type 2 diabetic patients above 18 years who underwent QST using computer-driven Medoc TSA II NeuroSensoryAnalyzer system from a period of October 2011 to May 2012. The results of QST were compared to those of monofilament test. **RESULTS:** Ninety-nine patients (73 males, 26 females) with an average age 51.49±11.07 years (range: 18-76 years) were recruited in the study. The sensitivity and specificity of QST to determine Warm Sensation Threshold, Cold Sensation Threshold, Heat Pain Threshold and Cold Pain Threshold in comparison to monofilament test was found to be maximum in case of Warm Sensation Threshold (86% and 94.5%, respectively). Cold Sensation Threshold was found to be inversely proportional to HbA1c (correlation=-0.0909) as well as age (correlation=-0.4395). It was also seen that Cold PainThreshold was inversely proportional to age (correlation=-0.2143) and Heat Pain Threshold was directly proportional to age (correlation=0.2698). **CONCLUSIONS:** Taking into consideration, the high sensitivity and specificity of quantitative sensory testing in case of Warm Sensation Threshold and limitations of our study, we conclude that Quantitative Sensory Testing can be of use in detecting diabetic peripheral neuropathy if used in proper way.

PDB82

ASSESSMENT OF PREVALENCE AND TOTAL HEALTH CARE COSTS OF ASSOCIATED COMORBIDITIES AMONG COMMERCIALLY-INSURED TYPE-2 DIABETICS

Chen SY[1], Alas V[1], Wu Y[2], Greene M[3], Biskupiak J[4]
[1]*United BioSource Corporation, Lexington, MA, USA,* [2]*United Biosource Corporation, lexington, MA, USA,* [3]*Georgia State University, Atlanta, GA, USA,* [4]*University of Utah, Salt Lake City, UT, USA*

OBJECTIVES: High rates of undiagnosed chronic kidney disease (CKD) in type-2 diabetics (T2DM) indicate that it may not take priority relative to other comorbidities. This study examined the prevalence and costs of stage 3-5 CKD in relation to other comorbidities within an insured patient population. **METHODS:** Medical and pharmacy claims and laboratory results from a US commercially-insured population were used to identify patients aged 18-64 with T2DM from 2006-2010 (the first observed diagnosis as the index date), continuous follow-up for 12 months following the index date, and a serum creatinine finding. Comorbid hypertension, dyslipidemia, heart diseases/stroke, eye problems, and neuropathy were identified during the post-index period based on diagnosis codes. Stage 3-5 CKD was identified by medical claims or laboratory findings with glomerular filtration rate <60 mL/min/1.73m^2. Annual total health care costs were reported at follow-up for the selected comorbidities. Generalized linear regression models were used to estimate the incremental costs of a given comorbidity. **RESULTS:** The final study sample included 101,964 T2DM patients (47.7% hypertension; 53.5% dyslipidemia; 9.7% heart diseases/stroke; 11.6% eye problems; 7.0% neuropathy; 9.2% stage 3-5 CKD). The direct annual total mean health care costs were $13,158 for all T2DM patients and were as follows for the selected comorbidities: hypertension: $16,676; dyslipidemia: $13,537; heart diseases and stroke: $39,987; eye problems: $16,017; neuropathy: $24,563; and stage 3-5 CKD: $28,325. After adjustment, the incremental costs of these selected comorbidities were $2,650, -$545, $17,752, $587, $6,043, and $7,792, respectively (all p<0.01). **CONCLUSIONS:** Among the commercially insured diabetics, the prevalence of CKD is similar to heart diseases/stroke, eye problems and neuropathy and had the second highest annual health care costs after heart diseases/stroke. The burden associated with moderate to severe CKD indicates that it should be considered as much as other comorbidities in the care of T2DM patients

PDB83

FREQUENCIES OF SELF-MEASUREMENT OF BLOOD GLUCOSE ACCORDING TO DIABETES TYPE AND TREATMENT

Ruiz L[1], Lammert M[2], Colclough H[1]
[1]*Adelphi Real World, Bollington, UK,* [2]*NovoNordisk, Copenhagen, Denmark*

