OBJECTIVES: Dipeptidyl peptidase-4 inhibitors (DPP-4I) include sitagliptin, saxagliptin, vildagliptin and linagliptin. Except for linagliptin, dosage adjustments based on renal function are recommended to avoid adverse events (e.g., hypoglycemia). However, data on the effect of DPP-4I on hemoglobin A1c (HbA1c) in patients with renal impairment is sparse. This meta-analysis seeks to determine the effect of DPP-4I on HbA1c in patients with chronic kidney disease (CKD). METHODS: Multiple databases using the generic name of each DPP-4I plus the following search terms “renal”, “renal impairment”, “chronic kidney disease”, “glycemia” were queried for clinical trials or observational studies assessing the aforementioned agents were performed. RESULTS: Eleven citations met inclusion criteria. Studies included 1,704 participants (10.7% on diализ), 48-79 years of age, 56 men, 56 Caucasians. Four studies compared DPP4I with sulfonylureas (glipizide or glibenclamide), five compared metformin and comparator, two compared with placebo. Switching to sulfonylureas was noted in 40-42 weeks. Meta-analysis showed DPP-4I caused a small but significant reduction by weeks 52-54 (-0.19% [95%CI -0.37, -0.00], p<0.0001, without heterogeneity. In sulfonylurea-comparator studies, DPP-4I did not significantly reduce HbA1c at week 24 (-0.09 [95%CI -0.26, 0.09]) but caused a small but significant reduction by weeks 52-54 (-0.19% [95%CI -0.37, -0.00], p=0.04), without heterogeneity. In patients on diализ, either comparator (placebo or glipizide), DPP-4I did not significantly reduce HbA1c after 52-54 weeks (0.11 [95%CI 0.00, 0.23], p=0.41). CONCLUSIONS: DPP-4I might be a suitable option for HbA1c reduction in patients with moderate-severe renal impairment is associated with a modest reduction of HbA1c versus placebo, but not when compared with sulfonylureas or when used in patients on dialysis. It is unclear if this modest reduction is worth the high cost of DPP-4I in patients with CKD.

PDB15 COMPARATIVE EFFICACY AND SAFETY OF ANTIDIABETIC DRUG REGIMENS ADDED TO STANDARD METFORMIN THERAPY IN TYPE 2 DIABETES Saubalwy WJ1, Means ES2, Zaccaro E3, Doleh Y4, Coleman CI5 1University of Connecticut, Storrs, CT, USA, 2University of Connecticut/Hartford Hospital, Evidence-Based Practice Center, Hartford, CT, USA. OBJECTIVES: Type 2 diabetes is a progressive disease and most patients experience deterioration in glycemic control over time necessitating the use of combination therapies. This study sought to characterise the comparative efficacy and safety of different third-line antidiabetic agents in patients with type 2 diabetes after failure of metformin and TZD therapy. METHODS: We performed a literature search of MEDLINE and CENTRAL, through May 2014 and included randomized controlled trials (RCTs) of ≥12-weeks duration evaluating the addition of a noninsulin agent in patients with type 2 diabetes inadequately controlled on stable, optimized metformin and TZD therapy (HbA1c ≥10.0mmol/mmol ≥5.5% and HbA1c ≥10.5% and ≥5.5% when >74 years of age, respectively). We included all RCTs of ≥12 weeks duration evaluating the addition of a noninsulin antidiabetic agent in patients with type 2 diabetes inadequately controlled on stable, optimized metformin and TZD therapy (≤1500mg metformin and ≥35.8% maximum TZD dose for ≥4 weeks). Network meta-analysis was performed on identified trials. Endpoints of interest were changes from baseline in HbA1c, body weight, systolic blood pressure (SBP), and the risk of hypoglycemia, urinary (UTI) and genital tract infection (GTI). RESULTS: Eleven RCTs of DAPA were included with evidence peptidase-4 inhibitor (DPP-4I) action (canagliflozin, empagliflozin, and gliclazide, all with a significant increase in HbA1c (100mg, titrated to 300 mg in patients requiring tighter control). All DPP-4I agents showed a similar HbA1c response across all included trials (≥10% reduction). In trials comparing DAPA with each comparator, all DAPA agents showed significantly lower HbA1c than each comparator (p<0.02). The most common baseline regimens comprised CANA was often prescribed as add-on therapy to ≥1 other antidiabetic agents. CANA discontinuation due to lack of glycemic efficacy or ≥1 adverse effect occurred in 10-20% of patients. Concomitant use of ≥1 AHA during placebo or placebo groups were used as a control. CONCLUSIONS: This meta-analysis showed that treatment with CANA versus DAPA could delay insulin initiation by 55% in both dual and triple therapy. This difference may translate into delays in undesirable health outcomes and the financial burden associated with injectables in actual practice.

