Multivariate Cox model adjusted for propensity score and sensitivity analysis confirmed a reduced risk of treatment change for M-Sit versus M-SU with a relative risk of 0.70 [0.62; 0.78] ($p<0.0001$). **CONCLUSIONS:** We observed an approximate two-fold increase in the median treatment maintenance duration in the met-Sit group versus the met-SU group. Given the observational design, confounding factors on the primary outcome cannot be excluded. However, multivariate and sensitivity analyses showed no qualitative change in the principal finding, providing some confidence in the observed difference between the two dual therapies.

PDB19
ASSESSING CONSISTENCY IN A NETWORK META-ANALYSIS TO COMPARE ONCE WEEKLY DULAGLUTIDE VERSUS OTHER GLP-1 RECEPTOR AGONISTS IN PATIENTS WITH TYPE 2 DIABETES

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OBJECTIVES: To demonstrate the use and interpretation of alternative approaches to evaluate and understand inconsistency within network meta-analyses (NMA). **METHODS:** A network meta-analysis was performed to compare the efficacy of once weekly dulaglutide 1.5mg to licensed doses of liraglutide, exenatide, lixisenatide, and albiglutide for the treatment of type 2 diabetes. The primary endpoint was reduction in HbA_{1c}. To allow for potential heterogeneity, networks were stratified by background therapy: add-on to metformin (MET) and add-on to metformin in combination with sulfonylurea and/or thiazolidinediones (MET±SU±TZD). Networks were further stratified by time of evaluation (16-36 weeks and 37-56 weeks). The 'node-splitting' approach and models including treatment-by-design interaction effects (where 'design' refers to the study comparator set), were used to examine inconsistency. **RESULTS:** For the 37-56 week add-on to MET network there were no trials linking to dulaglutide 1.5mg; therefore, a NMA could not be conducted. For the 37-56 week combination network there were no comparisons for which there were both direct and indirect evidence. For the 16-36 week add-on to MET network, there were no comparisons with statistically significant inconsistency in HbA_{1c} reduction in the node splitting model and no significant design by treatment interactions. For the 16-36 week add-on to Met±SU±TZD network there was statistically significant variation between the direct and indirect estimates for the comparison between glargine and placebo and the comparison between glargine with liraglutide 1.80mg. Further sensitivity analyses were conducted removing the LEAD 5 trial (comparing placebo, glargine and liraglutide 1.80mg) from the network. **CONCLUSIONS:** The node-splitting and treatment-by-design interaction models showed no evidence of inconsistency in the 16-36 week monotherapy network. Following removal of the LEAD 5 trial, the 16-36 week combination network also showed no evidence of inconsistency. The analyses were useful in investigating potential inconsistency across the network.

PDB20
MANAGEMENT OF TYPE 2 DIABETES MELLITUS AMONG PATIENTS ATTENDING A PRIMARY HEALTH CARE SETTING IN QATAR: A STUDY ON MEDICATION USE PATTERN AND CLINICAL OUTCOMES

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OBJECTIVES: To evaluate the pattern and clinical outcomes of insulin therapies compared to oral antidiabetic therapies in the management of T2DM. **METHODS:** A retrospective cohort study of patients with T2DM attending the Mesaimeer Primary HealthCare Center in Doha, Qatar. Inclusion criteria included were adult patients with at least with T2DM for 12 months period. Exclusion criteria included were age below 18 yrs, T2DM history less than 1 year, pregnant women and patients with kidney/hepatic disease. Patients' medical records were reviewed for a period of one year. Data collected included socio-demographic profiles, clinical and laboratory data, medication regimens, and regimen cost per year. Data were analyzed descriptively and using Chi-Square test with priori alpha level of 0.05. **RESULTS:** A total of 295 patients with T2DM attending the primary health center were included in the study. Majority of the patients were male (n=210, 71.2%), age between 25-64 years old (n=241, 82.3%) and obese (n=163, 55.3%). Metformin was the most frequently used oral anti-diabetic medication (89.8%), followed by gliclazide (30.6%) and sitagliptin (26.2%). 32.3% of the patients were on insulin at the end of the 12 month follow-up period. The most common treatment regimen at both time points was oral dual therapy (28.3%), followed by oral monotherapy (21.3%) and triple oral therapy (20.2%). The mean HbA1c was 8.0±1.6% at both the beginning and endpoint of the 12 month follow-up period, indicating uncontrolled DM. Those patients receiving insulin-containing therapy had a significantly higher proportion of uncontrolled DM than those who did not receive insulin (98% vs. 81%; p<0.001) at the endpoint of 12-month follow-up period. **CONCLUSIONS:** The findings of this study showed that T2DM patients attending primary health care clinics in Qatar were not achieving glycemic control.

