maintained within PDA-defined limits). Simulations were conducted in CORE diabetes model, which is a Markov model built on the base of published clinical trials and encompasses over a dozen of diabetes complications. The model was extensively validated and allows for reliable estimation of costs and outcomes associated with diabetes. Model inputs were adapted to Polish setting. Economic analysis was conducted in lifetime horizon, costs and outcomes were discounted (5% and 3,5%, respectively). Cost acceptability threshold in Poland is 25 511 euro per QALY gained. **RESULTS:** John's QALY is 0,3 lower that QALY of Peter. Treatment of John's complications is 400 euro more expensive as compared to Peter. If willingness to pay (WTP) equals to €7500 euro per QALY, yearly costs of Peter's treatment may be 250 euro higher that John's. If WTP is €15,000, Peter's treatment may be €450 more expensive that John's and if WTP is €25,000 the difference in treatment costs may be as high as 725 euro. **CONCLUSIONS:** DM2 treatment along with PDA recommendations may be cost-effective provided additional costs do not exceed €725 per year.

PDB41

THE COST-EFFECTIVENESS OF GETTING TO GLUCOSE, BLOOD PRESSURE, AND LIPID GOALS IN PATIENTS NEWLY DIAGNOSED WITH TYPE 2 DIABETES MELLITUS (T2DM) AND YOUNGER THAN FIFTY IN SWEDEN

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INTRODUCTION: Good T2DM management requires not only good control of blood glucose, but also blood pressure and serum lipid levels. Although data from the Swedish National Diabetes Registry indicates that more patients have attained recommended levels of these biomarkers over time, a sizable proportion fails to meet all of these goals. **OBJECTIVES:** Assess the cost-effectiveness of intensifying therapy to achieve Swedish-specific treatment goals for HbA1c, systolic blood pressure (SBP), and LDL versus usual care for patients newly diagnosed with T2DM and younger than fifty. **METHODS:** We used the Economic and Health Outcomes (ECHO)-T2DM model, a Markov-based micro-simulation model, to simulate the lifetimes of 500 cohorts of 500 hypothetical patients under two different scenarios: 1) treatment to maintain target goals for HbA1c, SBP and LDL; and 2) treatment to maintain levels observed empirically in Sweden. Pharmacotherapy treatment pathways for the control of hyperglycemia, hypertension and dyslipidemia followed Swedish guidelines and were identical in the two scenarios. The costs of pharmacotherapy and medical events were obtained from Swedish data. **RESULTS:** Treatment to HbA1c, SBP and LDL goals versus treatment to observed levels in Sweden resulted in a small QALY gain (0.13) and medical cost-savings of SEK 3552(€395). Spending on glucose-lowering agents, anti-hypertensives, and lipid-lowering agents was increased by SEK 4136(€460), SEK 4864(€540) and SEK 2390(€265), respectively. Costs due to micro- and macrovascular complications were reduced by SEK 5731(€637) and SEK 9522(€1058), respectively. **CONCLUSIONS:** For patients newly diagnosed with T2DM and younger than fifty in Sweden, intensifying therapy to maintain target glucose, blood pressure, and lipid levels resulted in increased spending on pharmacotherapy, however, spending on micro- and macrovascular events was reduced by a greater degree. These results suggest that allocating more resources toward the attainment of these goals may be welfare-improving.

PDB42

ECONOMIC EVALUATION OF RECOMBINANT HUMAN FSH IN COMPARISON WITH URINARY HMG IN ASSISTED REPRODUCTION IN THE GREEK SETTING

