Introduction

• More than 55% of prevalent dialysis patients in 2007 had diabetes mellitus (DM) as a cause of ESRD or a comorbid condition.

• There have been no published reports describing the use and costs of medications to treat DM in dialysis patients since the implementation of the Medicare Part D prescription drug benefit.

• Very little information exists about adverse effects or the comparative effectiveness of these antidiabetic agents among dialysis patients.

• Understanding use patterns, including single medication and combination medication use, is the first step toward designing comparative effectiveness studies.

• We investigated the prevalence of antidiabetic medication use in Medicare dialysis patients, along with the relative odds of use by age, ESRD network, and low-income subsidy (LIS) status.

• We also assessed related patient and Medicare costs.

Methods

• From USRDS data, we identified point-prevalent adult (≥18 years) dialysis patients alive on January 1, 2007.

• We also required both survival and dialysis therapy during all of 2007.

• We included only patients with DM, as indicated either as the primary cause of ESRD or as a comorbid condition on CMS form-2728 (at any time) or on Medicare claims from 2007.

• Data were linked with 2007 Part D enrollment and drug data from the CMS Chronic Condition Warehouse.

• We retained those patients with enrollment in either a stand-alone or Medicare Advantage Part D plan during all of 2007.

• We analyzed drug event data pertaining to alpha-glucosidase inhibitors (AαIs), amylin analogues (AAIs), biguanides (BIs), DPP-4 inhibitors (DPIs), incretin mimetics (IM), glitazones, sulfonlureas (SUs), thiazolidinediones (TZDs), and insulin, as indicated by National Drug Codes in the First Databank drug database.

• We used logistic regression to estimate odds ratios of oral diabetes agents and insulin use, adjusted for demographics, ESRD network, LIS status, CV comorbidity and diabetes (type 1, 2).

• We calculated out-of-pocket (OOP) costs per user and gross drug costs per member per month (MPM).

Results

• The cohort of adult dialysis patients with diabetes and continuous Part D coverage in 2007 (n=93,046) was 36% white and 49% female; mean age 62.3 yr, mean ESRD duration 3.3 yr.

• Among 50% of patients used oral antidiabetic agents; sulfonylureas were most commonly used (17%), followed by TZDs (13%) and glinides (3.3%); 50% used insulin (Figure 1).

• Only 12% of patients received long-term (≥90 days) combination medication therapy; use of a sulfonylurea with a glinide was most common (Figure 7).

• OOP costs for LIS patients were $52 per month, regardless of agent, OOP costs were 6-8 times higher for TZDs, glitazones, and insulin than sulfonylureas in non-LIS patients (Figure 8).

• Gross costs PMPM were highest for insulin and TZDs (Figure 9).

Conclusions

• In 2007, variation existed in use of antidiabetic agents in adult dialysis patients with Part D coverage.

• Newer agents and metformin were not extensively used in dialysis patients in 2007.

• Further research will examine other factors that may impact use and variation in diabetic agent use in adult dialysis patients.