OBJECTIVES: To evaluate the budget impact on the Italian NHS of rosiglitazone based treatment strategies, compared to current therapy. METHODS: Estimated target population for alternative treatments was based on algorithms previously reported*. Three groups of patients were identified to compare alternative treatment strategies: 1) Rosiglitazone vs. SU monotherapy, 2) Rosiglitazone + metformin vs. SU + metformin; and 3) Sildiglitazone + SU vs. insulin alone or in association with SU. The perspective used was that of the Italian NHS. Time horizon was one year. Costs/patient/year considered were: drug acquisition costs; glycemia self-monitoring costs; severe hypoglycaemias costs; and clinical tests costs (according to therapy). Glycemia self-monitoring assumptions were based on AMD (Italian Association of Diabetologists) guidelines. Sensitivity analysis was performed to test the robustness of the assumptions made and their influence on the results. RESULTS: The epidemiological algorithms assigned 19.84% of patients to group 1, 37.8% to group 2 and 42.36% to group 3. Treatment costs/patient/year were: group 1—€459.91 for rosiglitazone vs. €469.06 for SU; group 2—€351.06 for rosiglitazone + metformin vs. €340.20 for SU + metformin; group 3—€749.44 for rosiglitazone + SU vs. €1.258.11 for insulin + SU and €1.832.97 for insulin alone. For a hypothetical cohort of 10,000 patients, total costs were: group 1—rosiglitazone €912,460.31 vs. SU €930,581.45; group 2—rosiglitazone + metformin €2,007,419.76 vs. SU + metformin €2,041,944.92; group 3—rosiglitazone + SU €3,174,623.90, insulin + SU €1,862,082.89 and insulin alone €5,051,558.94. Total costs of Rosiglitazone based therapy were €6,094,503.97 vs. €9,886,168.20 of current treatments. CONCLUSIONS: Rosiglitazone, when compared to alternative treatment, may offer potential savings to the Italian NHS estimated by our model in €3,791,664 every 10,000 diabetics per year. Savings were mainly related to a reduction in costs of glucose self-monitoring and insulin administration.* Drug utilization of glitazones in Italy. ISPOR, 7th Annual European Congress.

COST OF DIABETES MELLITUS TYPE-2 AND SELF MEASUREMENT OF BLOOD GLUCOSE IN GERMANY: A HEALTH INSURANCE PERSPECTIVE

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OBJECTIVES: It is extremely difficult to assess the prevalence, the total costs of Diabetes mellitus and the impact of self measurement of blood glucose (SMBG) for the German health care system. The last sound assessment of the total costs is based on the CODE-2 study, although this study reflects the situation in 1998. METHODS: In this analysis we assessed the total costs of diabetes mellitus type-2 and self measurement of blood glucose (SMBG) for the German health care system in the year 2004, based on the analysis of a retrospective, multicenter trial carried out recently, dealing with the impact of SMBG on long term patient outcomes. Our assessment is based on costs for 18 diabetes related complications (including surgical interventions), follow-up-costs for these complications, costs for outpatient physician services, cost of antidiabetic and additional pharmaceutical treatment and costs for strips and lancets for patients performing SMBG. RESULTS: Overall, yearly costs for the treatment of diabetes mellitus type-2 and its complications amounts to €3489 per patient. This equals to 4.6% to 8.2% of the German health care expenditure, in function of the estimated prevalence of the disease in Germany. The cost difference between the cohort with and without SMBG was not essential (€276 higher costs in the cohort with SMBG). This cost difference should be connected with a reduction of mortality from 4.6 to 2.7% and a reduction of non-fatal endpoints from 10.4 to 7.2% for the Non-SMBG and SMBG group respectively reported in the underlaying study. CONCLUSIONS: From a public health standpoint, prevention of diabetes mellitus or at minimum prevention of its complications by optimizing glucose metabolism should be given highest priority in times of limited resources for health care. SMBG may be a valuable tool to achieve this target.
COSTS ASSOCIATED WITH GLUCOSE CONTROL IN THE NON-DIABETIC CRITICALLY ILL PATIENT

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OBJECTIVES: Hyperglycemia in the critically ill, non-diabetic patient has been shown to negatively affect clinical outcomes. Administration of continuous insulin infusion (CII) to maintain blood glucose (BG) between 80–110 mg/dL has thus become standard of care. The objective of this study was to compare the costs and BG levels associated with glucose control among patients pre- and post-CII protocol implementation in an intensive care unit (ICU).