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OBJECTIVES: To compare the cost-effectiveness of Follitropin Alpha (Gonal-F®), which is a recombinant FSH, with a urinary highly purified hp-FSH (Menopur®) used in assisted reproduction in Greece. **METHODS:** A decision tree in combination with a Markov model was constructed to assess the clinical and economical impact of comparators for three consecutives cycles. Transition probabilities for all stages of a treatment cycle (i.e, cancelled ovum retrieval, successful recovery of oocytes etc) were derived from literature and validated by clinical experts. Cost components such as "initial treatment cost", cost of "oocytes", "oocyte pick-up", "fertilization", "transfer", "cryo preservation" and "frozen- thawed embryo transfer (FET)" were derived from the electronic databases of selected private and public clinics. The average number of units used per IVF and the rate of adverse events were based on the literature. Drug prices and reimbursement tariffs, were obtained from the "Government Gazette" and valued at 2011 prices. A probabilistic sensitivity analysis was performed to deal with uncertainty and to construct variability measures. **RESULTS:** There was a statistically significant difference in favor of the r-FSH arm compared to hp-HMG, which is associated with 52 more life births (95%CI: 26-78, p-value<0.001) per 1,000 patients. The cost per life birth was estimated at €16,906 (95%CI: €16,347 – €17,516) and €17,286 (95%CI: €16,740 – €17,845) in the r-FSH and hp-HMG arms, respectively. The cost per IVF was estimated at €4,365 (95%CI: €4,205 – €4,506) in the r-FSH and €3,815 (95%CI: €3,661 – €3,953) in hp-HMG arm, indicating a difference at €550 (95%CI: €365 – €730, p-value<0.001). The incremental cost per life birth (ICER) for r-FSH versus hp-HMG was estimated at €14,540 (95%CI: €10,509 – €21,868), while the incremental cost per life year was estimated at €4,153 (95%CI: €2,038 – €6,233). **CONCLUSIONS:** r-FSH may represent a cost-effective choice compared with a urinary hp-FSH (Menopur®) used for ovarian stimulation in the Greek setting.

PDB43

THE ECONOMIC IMPACT OF WEIGHT LOSS IN PATIENTS NEWLY DIAGNOSED WITH TYPE 2 DIABETES MELLITUS (T2DM) AND YOUNGER THAN FIFTY IN SWEDEN

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OBJECTIVES: This study estimated the effect of weight reduction on long-term outcomes and associated direct medical costs for patients newly diagnosed with T2DM and less than fifty years old in Sweden. **METHODS:** We simulated the lifetimes of 500 cohorts of 1000 patients with characteristics based on the Swedish National Diabetes Register using the Economic and Health Outcomes (ECHO)-T2DM model. All patients were assumed to increase weight over time (0.23 kg per year) however, half of the patients were assumed to lose 5 kg in the first year, so that a 5 kg differential was maintained. The effect of weight on T2DM complications was modeled using risk equations from the UK Prospective Diabetes Study, wherein weight is only a direct determinant of the risk of congestive heart failure (CHF). The risks of stroke and myocardial infarction are affected only indirectly via their linkage with CHF, and mortality risk is affected only indirectly via macrovascular event history. Weight change was assumed to impact QALYs by an amount reported in the T2DM-specific CODE-2 study. Pharmacotherapy was administered according to Swedish recommendations and Swedish cost data was used for medical events and pharmacotherapy. **RESULTS:** A weight loss of 5 kg resulted in cost-savings of SEK 654 (€69) over an average of 17.1 years, mainly attributable to reductions in CHF incidence. Life years increased marginally; QALYs, however, increased more substantially (0.18). **CONCLUSIONS:** At a relatively conservative willingness-to-pay threshold of SEK 250,000 (€26,540), an intervention that resulted in a one-time weight loss of 5 kg would be welfare improving at a cost of up to SEK 45,654 (€4,846) over 17.1 years. As this simulation conservatively excluded a number of other benefits of weight loss (e.g., effects via improved lipids, blood pressure and reductions in other weight-related illnesses), the true economic value is likely greater.

PDB44

AN ECONOMIC EVALUATION OF THE USE OF PIOGLITAZONE IN ITALY USING PROACTIVE

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OBJECTIVES: The aim of this economic evaluation was to test the hypothesis that the clinical benefits observed with pioglitazone in the PROactive Study will lead to economic benefits in terms of reduced macrovascular complications costs and insulin treatment in Italy (the trial compared standard of care + pioglitazone versus standard of care alone). **METHODS:** Two analyses were undertaken; within trial analysis and life-time simulation. The PROactive study provided the clinical and resource utilization data to estimate the cost-effectiveness of pioglitazone in the within trial analysis and was the basis for the secondary analysis which undertook a life time simulation using a modified version of the validated CORE diabetes model. CODE-II utility values were used for the base case. Due to the distribution system of pioglitazone in Italy, two different prices were used; the public price paid by the retail market (€2.11 per patient per day) and the ex-factory price discounted by 25% (€ 0.96 per patient per day). Costs and health gains were discounted at the joint rate of 3%. **RESULTS:** The incremental utility gain in within trial analyses was 0.0191, the incremental event and medication costs in the public price scenario were €842 leading to an ICER of €43,996 per QALY. In the lifetime simulation model the incremental utility gain was 0.149, the incremental event and medication costs in the public price scenario were €3,783 leading to an ICER of €25,426 per QALY. In the ex-factory price discounted by 25% scenario the medication costs were lower leading to the inclusion of pioglitazone in treatment being dominant in both analyses. **CONCLUSIONS:** In the Italian setting reduced costs for macrovascular complications and insulin treatment leads to the inclusion of pioglitazone in treatment being within standard cost-utility thresholds and is therefore an effective use of health resources.

