OBJECTIVES: The study aims to assess the cost-utility of insulin glargine 300U/mL (GLA-300) compared to a biosimilar of insulin glargine 100U/mL (GLA-100) and insulin degludec 100U/mL (DEG-100) in patients with type 2 diabetes mellitus in Croatia. **METHODS:** A cost-utility model was developed to estimate differences in costs and clinical outcomes. The perspective of the analysis was that of a healthcare payer in Croatia within one year time horizon. Main outcome was incremental cost-effectiveness ratio (ICER) expressed in Euro (€) per quality adjusted life years (QALYs). Costs considered were drug costs and costs of treating hypoglycaemia. Insulin dosages used per each of the comparators relied on pooled analysis of EDITION 1-2-3 clinical trials. Efficacy in the model was analysed based on comparators' impact on: incidence of hypoglycaemic events, body mass index and dosage flexibility. Changes of these parameters were cited from EDITION 1-2-3 for comparison with GLA-100, and from network meta-analysis for comparison with DEG-100. Probabilistic sensitivity analysis (PSA) was conducted to test the model robustness. **RESULTS:** In the base case analysis, GLA-300 was associated with incremental QALYs compared to GLA-100 and DEG-100 estimated at 0.0082 and 0.0112, respectively. Total costs associated with GLA-300 were higher than those of GLA-100 (+228.2€) and lower than those of DEG-100 (-182.5€). In comparison with GLA-100, the estimated ICER was 27,798€/QALY, while in comparison with DEG-100, GLA-300 was pharmacoeconomically dominant as it obtains additional health gains with associated cost savings. At the 3xGDP/capita cost-effectiveness threshold, PSA estimated a probability of 61% and 89% for GLA-300 being cost-effective in comparison with GLA-100 and DEG-100, respectively. **CONCLUSIONS:** Based on a reduced incidence of hypoglycaemia and possibility for dose flexibility, GLA-300 is likely to be cost effective in economic and clinical conditions of Croatia in comparison to GLA-100 and pharmacoeconomically dominant in comparison to DEG-100.

PDB80

RE-ANALYSIS OF THE DIABETES PREVENTION PROGRAM 3 YEAR COST-EFFECTIVENESS ANALYSIS (CEA) USING IDENTICAL DATA BUT PROPER METHODS QUESTIONS ITS CONCLUSIONS

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OBJECTIVES: The DPP 3 year trial examined 3 interventions, placebo (PBO), metformin (MET) and individual lifestyle (ILS) added to baseline lifestyle modification advice for diabetes prevention. It found the two active interventions effective, with ILS being more effective. A trial-based cost-effectiveness analysis (CEA) indicated that both ILS and MET were cost-effective. Our work examined the conclusions of that CEA and sought to clarify misleading conclusions. **METHODS:** We reanalyzed the CEA results, adding, as in the original paper, a group LS intervention (GLS) – modelled only (with assumed equal efficacy and reduced costs), not observed. We also examined (as in original) a generic MET alternative, MET25 (where efficacy is assumed identical, but at a cost of only 25% of the branded version), but do not use them in the same analyses as MET 25 dominates MET. **RESULTS:** Instead of presenting ICERs for MET, MET25 and ILS, GLS interventions all vs. PBO as in the original CEA, we used the original CEA data according to a process outlined in Glick (2007), clarifying conclusions by eliminating dominated alternatives. In cases with MET, GLS dominates both ILS and MET with an ICER vs. PBO within acceptable WTP thresholds ($8982/QALY). If GLS is excluded (as it was only a modeled intervention), ILS dominates MET and has an ICER likely to be acceptable ($31,512/QALY). The same qualitative results were seen for MET25. **CONCLUSIONS:** The conclusion of the original CEA was that both ILS and MET were cost-effective. We have shown this to be false, using the exact data as in the original CEA. Based on these data, there is no place for MET in diabetes prevention. We suggest that graphical depictions of results in the cost-effectiveness plane or in a less common cost-disutility plane might have driven home the correct conclusion more clearly than the numerical results.

PDB81

DAPAGLIFLOZIN IS COST-EFFECTIVE COMPARED TO DPP-4 INHIBITORS IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS IN THE NETHERLANDS

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OBJECTIVES: Dutch health care professionals are continuously challenged to deliver the highest standard of care within a fixed budget. This study evaluates the cost-effectiveness of dapagliflozin (a sodium-glucose co-transporter 2 inhibitor) versus dipeptidyl peptidase-4 inhibitors (DPP-4i) when added to metformin+sulfonylurea (SU) in patients with T2DM who are inadequately controlled on metformin+SU alone. **METHODS:** The validated Cardiff Diabetes Model was used with input from literature and publicly available Dutch sources for patient characteristics, treatment effects, utilities and cost. Annual costs of dapagliflozin and DPP4i use were €528 and €517, respectively. The UKPDS 68 risk equations were used to simulate disease progression, incidence of micro and macrovascular complications and mortality. Following Dutch pharmacoeconomic guidelines, a societal perspective was taken, a forty-year time horizon, 6-month cycle length, and discount rates of 4% for costs and 1.5% for effects were applied. **RESULTS:** Dapagliflozin is dominant compared to DPP-4i, presenting both lower costs and higher quality-adjusted life year (QALY) gains with an incremental cost-utility ratio of -€1,974 per QALY gained. The mean number of QALYs gained with dapagliflozin was 0.39, with 15.36 QALYs for DPP-4i versus 15.75 for dapagliflozin. Costs were €53,566 (treatment costs: €24,983) and €52,798 (treatment costs: €24,580) for the DPP-4i and dapagliflozin arms, respectively; a -€768 difference. Deterministic and probabilistic sensitivity analyses confirmed the robustness of the results. The ICER was most favourable for a population with mean baseline HbA1c value of 8.1%, using a HbA1c treatment progression threshold of 8%. **CONCLUSIONS:** Dapagliflozin is a cost-saving and effective alternative to DPP-4i when added to metformin+SU. These results are due to a reduced incidence of micro and macrovascular complications and weight-loss related utility gains with dapagliflozin. This is the first economic evaluation comparing dapagliflozin versus DPP-4i when added to metformin+SU in patients inadequately controlled on metformin+SU alone.

