of end stage renal disease, AMI or stroke are likely to result in substantial cost-offsets.

PDG10

A PHARMACOECONOMIC MODEL OF HbA1c CONTROL IN THE TREATMENT OF TYPE 2 DIABETES

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OBJECTIVE: The UK Prospective Diabetes Study (UKPDS) has proven the relevance of an intensive glucose control policy in type 2 diabetes. UKPDS 35 has provided the evidence of a significant association between diabetes-related complications and level of HbA1c. We used the UKPDS findings to assess the cost-effectiveness of a new fixed-dose combination of metformin and glibenclamide, compared to the conventional strategy of the UKPDS.
METHODS: We developed a Markov model reflecting the management of two diabetic cohorts. The follow-up of a cohort of newly diagnosed 50-year-old patients, similar to the conventional group of the UKPDS, was simulated to follow HbA1c progression over a 10-year period. The second cohort, treated with metformin-glibenclamide, had the same demographic and clinical characteristics at baseline. The reduction rate of HbA1c under metformin-glibenclamide was extracted from a 20-week randomized double-blind trial. The HbA1c level in the metformin-glibenclamide cohort was assumed to progressively converge with that in the conventional group. The occurrence of complications was modeled through risk functions linking HbA1c levels to a conditional probability using UKPDS 23 and 35 results. Results were computed in a French context using a payer perspective. Only medical costs were considered. A sensitivity analysis was performed on the reduction rate of HbA1c under metformin-glibenclamide between 0.8 (best case) and 1.5 (worst case).
RESULTS: Cumulative medical costs amounted to EUR 7,240 in the conventional group versus EUR 7,759 in the metformin-glibenclamide group. A 6.1% decrease in the mean number of events per patient was obtained. The additional cost per life year saved was EUR 13,142 (9,924 (best case), 17,912 (worst case)) and the additional cost per complication-free year was EUR 5,736 (4,312 (worst case), 7,842 (best case)).
CONCLUSION: These results suggest that metformin-glibenclamide is cost-effective in the treatment of type 2 diabetes when compared with conventional therapy.

PDG11

HEALTH AND ECONOMIC OUTCOMES OF A NEW ORAL DIABETES DRUG, PIOGLITAZONE (ACTOS*NF, TAKEDA), IN THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS IN NORWAY

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OBJECTIVE: To assess the cost-effectiveness of pioglitazone (PIO) based combinations versus alternatives for patients with type 2 diabetes in Norway.
METHODS: A published/validated model for type1 diabetes developed by IMIB was adapted to simulate long-term management, health outcomes, resource utilisation and treatment costs of patients with type2 diabetes. The model accounts for most complications in diabetes patients: nephropathy; retinopathy; acute myocardial infarction; angina pectoris; stroke, and amputation. The analysis was done from third-party-payer perspective and costs figured relative to the year 2000. A 5% discount rate was applied and sensitivity analysis was done to test the results.
RESULTS: Pioglitazone PIO 30 mg and metformin (MF) were associated withlonger life expectancy (16.10 years) than sulphonylureas(SU)/MF (15.24) or rosiglitazone (RSG)/MET (15.95). PIO 30 mg/SU and PIO 15 mg/SU are associated with the lowest number of serious complications per 100 patients treated. For every 95 patients treated with PIO 30 mg/MF rather than SU/MF or every 27 patients, respectively, for PIO,30 mg/SU rather MF/SU, one complication is avoided. Combinations of PIO 30 mg/SU, PIO 30 mg/MF and PIO 15 mg/SU are associated with lower mortality than the other treatment combinations available. Thus, for every 34 patients treated with PIO 30 mg/MF rather than SU/MF, one death will be avoided after 15 years of treatment. After discounting both costs and life years at 5%, the above incremental cost-per-life-year is 29,406 Norway Kroner (NOK) in comparison to SU/MF, but still PIO dominates the combination therapy with RSG 8 mg. The picture is similar in the case of PIO 30 mg/SU combination compared to MFSU, where in the undiscounted incremental cost per life year gained, PIO dominates, and the cost per life year gained is raised to 25,992 NOK after discounting at 5%.
CONCLUSION: Pioglitazone-based treatment for patients with type2 diabetes improves survival and reduces complications and therefore represents a cost-effective use of health-care resources in Norway. Nonetheless, these results must be confirmed by long-term observational studies.