PDB45

COST-EFFECTIVENESS OF TRANSFERRING TYPE 2 DIABETIC PATIENTS FROM NEUTRAL PROTAMINE HAGEDORN (NPH) TO DETEMIR IN PORTUGAL SETTINGS

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OBJECTIVES: To estimate the long-term cost-effectiveness of transferring type 2 diabetes patients to an insulin detemir regimen therapy from a Neutral Protamine Hagedorn (NPH) insulin regimen in the Portuguese routine clinical practice. **METHODS:** A computer simulation model "CORE Diabetes Model" was used to make long-term projections of clinical outcomes and direct medical costs based on short term findings from the European cohort in the PREDICTIVE trial. Therapy conversion to insulin detemir was associated with a reduction in glycosylated haemoglobin (HbA_{1c}) by 0.2% ($p < 0.05$), mean body weight was reduced by 0.7 kg ($p<0.01$) and the incidence of total hypoglycaemia decreased from 11.7 to 3.0 episodes per patient/year ($p < 0.0001$). Events were projected for a time horizon of 30 years. The cost analysis takes the perspective of the Portuguese National Health System. **RESULTS:** Therapy conversion to insulin detemir plus OADs improves life expectancy by 0.056 years and quality-adjusted life years (QALY) by 0.462 compared to NPH insulin plus OAD. The incremental cost effectiveness ratio cost per life years gained and per QALY gained with insulin detemir plus OADs treatment as compared to NPH insulin plus OADs is 3,239€ and 393€ respectively. Type 2 diabetes

complications treatment costs were the main cost driver, accounting for 67% and 77% of total direct costs of the insulin detemir therapy and NPH insulin therapy respectively. Due to a better reduction from baseline of HbA_{1c} the development and progression of complications was delayed, and the cumulative incidence of diabetes complications decreased for insulin detemir plus OADs therapy versus NPH insulin plus OADs therapy. **CONCLUSIONS:** The results of this study demonstrate that insulin detemir is a very cost-effective option for the treatment of type 2 diabetes compared to NPH insulin in Portugal.

PDB46

COST-EFFECTIVENESS OF ANGIOTENSIN CONVERTING ENZYME INHIBITORS FOR THE PREVENTION OF DIABETIC NEPHROPATHY IN THE NETHERLANDS - A MARKOV MODEL

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OBJECTIVES: Type 2 diabetes is the main cause of end-stage renal disease (ESRD) in Europe and the USA. Angiotensin-converting enzyme (ACE) inhibitors slow down the progression of renal disease and therefore provide a renal-protective effect. The aim of our study was to assess the most cost-effective time to start an ACE inhibitor (or an angiotensin II receptor blocker (ARB) if coughing as a side effect occurs) in patients with newly diagnosed type 2 diabetes in the The Netherlands. **METHODS:** Three strategies were compared: treating all patients at the time of diagnosing type 2 diabetes, screening for microalbuminuria, and screening for macroalbuminuria. A lifetime Markov decision model with simulated 50-year-old patients with newly diagnosed diabetes mellitus was developed using published data on costs and health outcomes and simulating the progression of renal disease. A health insurance perspective was adopted. **RESULTS:** In the base-case analysis, the treat-all strategy is associated with the lowest costs and highest benefit and therefore dominates screening both for macroalbuminuria and microalbuminuria. A multivariate sensitivity analysis shows that the probability of savings is 70%. Treating all patients with an ARB would also be a dominant strategy despite the fact that ARBs are a much more expensive alternative. **CONCLUSIONS:** Patients with type 2 diabetes should receive an ACE inhibitor immediately after diagnosis if they do not have contraindications. An ARB should be considered for those patients developing a dry cough under ACE inhibitor therapy. The potential for cost savings would be even larger if the prevention of cardiovascular events were considered.

