**Supplementary materials**

**Table S1 Study characteristics**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author and****Year** | **Treatment and Control** | **N** | **Mean Age****(year)** | **Female****(%)** | **Inclusion Criteria** | **Endpoints** | **Follow-****up** |
| **NYHA****class** | **LVEF****(%)** | **Hb****(g/dL)** | **Ferritin (μg/L)****and TSAT(%)** | **Others** |
| **Anker****2009[17]** | I.V. FCM 200 mg qd. | 304 | 67.8 ± 10.3 | 52.4 | II-III | 40% for NYHA II, 45% for NYHA III | 9.5-13.5 | ferritin< 100, or 100-299 if TSAT < 20% |  | PGA，NYHA class,6MWT distance，EQ-5D score，KCCQ score | 26weeks |
| Placebo saline | 155 | 67.4 ± 11.1 | 54.9 |
| **Okonko****2008[21]** | I.V iron sucrose 200 mg qd. | 24 | 64.0 ± 14.0 | 29.2 | II-III | <45% | ＜14.5 | ferritin< 100, or 100-300 if TSAT < 20% | PVO2 < 18ml/min/kg | PGA，NYHA class,MLHFQ score,LVEF | 18weeks |
| No treatment | 11 | 62.0 ± 11.0 | 27.3 |
| **Toblli****2007[23]** | I.V. iron sucrose 200 mg qd. | 20 | 76.0 ± 7.0 | NS | II-IV | <35% | Hb < 12.5 for men，＜11.5 for women | ferritin< 100 or TSAT< 20% | CrCL < 90ml/min | NYHA class,MLHFQ score,LVEF | 6months |
| Placebo saline | 20 | 74.0 ± 8.0 | NS |
| **Ponikowski 2015[22]** | I.V. FCM 500 or 1000 mg qd. | 150 | 69 ± 10 | 45 | II-III | <45% | ＜15 | ferritin< 100, or 100-300 if TSAT < 20% | BNP＞100pg/ml,NT-proBNP＞400pg/ml | PGA，NYHA class,6MWT distance，EQ-5D score，KCCQ score | 52weeks |
| Normal saline  | 151 | 70 ± 9 | 49 |
| **Lewis****2017[20]** | P.O. iron polysaccharide | 111 | 63 | 40 | II-III | <40% | 9-15 for men，9-13.5 for women | ferritin 15-100 or 100-299if TSAT<20% |  | peak V˙O2,6MWT distance，KCCQ score | 16weeks |
| Placebo | 114 | 63 | 32 |
| **Veldhuisen 2017[24]** | I.V. FCM | 86 | 63 ± 12 | 30 | II-III | <45% | ＜15 | ferritin< 100, or 100-300 if TSAT < 20% | BNP＞100pg/ml,NT-proBNP＞400pg/ml | PGA，peak VO2 ,NYHA class | 24weeks |
| No treatment.Oral iron was allowed. | 86 | 64 ± 11 | 20 |

**Continued**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Beck-da-****Silva 2013[19]** | I.V. Iron sucrose 200 mg qd. | 10 | 66.9 ± 8.3 | 33.3 | II-IV | <40% | NS | ferritin< 500 and TSAT< 20% |  | peak VO2 | 3months |
| P.O. ferrous sulfate 200 mg qd. | 7 | 63.5 ± 16.2 | 25 |
| Placebo | 6 | 68.9 ± 10.1 | 33.3 |
| **Arutyunov 2009[18]** | I.V. iron sucrose 200 mg qd. | 38 | NS | NS | NS | NS | NS | NS |  | NS | 14Weeks |
| I.V. FCM 200 mg qd. | 22 | NS | NS |
| NS | 19 | NS | NS |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Lita** **2017[25]** | P.O. ferrous sulfate | 22 | NS | NS | NS | <50% | NS | Ferritin< 100 or 100-300 if TSAT< 20% |  | 6MWT distance | 3months |
| Placebo | 19 | NS | NS |

**Table S2 Risk of bias assessment**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Random sequence generation** | **Allocation concealment** | **Blinding of participants and personnel** | **Blinding of outcome assessment** | **Incomplete outcome data** | **selective reporting** | **other bias** |
| **Anker 2009[17]** | low risks | low risks | low risks | low risks | low risks | low risks | unclear risks |
| **Okonko 2008[21]** | low risks | low risks | high risks | low risks | low risks | low risks | unclear risks |
| **Toblli 2007[23]** | low risks | unclear risks | low risks | low risks | low risks | low risks | unclear risks |
| **Ponikowski 2015[22]** | low risks | low risks | low risks | low risks | low risks | low risks | unclear risks |
| **Lewis 2017[20]** | low risks | low risks | low risks | low risks | low risks | low risks | unclear risks |
| **Veldhuisen 2017[24]** | low risks | high risks | high risks | low risks | low risks | low risks | unclear risks |
| **Beck-da-Silva 2013[19]** | low risks | low risks | low risks | low risks | low risks | low risks | unclear risks |
| **Arutyunov 2009[18]** | unclear risks | unclear risks | unclear risks | unclear risks | unclear risks | unclear risks | unclear risks |
| **Lita 2017[25]** | unclear risks | unclear risks | unclear risks | unclear risks | unclear risks | unclear risks | unclear risks |

Reference

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**Supplementary figure legend**

Figure S1 Forest plot showing the effect on the Quality of life parameters. (A) MLHFQ score (B)EQ-5D score.