Table 1. Characteristics of the included studies.

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| Author, Year | Design | Inclusion Criteria | ExclusionCriteria | Number of Patients Randomized | Type of ICU | Treatment | Comparator | Outcomes Reported |
| Garrido-Martin, 2012 | RCT | Older than 18 years, elective cardiac surgery with cardiopulmonary bypass, no prior anemia, susceptible to treatment, without pre-operative blood transfusion, able to complete all study visits, informed consent | Without cardiopulmonary bypass, treatment with fibrinolytic 48 prior to surgery, history of impaired renal function, previous surgery for endocarditis, re-do surgery, pregnant or lactating, active GI bleeding, vitamin B12 deficit, ferropenic anemia, clinical history of asthma or allergy, active infection, included in another clinical study, hepatic disease, history of allergy to iron, unlikely to adhere to protocol follow-up, unable to comply with study protocol | 210 | Cardiac Surgical | 3 arms:1) 3 doses of iron sucrose 100 mg IV TID pre and post-operatively AND oral placebo; placebo continued for 1 month after discharge2) oral iron for the same period continued for 1 month after discharge AND IV placebo during hospitalization3) oral placebo AND IV placebo treatment for the same period | Oral placebo AND IV placebo as 3rd arm of the trial | Hematologic parameters, amount of PRBC transfused, number of patients transfused |
| Litton, 2016 | RCT | Older than 18 years, ICU admission <48hr, anticipated to require ICU care beyond the next calendar day, had a hemoglobin <100g/L at any time in the preceding 24hr | Suspected or confirmed severe sepsis, ferritin > 1200ng/mL, or transferrin saturation > 50%, history of haemochromatosis or aceruloplasminaemia, known administration of IV iron in the preceding 3 months, Jehova’s witness or other documented exclusion to receiving blood products, receiving ESA (e.g. epoetin or darbepoetin) in the 3 momnths prior to ICU admission, known hypersensitivity to IV iron, pregnancy, treatment intent is palliative, death is deemed imminent and inevitable, weight less than 40kg, participating in competing study | 140 | Medical-Surgical | 2 arms:1) ferric carboxymaltose 500mg IV; re-dosing as per criteria until death, discharge from ICU, or a total of 4 doses2) identical placebo | IV placebo | Hematologic parameters, number of PRBC transfused, number of patients transfused, mortality, infection parameters |
| Madi-Jebara, 2004 | RCT | Elective cardiac surgery with cardiopulmonary bypass with post-pump hemoglobin 7-10g/dL | Transfusion of allogeneic blood intraoperatively, patients with unstable hemodynamic status after surgery, patients with ejection fraction less than 40%, preoperative anemia from any cause such as renal failure, hypothermic bypass, and contraindication for parenteral iron such as rheumatoid arthritis, history of allergic reactions to iron, hemosiderosis, and liver disease | 120 | CardiacSurgical | 3 arms:1) IV placebo AND SC placebo of r-HUEPO2) iron sucrose 200mg/day starting on day 1 to reach a calculated iron deficit AND SC placebo of r-HUEPO3) iron sucrose as per group 2 AND SC r-HUEPO | IV placebo AND SC placebo of r-HUEPO as the 1st arm of the trial | Number of patients transfused, mean number of units transfused per patient, reticulocyte counts (%), serum ferritin levels, hemoglobin levels |
| Pierracci, 2014 | RCT | Primary diagnosis of trauma, latest hemoglobin <12g/dL, older than 18 years, less than or equal to 72 hours from ICU admission, expected ICU length of stay at least 5 days | Active hemorrhage requiring PRBC transfusion, iron overload (haemochromatosis or aceruloplasminaemia, biochemical indictors), active infection, chronic inflammatory conditions, preexisting hematologic disorders, macrocytic anemia, current or recent use of immunosuppressive agents, use of r-HUEPO in the previous 30 days, pregnancy or lactation, legal arrest or incarceration, prohibition of PRBC transfusion, 48hr or more duration of admission to an ICU in a transferring hospital, history of intolerance or hypersensitivity to iron, moribund state in which death was imminent | 151 | Trauma | 2 arms:1) iron sucrose 100mg IV thrice weekly up to 6 doses or ICU discharge2) placebo thrice weekly up to 6 doses or ICU discharge | IV placebo as the 2nd arm of the trial | Biochemical iron parameters, hemoglobin concentration, number of PRBC transfused, infection, antibiotic use, ICU and hospital lengths of stay, mortality |
| van Iperen, 2000 | RCT | Hemoglobin concentration < 11.2g/dL or <12.1g/dL in the case of cardiac disease, older than 18 years, expected ICU stay of at least 7 days, informed consent,  | Pregnancy, iron deficiency anemia, vitamin B12 deficiency, recent use of cytostatics or recent radiotherapy, a life expectancy of <7 days, chronic renal failure, prior use of epoetin alfa | 24 | MedicalSurgicalTraumaNeurological | 3 arms:1) IV folic acid alone2) IV folic acid AND iron sucrose 20mg IV daily from days 1 to 143) IV folic acid AND iron sucrose 20mg IV daily from days 1 to 14 AND epoetin alfa SC on days 1,3,5,7,9 | IV folic acid alone as the first arm of the trial | Reticulocyte count, hemoglobin concentration, serum EPO concentration, biochemical iron parameters, CRP levels |