PDB47

UNDERSTANDING THE IMPLICATIONS OF INCORPORATING THE UKPDS GLYCAEMIC LEGACY EFFECT INTO EVALUATING THE COST-EFFECTIVENESS OF TYPE 2 DIABETES THERAPIES

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OBJECTIVES: The UK Prospective Diabetes Study (UKPDS) reported a persistence in risk reduction of diabetes-related events associated with improved glycaemic control observed between intensive and conventional therapy groups beyond the intervention period. This has important implications for projecting short-term clinical trial results over long-term time horizons. The aim of this study was to reproduce the UKPDS legacy effect and assess the impact on long-term cost-effectiveness. **METHODS:** The Cardiff Type 2 Diabetes Model was initiated with cohort profiles consistent with reported intensive versus conventional control groups within UKPDS; initial HbA1c treatment effects were applied and modelled over time assuming two scenarios: a loss of antihyperglycaemia benefit at year 10 or maintenance of clinical benefit (the legacy effect). Under both scenarios, risk reductions and cost-effectiveness of sulphonylurea (SU) versus insulin were assessed over a 40-year time horizon using UK 2010 costs. Both costs and health benefits were discounted at 3.5%. **RESULTS:** The risk ratio (RR) of any diabetes-related end point predicted by the model was consistent with that reported by UKPDS when incorporating the legacy effect (RR of 0.90 versus 0.91 in the model and UKPDS, respectively). Ignoring the legacy effect resulted in a RR of 0.99 at year 30 and a cost per quality-adjusted life-year (QALY) of £162,400, compared with £22,565 when including the legacy effect. **CONCLUSIONS:** The legacy effect of intensive glucose-lowering strategies has important implications when assessing the cost-effectiveness of new therapies. Failure to include such a legacy effect, as seen in UKPDS, may result in new therapies for managing glycaemic control appearing less cost-effective than they actually are.

PDB48

SHORT-TERM COST-EFFECTIVENESS OF INSULIN DETEMIR VERSUS NPH INSULIN IN INSULIN-NAÏVE SUBJECTS WITH TYPE 2 DIABETES IN SWEDEN

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OBJECTIVES: To estimate short-term cost-effectiveness of insulin detemir versus Neutral Protamine Hagedorn (NPH) insulin based on incidence of self-treated hypoglycaemia and body-weight gain in insulin-naïve subjects with type 2 diabetes in Sweden. **METHODS:** A short-term (one year) cost-effectiveness model was developed in Microsoft Excel® 2003. Hypoglycaemia incidence rates were based on UKHSG data. Relative risk (RR) of hypoglycaemia, weight change and insulin doses were obtained from randomized clinical trial data. Resource use (health care contacts, blood glucose tests) and sick-leave following hypoglycaemia were estimated from survey data. Effectiveness was expressed as quality adjusted life-years (QALYs). Direct and indirect costs were in Swedish Kronor (SEK 1 ≈ €0.10, 2010 values) with unit costs from official sources. Probabilistic sensitivity analyses were performed. **RESULTS:** Treatment with detemir was associated with fewer self-treated hypoglycaemic events compared with NPH (RR: 0.47 [CI 0.25:0.88]) and lower weight gain (mean difference -0.91 kg [CI -1.53;-0.28]), leading to an average gain of 0.011 QALYs per year. Annual costs were SEK6,505 for detemir versus SEK5,008 for NPH with an incremental cost-effectiveness ratio (ICER) of SEK139,665 per QALY gained for detemir versus NPH from a societal perspective. From a health care perspective, annual costs were SEK5,809 for detemir and SEK3,527 for NPH with an ICER of SEK212,909 per QALY gained for detemir versus NPH. **CONCLUSIONS:** Insulin detemir can be considered cost-effective versus NPH insulin in insulin-naïve subjects with type 2 diabetes in Sweden already in the first year of treatment, both from a health care and a societal perspective, based on reductions in self-treated hypoglycemia and superior weight management. Given the non-significant differences in HbA1c control, results of the short-term analyses is not expected to deviate substantially if longer time horizons are applied. Higher pharmacy costs with insulin detemir should not be a barrier to therapy based on these findings.