PDB21
PREVENTING THE PROGRESSION TO TYPE 2 DIABETES MELLITUS IN ADULTS AT HIGH RISK: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS OF LIFESTYLE, PHARMACOLOGICAL AND SURGICAL INTERVENTIONS

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OBJECTIVES: Individuals with impaired fasting glucose (IFG) or impaired glucose tolerance (IGT) have an increased risk of progression to Type 2 diabetes mellitus. The objective of this study was to quantify the effectiveness of lifestyle, pharmacological and surgical interventions in reducing the progression to Type 2 diabetes mellitus in people with IFG or IGT. **METHODS:** A systematic review was carried out

and a Bayesian network meta-analysis of log-hazard ratios was performed. The primary outcome of the network meta-analysis was the time to progression to Type 2 diabetes mellitus. Results are presented as hazard ratios and the probabilities of treatment rankings. **RESULTS:** 30 studies were included in the network meta-analysis. There was a reduced hazard of progression to Type 2 diabetes mellitus associated with all interventions versus standard care. The most effective interventions compared to standard care were diet plus pioglitazone (HR 0.17, 95% CrI [0.09, 0.33]), glipizide (HR 0.16, 95% CrI [0.02, 1.62]), diet plus exercise plus metformin plus rosiglitazone (HR 0.20, 95% CrI [0.11, 0.39]), diet plus exercise plus orlistat (HR 0.31, 95% CrI [0.16, 0.61]) and diet plus exercise plus pedometer (HR 0.35 95% CrI [0.11, 1.14]). The least effective intervention was ramipril (HR 0.91, 95% CrI [0.72, 1.14]). **CONCLUSIONS:** Pharmacological and lifestyle interventions are beneficial in reducing the risk of progression to Type 2 diabetes mellitus. Lifestyle interventions require significant behaviour changes and this may be achieved through incentives such as the use of pedometers. Lifestyle interventions alone, whilst beneficial, are unlikely to be as effective as pharmacological interventions alone or in combination with lifestyle interventions. Adverse events and costs of pharmacological interventions should be taken into account when considering potential risks and benefits, and their cost-effectiveness relative to lifestyle interventions.

PDB22
NEW META-ANALYSIS OF PATIENT-LEVEL DATA ON EFFICACY AND HYPOGLYCAEMIA WITH INSULIN GLARGINE OR NPH INSULIN IN TYPE 2 DIABETES MELLITUS (T2DM) ACCORDING TO CONCOMITANT ORAL THERAPY

