Disclosures
Lin TC, Dluzniewski P, and Bradbury B are employees and stockholders of Amgen Inc; Guo H, Gilbertson D, Nieman K, and Lu J are employees of CDRG. CDRG receives research funds from Amgen. Sprafka JM is retired from Amgen.

Introduction
• Gastrointestinal (GI) bleeding contributes to hospitalization and death and is a frequent complication among dialysis patients.
• Increased risk of GI bleeding among dialysis patients is associated with kidney disease itself and with attendant comorbid conditions.
• Studies show that medications used by dialysis patients may increase the risk of GI bleeding.
• Cinacalcet use was hypothesized to increase GI bleeding risk in dialysis patients with secondary hyperparathyroidism (SHPT).
• This study assessed the association between cinacalcet use and risk of GI bleeding in hemodialysis (HD) patients with SHPT.

Methods
• We used the 2006-2010 USRDS database linked with patient medical records from a large US dialysis provider.
• The study included all US HD patients with SHPT receiving dialysis services from this provider, 2007-2010, who were:
  • Aged 18 years or older
  • Covered by Medicare Parts A, B, and D for ≥1 year
  • On dialysis for ≥90 days
• Patients with history of parathyroidectomy (PTX), kidney transplant, GI bleeding, or cinacalcet use within 1 year preceding the cohort entry date (the earliest date meeting all conditions above) were excluded.
• Patients were followed from cohort entry to the earliest date of death, PTX, GI bleeding, loss of Medicare coverage, change to peritoneal dialysis, transplant, or December 31, 2010.
• Outcome: GI bleeding event, including hospitalization with GI bleeding as primary diagnosis and death due to GI bleeding.
• This was a nested case-control study
  • Cases: patients with GI bleeding events during follow-up, event dates defined as index dates.
  • Controls, relative and case related: patients with no GI bleeding events before the index date of the corresponding case.
  • Incidence-density sampling match: up to four controls were matched to each case by age, sex, race, dialysis duration, and PTH level.
  • A control could become a case.
• Exposures were defined based on presence of a cinacalcet prescription in the Medicare Part D prescription event files:
  • Any use (yes/no) between cohort entry and index date.
  • Recency of use (within 61 days preceding index date [current], earlier than 61 days preceding index date [past], no use).
• Multivariable conditional logistic regression was used to estimate the odds ratios (ORs) and the corresponding 95% CIs for the association between cinacalcet use and risk of GI bleeding, adjusting for potential confounders including demographics, comorbid conditions, and medication use.
  • Subgroup analyses were conducted by age, sex, race, dialysis duration, and PTH levels.

Results
• From 51,007 included patients, 2570 cases were identified.
• 2465 (96%) cases were matched to 9400 controls (2237 cases were matched to exactly four controls).
• Matched cases and controls were well balanced on matching variables (age 66.0 vs. 66.1 years; 52.0% vs. 52.1% female; 54.0% vs. 55.2% white; 2.5 vs. 2.3 years dialysis duration; 80.2% vs. 81.1% with PTH <600 pg/mL; differences were due to not every case being matched to four controls).
• Comorbid conditions and bleeding-related medication use were more prevalent in cases than in controls (Table 1).
• Cinacalcet use at any time before the index date was similar among cases and controls, 17.2% and 15.6%, respectively.
• The adjusted ORs and associated 95% CIs for the association between any, current, and past use and GI bleeding, relative to no use, were 1.04 (0.9-1.2), 0.97 (0.8-1.1), 1.22 (0.99-1.5), respectively (Figure 1).
• Results were similar across subgroups (Figure 1).

Conclusions
• In this nested case-control study of over 50,000 patients receiving HD, we found any use or current use of cinacalcet, a treatment commonly used to manage SHPT, did not associated with an elevated risk of GI bleeding.
• A modestly elevated risk of GI bleeding related to past cinacalcet use was found, which may be caused by residual confounding. Further investigation is necessary.