PDB16 Efficacy and Safety of Insulin Analogs Compared to Human Insulin Preparations in Patients with Diabetes Type 1 (DM1): Systematic Review and Meta-Analysis Guerra Junior AG1, Araujo VE2, Iborid JB3, Diniz LM1, Silva MR4, Mata AR1, Nascimento RC1, Alvarenga J5, Accuaro MA6 1College of Pharmacy, Federal University of Minas Gerais, Belo Horizonte, Brazil, 2Medical College, Federal University of Minas Gerais, Belo Horizonte, Brazil OBJECTIVES: The use of insulin analogs for the treatment of diabetes mellitus types 1 and 2 has increased in recent years due to the growing scientific evidence in this area. The aim of this study was to compare the efficacy and safety of insulin analogs with human insulin preparations in the treatment of DM1. METHODS: A systematic review with meta-analysis was performed. Randomized controlled trials (RCTs) available in PUBMED, LILACS, CENTRAL (accessed February/2014), including clinical and grey literature were included. The meta-analysis was performed using Review Manager® v.5.2 software using random effects model. Outcomes considered were: concentration (% of glycated hemoglobin (HbA1c), blood or plasma glucose concentrations and occurrence of hypoglycemic episodes. Risk of bias was assessed according the recommendations of the Cochrane Collaboration. RESULTS: In a total of 36,673 publications analyzed, 35 studies were included: 14 studies compared glargine with NPH, 02 (Glargine vs. Detemir), 08 (NPH vs. Detemir), 04 (regular insulin vs Aspart), 06 (regular insulin vs Lispro) and 01 (Regular Insulin vs. Glulisine). The insulin analogues showed no differences (p<0.05) compared to human insulin preparations in relation to HbA1c (except Aspart vs regular insulin: favored Aspart) and occurrence of hypoglycemic episodes (except Detemir vs. NPH: favored Detemir). Glargine, Detemir and Lispro compared to human insulin preparations showed slightly improved fasting or post-prandial blood glucose concentrations, however this outcome had no influence to the overall glycemic control measured by HbA1c. Most studies showed poor methodological quality and conflicts of interest. CONCLUSIONS: There is poor evidence for the recommendation of first-line therapy using analogues instead of human insulin preparations, which is in concordance with long-term security is better known. The analogues for the treatment of DM1 should be better assessed on randomized clinical trials with good methodological quality, as well as on the analysis of insulin per unit dose and observational studies in order to assess the long-term safety profile.

PDB19 METFORMIN AND INTENSIVE LIFESTYLE INTERVENTION FOR PRE-DIABETES - SYSTEMATIC REVIEW OF Efficacy Faul MM1, Junqueira M2, Rostrepo M3, Turatti LA4 1Medical College of Georgia, Augusta, GA, USA, 2BioScience Institute, FFI, Colombia, 3UMSUP, SAcS, São Paulo, Brazil OBJECTIVE: Individuals with an A1C between 5.7% and 6.4%, impaired fasting glucose (from 100mg/dl [5.6mmol/l] and 125mg/dl [6.9mmol/l]) or impaired glucose tolerance (oral glucose tolerance test [2-hour] between 140mg/dl [7.8mmol/l] and 199mg/dl [11.1mmol/l]) are classified as having prediabetes at risk for development