PDG12

CLINICAL BENEFITS AND COST-OFFSETS OF COMBINATION THERAPY WITH NATEGLINIDE PLUS METFORMIN VERSUS METFORMIN ALONE IN DIABETES IN THE NETHERLANDS

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OBJECTIVE: The objective of this study is to assess the

long-term clinical benefits and cost-offsets of oral diabetic management with nateglinide in combination with metformin vs. metformin alone in the Netherlands.
METHODS: Data from clinical trials and epidemiological studies have been incorporated in a diabetes model that dynamically relates patient characteristics (demographics, cardiovascular risk factors, diabetes history) and glycemic control to diabetic complications. In the model, a cohort of 10,000 patients was followed over a 30-year period for the occurrence of diabetic complications, its associated treatment costs and mortality. The impact of improved glycemic control (HbA1c and postprandial glucose or PPG) was modeled using results from a clinical trial.
RESULTS: An incremental reduction in HbA1c of 0.7% and of PPG by 1.4mmol/L of nateglinide combination therapy will reduce the number of patients with end-stage renal disease (ESRD), blindness and lower-extremity amputation by 168, 169 and 197 respectively. Another 78 cases of AMI and 38 cases of cerebral stroke will be avoided. This will result in cost-offsets of NLG 6,527 per patient on average, mainly due to ESRD (72%), stroke (6%), amputation (6%) and blindness (5%). The estimated life expectancy increases by 0.33 years (0.2 years if discounted at 4%). The model was robust for changes in critical assumptions.
CONCLUSION: Improved glycemic control as achieved with combination therapy of nateglinide plus metformin will substantially reduce the number of diabetic complications and associated treatment costs over treatment with metformin alone in the Netherlands.

PDG13

ASSESSING PATIENT CARE AND COST OF PATIENTS WITH TYPE 2 DIABETES IN GERMANY—AN ANALYSIS ACROSS DIFFERENT TREATMENT TYPES

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OBJECTIVES: To assess antidiabetic treatment and associated costs of patients with type 2 diabetes in Germany.
METHODS: In a cost-of-illness study based on a representative sample of 809 patients with type 2 diabetes, treatment strategies, overall resource use and cost were investigated for the year 1998. This analysis is centred on the question of how the antidiabetic treatment influences resource use and cost. Taking the perspective of the statutory health insurance, overall direct and indirect healthcare costs for diabetes patients were investigated.
RESULTS: Among all patients, 19% were treated with diet and exercise only, 53% received oral anti-diabetics (OAD) and 28% were insulin recipients. The three treatment groups differed in terms of time since diagnosis of diabetes and complication status, with the most severe cases in the insulin group. Total costs were highest for patients taking insulin and amounted to 4,100 Euro. For patients on diet/exercise and on OAD, total costs were 2242 Euro and 2184 Euro, respectively. Similarly, the cost of medication was also highest for patients taking insulin (1296 Euro) compared to patients on OAD (576 Euro) or diet (484 Euro). The cost of hospitalization and rehabilitation was approximately half the total cost in each group (insulin 2166 Euro, OAD 1105 Euro, diet 1047 Euro). Patients on diet had similar total and inpatient costs as patients on OAD, but had the highest indirect cost. A regression analysis was used to determine the influence of treatment type, time since diagnosis of diabetes, and complication status on total costs. Insulin treatment and complication status had a significant impact ($p < .0001$) on total costs whereas time since diagnosis and other treatment types had none.
CONCLUSIONS: The disease progression is reflected by the change in antidiabetic treatment. The highest costs were observed in patients treated with insulin. These patients also experience more severe complications.

PDG14

AN ASSESSMENT OF THE COST-EFFECTIVENESS OF PIOGLITAZONE (ACTOS*NF, TAKEDA) IN TYPE 2 DIABETES MELLITUS IN DENMARK

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OBJECTIVE: To assess the cost-effectiveness of pioglitazone (PIO) in combination therapy versus usual care for patients with type 2 diabetes.
METHODS: A published, validated model for type1 diabetes mellitus developed by the Institute of Medical Informatics and Biostatistics was adapted to simulate long-term management, health outcomes, resource utilisation and treatment costs of patients with type 2 diabetes. The model accounts for most complications occurring in diabetes patients: nephropathy; retinopathy; acute myocardial infarction; angina pectoris; stroke, and amputation. The analysis was done from a third-party-payer perspective and costs figured relative to the year 2000. A 3% discount rate was applied to costs and outcomes and sensitivity analysis was performed to test the results.
RESULTS: PIO 30 mg in combination with metformin (MF) was associated with a longer life expectancy (14.06 years) than sulphonylureas (SU)/MF (13.49 years) or rosiglitazone (RSG) 8 mg/MF (13.98 years). PIO-based combinations were associated with the lowest number of complications and deaths. For every 38 patients treated with PIO 30 mg/MF rather than SU/MF or every 37 patients, respectively, for PIO 15 mg/SU rather than MEF/SU, one complication was avoided. Also, for every 39 patients