Baseline Characteristics of Patients with Non-Dialysis-Dependent Chronic Kidney Disease with and without Anemia: A Report from the Retrospective Cohort from DISCOVER CKD

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Background and Objectives

• DISCOVER CKD is an international observational cohort study of patients with chronic kidney disease (CKD), aiming to provide real-world insights to improve understanding of the epidemiology and the determinants of clinical and patient-reported outcomes in CKD.

• Anemia is a frequent complication of CKD, especially as kidney function declines, and is associated with adverse clinical outcomes and reduced quality of life.

• Anemia may be treated with erythropoiesis-stimulating agents (ESAs).2

• This analysis describes baseline demographics, comorbidities, and medication use of patients with non-dialysis-dependent (NDD) CKD with and without anemia from a large cohort of patients in DISCOVER CKD.

Methods

• Data were extracted from the TriNetX health research network (US data), Japan Medical Data Vision (JMDV), the UK Clinical Practice Research Datalink (CPRD), and US integrated Limited Claims and Electronic Health Records database (iLECD).

• Patients were aged ≥18 years with ≥3 estimated glomerular filtration rate (eGFR) measures <60 mL/min/1.73 m² within the 6–36 days apart between January 2008 and March 2020 (Figure 1). The index (baseline) date was the first hemoglobin (Hb) measure (regardless of value) or an anemia therapy (iron, ESA, or blood transfusion) prescription after the second eGFR measure.

• Exclusion criteria included: <1-year registration/medical history prior to index, active bleeding (<60 days from transfer) or no Hb measure within a year after CKD diagnosis. Anemia was defined as <12 g/dl (females), <13 g/dl (males) as per World Health Organization (WHO) criteria.

• Baseline characteristics were summarized and stratified by the presence of anemia.

• iLECD data were presented separately to TriNetX-JMDV+CPRD data as data privacy restrictions prevented merging of data.

Figure 2. Patient Characteristics by Hb Strata

A LCED (N = 36,862) B TriNetX-JMDV+CPRD (N = 264,103)

- Figure 3. Comorbidities by Hb Strata

A LCED (N = 36,862) B TriNetX-JMDV+CPRD (N = 264,103)

Figure 4. Characteristics of Patients with Anemia by CKD Stage

A LCED (N = 1,150) B TriNetX-JMDV+CPRD (N = 1,693)

Figure 5. Medications by Hb Strata

A LCED (N = 36,862) B TriNetX-JMDV+CPRD (N = 264,103)

References


Conclusions

• In this study population, patients with anemia tended to have more severe CKD and an increased comorbidity and complication burden compared with those without anemia; this was particularly evident for an increase in prevalence of AKI with increased anemia severity.

• Regardless of recognized associations with adverse reactions such as infections and allo hypersensitivity, blood transfusions were the most common treatments received by patients with anemia, especially among those with Hb levels ≥8 g/dl.

• Overall, few patients were treated for anemia, suggesting a lack of available and appropriate therapies; notably, use of oral iron therapy may have been under-reported.