PDB49

RESOURCE USE IN PATIENTS WITH TYPE 2 DIABETES (T2D) WHO INITIATED EXENATIDE BID (EXBID) OR STARTER INSULIN (INS) THERAPY: 6-MONTH DATA FROM CHOICE

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OBJECTIVES: This analysis of CHOICE presents resource use data from the six months pre and post initiation of adult patients' first injectable therapy for the treatment of T2D (ExBID or INS). CHOICE is an ongoing European 6 country prospective observational study. **METHODS:** Patient data are collected immediately before (baseline), and 3, 6, 12, 18 and 24 months after, initiation of injectable therapy. **RESULTS:** Important baseline differences between the ExBID and INS cohorts prevent direct comparison of outcome data. In the ExBID cohort (baseline n=1177; 6 months n=1073) 78.8% patients self-monitored their blood glucose (SMBG) at baseline; 81.6% at 6 months. Mean (SD) tests/week (past 4 weeks) were 9.28 (7.93) and 8.24 (6.41) respectively. Mean (SD) number of oral antihyperglycaemic medications used was 1.20 (0.75) at baseline and 1.42 (0.73) at 6 months. 93.4% patients had ≥1 contact with a health care professional (HCP) in 6 months before ExBID initiation (mean [SD] 7.75 [7.49] visits); 89.1% in 6 months post initiation (7.55 [7.41]). In the INS cohort (baseline n=1315; 6 months n=1235), 79.8% patients SMBG at baseline; 92.4% at 6 months. Mean (SD) tests/week were 9.91 (8.58) and 13.08 (8.46) respectively. Mean (SD) number of oral antihyperglycaemic medications used was 0.96 (0.76) at baseline and 0.98 (0.77) at 6 months. 93.8% patients had ≥1 contact with a HCP in 6 months before INS initiation (mean [SD] 8.45 [9.19] visits); 93.2% in 6 months post initiation (11.11 [16.75]). Mean doses of both ExBID and INS increased during the first 6 months post initiation. In both ExBID and INS cohorts, between-country variability was found. **CONCLUSIONS:** Mean resource utilisation increased following initiation of injectable therapy. Increases in mean test strip use/week (+32%) and mean number of contacts with HCPs (+31%) were observed in the INS cohort. Respective observations for ExBID cohort were -12.7% and -2.7%.

PDB50

REDUCTION IN COMORBIDITIES AND COST SAVINGS ASSOCIATED WITH BIOCHEMICAL CONTROL IN PATIENTS WITH CUSHING'S DISEASE: A LITERATURE-BASED ANALYSIS

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OBJECTIVES: Hypercortisolism in Cushing's Disease (CD) is associated with significant comorbidities, which improve and in some cases are reversed with biochemical control (BC). The purpose of this study was to capture data describing comorbidity reductions with BC and estimate the potential cost savings associated with reversal. **METHODS:** Comorbidity reductions with BC were identified through a comprehensive literature search using CD AND epidemiology, morbidity, complications, BC and treatment outcomes as search terms. Selected clinical studies detailed the relationship between comorbidity and BC in adults. In the cost analysis, comorbidities were selected if reported in patients achieving BC. Literature-based cost estimates were identified for CD-related comorbidities from the US payer perspective, and inflated to 2010 USD. Cost ranges were reported as the difference between expected comorbidity costs in uncontrolled and controlled patients. Sensitivity analyses were conducted to also include possibly reversible comorbidities. **RESULTS:** Patients with CD experience comorbidities ranging from back pain (86%) to psychosis (1.4%). Of 16 comorbidities identified in this study, seven were certainly reversible in CD patients achieving BC. Hypertension and diabetes mellitus were reversed in 44% and 40% of patients achieving BC at 1 year. Psychiatric illness and nephrolithiasis were resolved in 76% and ~50% of CD patients. In CD patients with reported impaired glucose tolerance and overweight/obesity, 60% and 37% of cases were resolved with BC. The application of cost estimates to prevalence of each reversible comorbidity before BC yielded a total per-patient cost of $19,239-$27,600. With BC, expected comorbidity costs ranged from $12,448-$18,312, representing a cost savings of $6,790-$9,288. Sensitivity analysis including possibly reversible comorbidities (like back pain, osteoporosis and vertebral fractures) produced estimated total cost savings of $10,571-$14,806 (incre-