Intravenous Ferric Carboxymaltose for Acute Isovolemic Anemia Following Gastrectomy (Fairy): A Randomized Controlled Trial

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Aim : Acute isovolemic anemia is commonly observed after surgery and negatively influences short- and long-term outcomes. Current blood management practices fail to deliver effective reversal of anemia. The aim of this study was to evaluate the efficacy and safety of ferric carboxymaltose to treat anemia following gastrectomy.

Method : The FAIRY study was a patient-blind, randomized, phase 3, placebo-controlled, 12-week study was conducted between 4 February 2013 and 15 December 2015 to evaluate the ability of ferric carboxymaltose to correct acute isovolemic anemia. This study was conducted in seven centers across the Republic of Korea. The primary endpoint was the number of hemoglobin responders, defined as hemoglobin increase of ≥ 2 g/dL from baseline and/or ≥ 11 g/dL at week 12. Secondary endpoints included changes in hemoglobin and other iron parameters over time, percentage of patients requiring alternative anemia management, and quality of life at weeks 3 and 12.

Results : 454 patients were randomized to receive ferric carboxymaltose (228 patients) or placebo (226 patients). The number of hemoglobin responders was significantly greater for ferric carboxymaltose versus placebo (200 patients [92.2%] vs 115 patients [54.0%]; $P=0.001$). Correction of anemia and improvements in iron parameters were significantly in favor of ferric carboxymaltose at all time points, and these patients required less alternative anemia management compared to placebo patients (1.8% vs 7.1%; $P=0.006$). Improvements were observed for fatigue and dyspnea in the ferric carboxymaltose group. No grade 3 or 4 adverse events were recorded, and ferric carboxymaltose-related adverse events reported in more than one patient included injection site reaction and urticaria (both : 5 patients [2.3%]).

Conclusions : Ferric carboxymaltose for postoperative blood management was safe and effective in correcting anemia and iron deficiency. In order to improve the recovery period, patients with low hemoglobin levels post-gastrectomy should receive intravenous ferric carboxymaltose.