OBJECTIVES: Self-Measurement of Blood Glucose (SMBG) is an important part of good diabetes management. Guidelines suggest frequent SMBG testing (the number depending on type of diabetes treatment), but there are also limitations in some countries on the maximum number of reimbursed strips per month. Each SMBG strip costs approximately 0.5€. Limited information on frequency of SMBG exists, although it accounts for a considerable proportion of diabetes management costs. **METHODS:** Data were drawn from the 2012 Adelphi Diabetes Disease Specific Programme, a cross-sectional survey involving 374 primary care physicians and 256 specialists across Europe. Doctors completed patient record forms for 7528 consulting patients, 4839 of whom independently completed a self-completion questionnaire. SMBG testing frequency was analysed separately for type-1 (T1) and type-2 (T2) diabetics and type of treatment (non-insulins, basal-only treatment (BOT), basal-bolus (BB) and other insulins). **RESULTS:** Proportion of patient-reported SMBG, T1 93.7%, T2 BOT 81.0%,T2 BB 88.7%. Physicians reported similar proportions of patients measuring their own glucose (T1 94.8%, T2 BOT 79.8% and T2 BB 90.3%). Physician recommended SMBG testing between (mean) 31.5 (T2 non-insulins) and 92.4 (T1) tests per month with 48.7 for T2 BOT, 81.0 for T2 BB users. The actual mean number of patient-reported SMBG tests per month is between 28.8 (T2 non-insulins) and 94.1 (T1), with 43.4 for T2 BOT, 83.5 for T2 BB.There is thus high consistency between patient and physician responses on proportion of patients performing SMBG and frequency of testing per month. **CONCLUSIONS:** Diabetes patients appear to accurately follow the SMBG recommendation from their physician. Insulin-treated diabetes is associated with frequent SMBG testing, and testing frequency increases with number of daily insulin injections. Treatment and technologies that can reduce the need for SMBG without compromising overall diabetes management could help to reduce overall diabetes management costs.

PDB84

EFFECT OF STATINS IN DELAYING THE PROGRESSION OF DIABETIC KIDNEY DISEASE: SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

Mohanty M[1], Thakker D[2], Gor D[3], Raval A[4]
[1]*Virginia Commonwealth University, Richmond, VA, USA,* [2]*Shrimati Kaumudiniben Health Outcome Research Group (SKHORG), Dhrangadhra, India,* [3]*University of Illinois at Chicago, Chicago, IL, USA,* [4]*West Virginia University, Morgantown, WV, USA*

OBJECTIVES: To assess the effect of statins on change in renal functions in patients with diabetic kidney disease (DKD). **METHODS:** Medline, Cochrane Central Register of Controlled Trials, SCOPUS, PsycINFO, and Web of Science databases were searched using the search terms that included Medical Subject Headings (MeSH) terms as well as text words. Randomized controlled (either parallel or crossover design) trials (RCTs), or quasi-randomized controlled trials of statins compared with placebo, other statins, or other drugs conducted in patients with either Type 1 or Type 2 DKD were included. We excluded studies in patients with kidney injury due to disease other than diabetes mellitus (such as gestational diabetes), patients on dialysis and/or with end-stage renal disease, and non-English articles. The primary endpoints were the rate of change in estimated Glomerular Filtration Rate (GFR) (ml/min) and the change in urine albumin excretion rate (AER) from baseline to follow-up. The quality of the studies was assessed using risk of bias assessment tool. **RESULTS:** The search yielded 738 studies of which 12 studies, with 3559 patients aged 18 years or older, were included. Statins comprised of atorvastatin (n=2), simvastatin (n=5), rosuvastatin (n=2), fluvastatin (n=1), lovastatin (n=1), and pravastatin and pitavastatin (n=1). The mean duration of follow-up was 15.75 months. Six of the studies were double-blinded. The studies were heterogeneous in design, treatment, dose and duration of follow-up. In six studies statins either significantly reduced albuminuria or prevented the rise of albuminuria. In five studies statin use retarded the deterioration of GFR. Thus, statins showed modest beneficial effect on renal functions in patients with DKD. **CONCLUSIONS:** Statins may delay the progression of kidney disease in diabetic patients. However, additional studies with larger sample size and longer duration of treatment are needed to confirm the beneficial effect of statins in patients with DKD.