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OBJECTIVES: Previous meta-analyses show inconsistent results regarding benefits of insulin glargine (GLA) over NPH insulin (NPH) in terms of nocturnal hypoglycaemia. We analysed standardized efficacy and safety outcomes in uncontrolled insulin-naïve subjects with T2DM treated with GLA or NPH according to the oral antidiabetic drug (OAD) to which insulin was added (sulfonylurea [SU] ± metformin [MET]). **METHODS:** Patient-level data from 4 Treat-To-Target (TTT) RCTs (FPG <100 mg/dL) of ≥24 weeks duration were pooled. HbA1c, weight, dose, and hypoglycaemia (overall and nocturnal, plasma glucose <56 mg/dL) were assessed. **RESULTS:** 2,091 subjects were analysed; 49% male, mean age 57.8 years. SU-treated subjects had longer T2DM duration, higher baseline HbA1c, and were less obese than MET+SU-treated subjects. Endpoint HbA1c values were similar for GLA and NPH overall (7.4 vs 7.5%). Subjects adding GLA or NPH to MET+SU had numerically lower weight-adjusted endpoint insulin doses (GLA 0.40 vs 0.44 U/kg; NPH 0.36 vs 0.42 U/kg), with less weight gain (GLA: +1.9 vs +3.7 kg; NPH: +1.8 vs +3.0 kg) versus subjects adding insulin to SU. Hypoglycaemia incidence (overall: odds ratio [OR] 0.79 [95% CI 0.66–0.95]; P=0.011, nocturnal: OR 0.64 [0.51–0.81]; P<0.001) and event rates (overall: rate ratio [RR] 0.78 [0.65–0.93]; P=0.006, nocturnal: RR 0.54 [0.42–0.69]; P<0.001) were significantly lower in GLA-treated subjects versus NPH, irrespective of concomitant OAD. In general, higher hypoglycaemia incidences/rates were observed in the MET+SU groups versus the SU only groups. MET+SU-treated subjects were more likely to achieve HbA1c <7.0% without overall hypoglycemia versus SU-treated subjects (GLA: 24.6 vs 16.1%; NPH: 24.2 vs 13.0%). **CONCLUSIONS:** In insulin-naive T2DM patients from 4 TTT RCTs, GLA significantly reduced overall and nocturnal hypoglycemia risk versus NPH, irrespective of concomitant OAD. Subjects adding GLA or NPH to MET+SU had better efficacy outcomes than those adding to SU only, with slightly increased hypoglycaemia risk.

PDB23
EFFICACY AND SAFETY OF DIPEPTIDYL PEPTIDASE-4 INHIBITORS: SYSTEMATIC REVIEW AND META-ANALYSIS

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OBJECTIVES: To determine the efficacy and safety of dipeptidyl peptidase-4 (DPP-4) inhibitors in type 2 diabetes patients according to published data. **METHODS:** A systematic review of randomized clinical trials (RCT) in MEDLINE, Cochrane, ISI WOK, SCOPUS and clinicaltrials. gov databases was performed. Eligible studies were RCT with a treatment duration of at least 24 weeks evaluating efficacy (HbA1c, fasting plasma glucose-FPG- and weight variation from baseline) and/or safety (hypoglycemia rate) of DPP4 inhibitors (linagliptin, saxagliptin, sitagliptin, vildagliptin) compared with placebo or non-insulin monotherapy or combination, published in English or Spanish until June 2013. A meta-analysis was conducted using a random effects model. Standardized mean difference (SMD) for efficacy variables and relative risk (RR) for safety variable with 95% confidence intervals (CI) were calculated. **RESULTS:** Of the 4,582 publications retrieved, 3,807 were deleted by duplicate review, 581 by title/abstract review and 139 by criteria compliance. Finally, 55 RCT were selected. DPP-4 inhibitor monotherapy was associated to greater reductions in HbA1c and FPG compared with placebo [SMD=-0.60, 95% CI=-0.75; -0.46 and SMD=-0.51, 95% CI=-0.62; -0.39, respectively] while compared with metformin the reductions were lower [SMD=0.28, 95% CI=0.20; 0.26 and SMD=0.36, 95% CI=0.27; 0.44, respectively]. DPP-4 inhibitors added to metformin lowered HbA1c and FPG significantly more than metformin monotherapy [SMD=-0.52, 95% CI=-0.62; -0.41 and SMD=-0.41, 95% CI=-0.51; -0.30, respectively], and achieved a greater decrease in weight and hypoglycemia risk versus sulfonylurea plus metformin [SMD=-0.55, 95% CI=-0.64; -0.45 y RR=0.16, 95% CI=0.11; 0.21, respectively]. Moreover, the addition of DPP-4 inhibitors to sulfonylurea showed a greater reduction in HbA1c compared with sulfonylurea monotherapy [SMD=-0.54, 95% CI=-0.70; -0.37]. **CONCLUSIONS:** DPP-4 inhibitors added to metformin achieved a better glycemic control compared with metformin mono-