PDB82

RE-ANALYSIS OF THE DIABETES PREVENTION PROGRAM (DPP) 3 YEAR COST-EFFECTIVENESS ANALYSIS (CEA) USING IDENTICAL DATA BUT PROPER QALY CALCULATIONS MAY REVIVE ITS METFORMIN CONCLUSIONS

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OBJECTIVES: The DPP examined 3 interventions, placebo (PBO), metformin (MET) and individual lifestyle (ILS) for diabetes prevention. A 3 year trial of these interventions added to a baseline lifestyle advice found that the two active interventions were effective, with ILS being more effective. A trial-based CEA indicated both were cost-effective. The original CEA erred in 2 ways – it failed to correctly calculate QALYs and it compared all interventions to a common, placebo, alternative. Our work corrected these errors, otherwise using the original CEA data for the societal perspective and a generic MET (MET25) as calculate in the original CEA. **METHODS:** The original CEA failed to gather baseline utilities and took utility measures at the end of each year, assigning that utility to the entire year. Correct methods would average utilities over a given time period, using beginning and end measures. Without baseline measures this cannot be done, but we show results under the assumption that baseline values were equal across treatment arms (arguably reasonable given the randomized allocation). **RESULTS:** If baseline utilities are equal, they drop out of any difference calculation between interventions. There remains a QALY difference, but is related to the terminal year utility differences. Both MET25 and ILS are on the CE frontier. Without the QALY correction, ILS is cost-effective if WTP is higher than $55K. With corrected QALYs, the ICER increases, so that it is possible that ILS is not CE and that MET is (if WTP is less than $68K). **CONCLUSIONS:** The 3 year DPP CEA concluded that both ILS and MET were cost-effective. We have shown this likely to be false, based on original data. Only by correcting the original work's QALY calculation is there (a modest) chance that there is a role for (generic) MET in diabetes prevention from a societal perspective.

PDB83

A SYSTEMATIC REVIEW OF ECONOMIC EVALUATIONS IN NON-INSULIN ANTIDIABETIC TREATMENTS FOR PATIENTS WITH TYPE 2 DIABETES MELLITUS

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OBJECTIVES: The approval of new non-insulin treatments has broadened the therapeutic arsenal, but it has also raised the complexity of choice for the treatment of type 2 diabetes mellitus (T2DM). The objective of this study was to systematically review the literature on economic evaluations associated with non-insulin antidiabetic drugs (NIADs) for T2DM. **METHODS:** The literature search was performed covering Medline, IBECS, Doyma and SciELO databases. We searched for full economic evaluations of NIADs in adults with T2DM applied after the failure of the first line of pharmacological treatment, published between 2010 and 2017 in Europe and North America (US and Canada). We focused on studies that incorporated quality adjusted life years. Two reviewers independently screened abstracts and extracted data following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. An evaluation of the quality of the selected studies was carried out. The results were updated to euros of 2017. **RESULTS:** The review included a total of 57 studies, of which 134 comparisons were made between NIADs. The methodological quality of the studies was adequate. Under an acceptability threshold of 25,000 euros per QALY gained, SLGT-2i were preferable to DPP-4i and sulfonylureas in terms of incremental cost-utility. By contrast, there were no conclusive comparative results for the other two new NIAD groups (GLP-1 and DPP-4i). **CONCLUSIONS:** The heterogeneity of studies' methodologies and results hindered our ability to determine under what specific clinical assumptions some NIADs would be more cost-effective than others. Economic evaluations should be used as part of the health decision-making process, therefore multifactorial therapeutic management strategies should be established based on the patients' clinical characteristics and preferences as principal criteria.

PDB84

HETEROGENEITY OF TREATMENT EFFECT IN THE DIABETES PREVENTION PROGRAM: HIGH BASELINE RISK OF DEVELOPING DIABETES MAY PROVIDE A PLACE FOR METFORMIN IN DIABETES PREVENTION THAT USING OVERALL SAMPLE AVERAGE COSTS AND EFFECTS CONCEALS

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OBJECTIVES: A cost-effectiveness analysis (CEA) of the 3 year Diabetes Prevention Program (DPP) concluded that individual, group lifestyle and metformin (ILS, GLS, MET) interventions were all cost-effective. We reanalyzed that data and showed there was no role for MET or ILS. Heterogeneity of treatment effect (HTE) was not considered. A recent clinical analysis (Sussman, 2015) of DPP used a diabetes risk prediction model, indicating substantial baseline HTE, leaving a possible path for cost-effectiveness for MET in a high risk subgroup (HRS), where its effect was most pronounced. **METHODS:** We used Sussman's 3 year cumulative incidences and a constant rate assumption for developing diabetes to estimate patients with diabetes for years 1 and 2. Those were combined with information on mean QALYs and costs by diabetes status from the DPP to assess cost-effectiveness in the HRS. We also applied a QALY calculation correction to the original CEA that used end of year utilities as if they applied for the entire year, instead of using averages based