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The prevalance of iron deficiency anaemia in heart failure and non-heart failure controls

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Iron is an essential micronutrient. Iron deficiency (ID) is a common condition worldwide in both healthy and clinical populations, including heart failure (HF). ID is an independent risk factor for worsening of HF regarding functional status, exercise capacity, quality of life and, in some studies hospitalization, cardiac structure/function, and renal function[(1)].

For this study, we recruited patients with either HF in the setting of reduced ejection fraction (HFrEF) or preserved ejection fraction (HFpEF) as well as controls with non-HF dyspnea (table 1).

Table 1.

	HFpEF	HFrEF	Non-HF dyspnoea
N=	18	12	16
Male *n* (%)	5 (28)	7 (58)	6 (38)
Age (y)	82·2 ± 6·9 (69 to 92)	72·6 ± 13·2 (52 to 90)	75·6 ± 7·2 (61 to 89)
BMI (kg/m$^{2)}$	31·9 ± 7·9 (22 to 48·9)	32·3 ± 5·4 (23·7 to 41·8)	32·6 ± 5·9 (21·3 to 44·2)
BNP (ng/L)	203·7 ± 113·4 (70·8 to 464)	223·4 ± 155 (5·6 to 452)	59·9 ± 65·6 (7·2 to 250)
Anaemia (based on Hb) *n* (%)	5 (28)	7 (58)	4 (25)

Data are displayed as mean ± SD (range)

We compared anaemic to non-anaemic individuals using 1 tailed, unpaired t-tests. HF severity based on New York Heart Association Class was significantly worse in anaemic vs. non-anaemic subjects (3 vs. 2; $p = 0{\cdot}016$). Consistent with this observation, BNP levels were significantly greater in anaemic vs. non anaemic subjects (236 vs. 134 ng/L; $p = 0{\cdot}007$).

Our small exploratory study demonstrates that anaemia is common among older populations with breathlessness (>25 %), and particularly among those with HFrEF (58 %). Further, anaemia was associated with HF severity (self-reported and biochemically). Well-designed intervention studies of iron supplementation in HF are lacking but are required to demonstrate the effect, if any, of iron replacement in this context.

1. Silverberg DS, Wexler D, Schwartz D (2015) *Int J Mol Sci.* **16**; 14056–74.