METHODS: Combination of time-in-motion (TIM) observations and retrospective random chart review to compare glucose control and costs in 2001 and 2004, prior to and after CII implementation respectively. TIM data determined frequency of respective activities per year. Study population included ICU patients >16 years old, mechanically ventilated for >12 hours, with no diagnosis of diabetes. Costs were determined for glucose monitoring with no insulin orders (2001), glucose management with sliding scale subcutaneous insulin (2001), and management with CII protocol (2004) using 2005 US$ from the hospital perspective.

RESULTS: From a total 460 charts in 2001, 49 (11%) were reviewed. From a total 540 charts in 2004, 83 (15%) were reviewed. No differences in age, gender, marital status, or race by year were noted (p > 0.05). Costs (mean ±SD) associated with monitoring and no insulin were $0.16 ±/−0.56 (median = $0.00) per patient day, with subcutaneous insulin $10.08 ±/−4.96 (median = $8.42), and with CII protocol $21.87 ±/−3.90 (median = $22.49). Mean ±/−SD daily blood glucose values were 138 mg/dL ±/−24, 157 mg/dL ±/−32, and 108 mg/dL ±/−10, respectively. Regression analysis demonstrated statistical differences in BG (p < 0.01) by method. CONCLUSION: Costs associated with CII protocol are more than twice the costs of sliding scale subcutaneous orders per patient day, but result in recommended BG values below 110 mg/dL. Impact of costs on hospital policy will be discussed.

ECONOMIC ASSESSMENT OF ADD-ON THERAPY WITH PROLONGED-RELEASE NICOTINIC ACID (NIASPAN®) IN STATIN-TREATED PATIENTS WITH DYSLIPIDEMIA AND TYPE-2 DIABETES IN GERMANY AND SWEDEN

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OBJECTIVES: To evaluate the long-term clinical and economic outcomes of adding Niaspan® to statin treatment in Type-2 diabetes patients with persistently low HDL-c. METHODS Two models were developed to project long-term clinical and economic benefits. The first simulated the evolution of lipid levels with treatment utilising second order Monte Carlo methodology, and the second was designed to calculate the risk of coronary heart disease (CHD) events each subsequent year using standard Markov modeling techniques. Transition probabilities for CHD events were derived from the Framingham risk formulae. Baseline cohort characteristics and simvastatin treatment effects were taken from the 4S clinical trial (diabetes sub-group). Patients with persistently low HDL-c (<1 mmol/L) on statin treatment received either add-on Niaspan® or continued statin monotherapy. Treatment effects of Niaspan® were taken from several clinical studies summarized in the European SPC. Direct costs (2004 Euros) were accounted from a third party payer perspective. Annual discount rates of 5% (Germany) and 3% (Sweden) were applied to clinical outcomes and costs. RESULTS A total of 23.42% of patients were projected to have persistently low HDL-c levels after statin treatment. In these patients mean undiscounted life expectancies of 19.72 years and 19.13 years were projected for the Niaspan® and statin monotherapy arms respectively (undiscounted difference 0.59 years). Improvements in discounted life expectancy were 0.26 and 0.35 years respectively for Germany and Sweden. Lifetime direct medical costs were higher by €6,038 in Germany and €6,170 (SEK 56,308) in Sweden with addition of Niaspan®. Incremental cost-effectiveness ratios based on discounted life expectancies were €23,404 in Germany and €17,538 (SEK 160,099) per life year gained in Sweden for statin plus Niaspan® versus statin monotherapy. CONCLUSIONS In Germany and Sweden, addition of Niaspan® to statin treatment was highly cost-effective in Type-2 diabetes patients with persistently low HDL-c compared to statin monotherapy.