PDB86

UNDERUTILIZATION OF ANTIHYPERGLYCEMIC DUAL THERAPY IN ELIGIBLE, TREATMENT-NAÏVE PATIENTS WITH TYPE 2 DIABETES

Qiu Y[1], Fu AZ[2], Davies MJ[1], Engel SS[3]
[1]*Merck Sharp & Dohme Corp., Whitehouse Station, NJ, USA,* [2]*Georgetown University, Washington, DC, USA,* [3]*Merck Sharp & Dohme Corp., Rahway, NJ, USA*

OBJECTIVES: The likelihood of reaching A1C treatment targets using monotherapy with antihyperglycemic agents (AHAs) is low in patients (pts) with type 2 diabetes (T2DM) and moderately elevated A1C levels. AACE/ACE guidelines recommend initiating dual therapy (DT) with AHAs in untreated pts with an A1C 7.6 – 9.0%. This analysis was to estimate the proportion of treatment-naïve pts with T2DM and an A1C 7.6 – 9% who initiate AHA treatment with DT and associated pt-related factors. **METHODS:** Using GE EMR database, pts included had a T2DM diagnosis from 2003 to 2010, ≥1 A1C measurement 7.6 – 9.0% (first instance = index date), continuous enrollment for ≥12 months before and ≥6 months after index date, and no AHA prescriptions in one year prior to index date. Pts receiving AHA prescriptions for DT within 30 days of index date were considered to have initiated DT at index date. Logistic regression identifies factors associated with initiating DT. **RESULTS:** Of the 30,501 selected pts, 8% initiated AHA DT and 36% initiated monotherapy within 30 days of the index date. After adjusting for baseline, pts with T2DM and an A1C 7.6 – 9.0% were more likely to initiate AHA DT if they had higher A1C (adjusted OR = 1.78 [95% CI: 1.61, 1.97]). Pts were less likely to be prescribed AHA DT if they were older (per 5-year OR = 0.95 [0.92, 0.97]), lived in regions outside of the South (ORs ranged from 0.44 – 0.68 for different regions compared to South), or had chronic renal disease/renal failure (OR [95% CI] = 0.46 [0.28, 0.76]). **CONCLUSIONS:** In summary, in a cohort of untreated pts meeting AACE/ACE guideline recommendation for initiating DT, the proportion of pts initiating DT (8%) or any AHA regimen (44%) was low. More strenuous efforts are needed to address underutilization of AHAs and appropriate use of DT.

PDB87

ECONOMIC BURDEN OF EMERGENCY DEPARTMENT AND OUTPATIENT/AMBULATORY VISITS ASSOCIATED WITH HYPOGLYCEMIA IN THE UNITED STATES FROM 2005-2009

Zhao Y[1], Shi Q[2], Fonseca V[2], Shi L[2]
[1]*University of Saint Joseph, Hartford, CT, USA,* [2]*Tulane University, New Orleans, LA, USA*

OBJECTIVES: We estimated economic burden associated with emergency department (ED) visits and outpatient/ambulatory visits for hypoglycemia for year 2005-2009. **METHODS:** We analyzed the National Hospital Ambulatory Medical Care Survey (NHAMCS) and the National Ambulatory Medical Care Survey (NAMCS). The NHAMCS has ED and outpatient department (OPD) components. The unit cost can be estimated from the Medical Expenditure Panel Survey (MEPS) for patients with diabetes (n=1010 in 2005, 1115 in 2006, 1039 in 2007, 1164 in 2008, 1276 in 2009). The annual costs were estimated by the multiplication of the MEPS unit costs and annual NHAMCS and NAMCS health care utilization associated with hypoglycemia. We did not estimate the annual hospitalization costs in NHAMCS OPD and the NAMCS due to no information on length of stay. All costs were adjusted to the U.S. 2009 dollars. **RESULTS:** The MEPS unit cost increased from $692 in 2005 to $932 in 2009, the annual expenditure of hypoglycemia ED visits fluctuated between $339 million in 2007 and $400 million in 2006 due to the estimated total hypoglycemia visits declined over those 5 years. Hospital admissions from emergency department associated