

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

### METHODS

The RAID-HF registry investigated consecutive patients with ID and HFrEF in 11 heart centers in Germany and Switzerland. The present analysis focuses on 1-year follow-up data in patients with versus without anemia.

### RESULTS

In 505 patients with HFrEF and ID and 418 patients with HFrEF without ID 1-year follow-up was performed. Patients with 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. Only a minority of patients with ID (9.3%) received iron supplementation during long-term course, just 4.7% intravenously. Anemia was associated with an elevated mortality whereas ID versus no ID did not predict mortality in anemic patients (log-rank  $p = 0.78$ ). However, in patients without anemia ID versus no ID predicted mortality (log-rank  $p = 0.002$ ). In the adjusted analysis a significant interaction remained, with ID being a significant predictor of 1-year mortality in patients without anemia (HR 2.15, 95% CI 1.12-3.78), but not in anemic patients (HR 0.99, 95% CI 0.65-1.49).

### CONCLUSIONS

RAID-HF 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.

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