meta-Analyses of oral hypoglycaemic agents (OHAs) revealed that Rosiglitazone (Ros) increased the risk of Myocardial Infarction (MI) and Heart Failure (HF), and Pioglitazone (Pio) increased the risk of HF and decreased the risk of MI. The objective of this research is to compare OHA utilization patterns, before and after these publications. METHODS: CareFirst BlueCross BlueShield’s claims were ana- lyzed for patients continuously enrolled from January 2003 through December 2007 who started on mono-Ros or mono-Pio. The “pre-publication” period (November 1, 2006—March 31, 2007) was compared to the “post-publication” period (July 1, 2007—December 1, 2007) using a difference-in-difference approach. Unusual logistic regression (MLR) explored discontinuation; continuation with monotherapy or adding another drug; and switching after adjusting for gender, age, type of insur- ance, history of MI or HF and risk factors for MI and HF. RESULTS: The number of patients taking Rosi users decreased from the pre- (N = 36,788) to post- (N = 19,170, 2.87% period), while monotherapy Pio use was stable across the two periods. The proportion who switched from Rosi to non-Rosi drugs changed from 2.17% in pre-period to 3.88% in post period. Adjusted relative risk was 2.66 (95 % CI 1.059, 6.768). Pio to non-pio drugs switching was 1.48% in pre-period and 1.14% in post period (relative risk of 1.31, 90% CI 0.872, 1.959). CONCLUSIONS: Consistent with prior research, discontinuation of Rosi declined by more than half in the post period. Additionally, Rosi users were three times more likely to switch to a non-Rosi drug in the post period, relative to Pio users. Therefore, our results show that the publications about safety risks had differential impact between the two drugs within therapeutic class.

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Braunschweig L1, Stamen尼斯 S1, Dippel FW2, Schöffski O2

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OBJECTIVES: Suboptimal compliance and failure to persist with antidiabetes medications on the cost of blood glucose levels.

**DIFFERENTIAL EFFECT?**

The utilization of Rosiglitazone and Pioglitazone after the cardiovascular risk-warnings: was there a differential effect? Jan K1, Müller CD1, Lee H1, Wong W2

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**A RETROSPECTIVE DATABASE ANALYSIS OF PERSISTENCE WITH INSULIN IN PATIENTS WITH TYPE 2 DIABETES ADDING MEALTIME INSULIN TO A BASAL REGIMEN**

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OBJECTIVES: Following a commitment to an intensive glucose-lowering regimen that includes mealtime insulin is eventually required by patients taking basal insulin to maintain good glycemic control. The objective of this study was to characterize and examine factors associated with persistence to mealtime insulin. METHODS: Patients with diagnosed type-2 diabetes, with at least 2 prescriptions for mealtime insulin (index medication) between July 2001 and Sept 2006, were identified from a US managed care claims database. Patients were required to have 6 months pre- and 15 months post-index continuous eligibility and at least 2 basal insulin prescriptions in post-index period. Persistence measure #1 was defined by the absence of prescription gap of greater than 90 days, with non-persistence effective the date of the last prescription prior to the 90 day gap. Persistence measure #2 required one prescription per quarter to be persistent at 12 months; persistence at 3 and 6 months were defined similarly. Logistic regression models were used to examine predictors of persistence to mealtime insulin at 12 months. RESULTS: Patients adding mealtime insulin to their basal regimen (n = 4,752; 51% male, mean age = 60.3 years) mostly used insulin analogs (60%) and vial/syringe (87%). The median number of mealtime insulin prescription claims filled per patient was 2, 3 and 4 at 3, 6 and 12 months respectively, with the median time between refills being 75.5 days. Persistence to mealtime insulin was 40.7%, 30.2% and 19.1% using measure #1 and 74.3%, 55.3% and 42.2% using measure #2 at 3, 6 and 12 months respectively. Additional predictors of persistence at 12 months included age, copayment, mental health comorbidity and polypharmacy. CONCLUSIONS: Persistence to insulin therapy is poorer than one would anticipate and is significantly lower for human insulin compared to analogs.

**REAL-LIFE PRESCRIPTION PATTERNS SHOW FEWER TREATMENT CHANGES WITH BASAL INSULIN ANALOGS COMPARED TO NPH IN TYPE 2 DIABETES IN THE NETHERLANDS**

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OBJECTIVES: Using the Dutch PHARMO database, the aim was to determine the percentage of type 2 diabetes (T2D) patients starting on long-acting insulin analogues versus NPH; 2) compare previous insulin experience in patients at 2; and 3) establish the number of patients changing treatment within one year. METHODS: The PHARMO database includes community pharmacy drug dispensing and hospitalisation records.