

Long-term effects of iron deficiency in patients with heart failure with or without anemia - the RAID-HF follow-up study

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Introduction: Iron deficiency (ID) in patients with heart failure with reduced ejection fraction (HFrEF) has been recognized as a clinically relevant comorbidity; however, study data have shown that diagnostic and therapeutic efforts on ID in HFrEF are primarily performed in patients with anemia.

Methods: The RAID-HF study investigates management and prognosis of consecutive patients with ID and HFrEF in 11 heart centers in Germany and Switzerland. The present analysis focuses on one-year follow-up data as well as patients with versus without anemia.

Results: In 505 patients with HFrEF and ID and 418 patients with HFrEF without ID one-year follow-up was performed. Patients with HFrEF and ID had a higher long-term mortality compared to those without ID (19.5% vs. 13.7%, $p=0.02$) and reported a lower quality of life compared to patients without ID (EQ-5D, $p<0.05$).

Only a minority of patients with HFrEF and ID (9.3%) received iron supplementation during long-term course, just 4.7% intravenously.

Anemia in patients with HFrEF was associated with an elevated mortality; coexisting ID vs. no ID did not predict mortality (log rank 0.78). However, in patients with HFrEF without anemia ID vs. no ID predicted mortality (log rank 0.002). In a multivariate analysis ID was a significant predictor of one-year mortality in patients without anemia (HR 2.10, 95% CI 1.19–3.68), but not in anemic patients (HR 0.97, 95% CI 0.65–1.46).

Conclusions: The international RAID-HF registry demonstrates the impact of ID on long-term mortality and quality of life in patients with HFrEF and reveals an underuse of iron supplementation in current clinical practice. Particularly in patients without anemia the diagnosis of ID is of clinical relevance to identify patients at higher mortality risk.