



Congress Abstract

Effectiveness of Ferric Carboxymaltosate on Renal Function in Patients with Chronic Kidney Disease

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ABSTRACT

Background: Iron deficiency anemia is common in patients with chronic kidney disease (CKD) and is associated with adverse clinical outcomes. Ferric carboxymaltose (FCM) is an effective and well-tolerated treatment for iron deficiency anemia in CKD. However, its potential effects on renal function remain insufficiently understood. This study aimed to evaluate changes in renal function following FCM administration in patients with CKD stages 3–4 and to assess whether these changes were associated with the administered dose.

Methods: This prospective study included patients with CKD stages 3–4, anemia, and iron deficiency (serum ferritin <100 µg/L or <200 µg/L with transferrin saturation <20%) who received intravenous FCM (Fercari) and were followed for 24 weeks. Patients were stratified according to the administered dose: 500 mg or 1000 mg. Clinical and laboratory parameters were assessed at baseline and after 24 weeks. Renal function was evaluated using estimated glomerular filtration rate (eGFR) calculated by the CKD-EPI equation.

Results: A total of 56 patients were included; mean age was 64.3 ± 6.7 years, and 25 (44.6%) were men. Diabetes mellitus, chronic heart failure, and arterial hypertension were present in 34 (60.7%), 31 (55.3%), and 45 (80.3%) patients, respectively. CKD stage 3 was present in 20 (35.7%) patients and stage 4 in 36 (64.3%). Thirty-two patients (57.1%) received 1000 mg FCM. Baseline mean hemoglobin was 98.3 ± 4.23 g/L and mean eGFR was 39.18 ± 15.14 mL/min/1.73 m². After 24 weeks, hemoglobin increased by 12.3 ± 1.51 g/L in the overall cohort ($P=0.001$), with increases of 15.6 ± 3.71 g/L in the 1000 mg group and 8.8 ± 1.5 g/L in the 500 mg group (both $P=0.001$). Mean eGFR increased by 5.86 ± 2.13 mL/min/1.73 m² in the overall cohort ($P=0.042$). In the 1000 mg group, eGFR increased by 6.64 ± 2.55 mL/min/1.73 m² ($P=0.049$), whereas no statistically significant change was observed in the 500 mg group.

Conclusions: FCM effectively improved hemoglobin levels in patients with CKD stages 3–4 and iron deficiency anemia. Treatment with 1000 mg FCM was associated with a modest improvement in eGFR over 24 weeks, whereas no significant change was observed with 500 mg. These findings suggest a possible dose-related association between FCM treatment and renal function; however, controlled randomized studies are required to determine whether this represents a true nephroprotective effect.

Keywords: Ferric Carboxymaltosate; Renal Function; Chronic Kidney Disease