EDITORIAL

IRON DEFICIENCY IN PATIENTS WITH HEART FAILURE: A MISSING LINK

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Iron is present not only in hemoglobin but also actively involved in enzymatic action in cellular respiration, maintaining structure and functions of metabolically active cells. Iron deficiency may lead to impairment of metabolically active cells of different organs especially the heart.[1]

About 50% of patients with heart failure are iron deficient regardless of sex, race, anemia and left ventricular ejection fraction (LVEF). It can be due to decrease in total body iron or reduction in storage pool.[2]

There is controversy on the definition of iron deficiency (ID). First by World Heart Organization as serum ferritin <15ng/ml and ID as <30ng/ml and second by International guidelines on heart failure as Serum Ferritin <100ng/ml and serum ferritin 100-299ng/ml and transferrin saturation (TSAT) <20%.[3]

In a study conducted by Masini et al. in evaluating different ID definitions in prognosis of patients by using four definitions of ID. The study provided practicing physicians to evaluate ID with heart failure. Most reliable parameter would be TSAT<20% or serum iron ≤ 13 µmol/l.[4,5]

The great question arises that ID as marker of severity heart failure or causal factor for progression of heart failure. As heart failure progresses there is an increase in levels of inflammatory cytokines. This causes decrease absorption of iron into blood and retention in liver and reticuloendothelial cells. There is decrease in erythropoietin production and erythroblast proliferation.[6]

The study conducted by Masini et al showed highest rates of TSAT<20% and Serum Iron levels ≤ 13µmol/l with anemia and high levels of C-reactive protein (CRP) which indicates ID as marker of heart failure severity. Moreover reduced mitochondrial oxygen consumption favors glucose over fatty acid utilization. This may cause myocardial dysfunction and adverse remodeling.[5]

Survey of anemia in South Asian population showed 46% with congestive heart failure with mortality of 7% and rehospitalization of 81% in Pakistani population, 24% in Northwest Iran, and 58.8% in India.[7-9]

ID with different studies have found to be common in patients with heart failure irrespective of definitions accepted. TSAT<20% and serum iron ≤ 13 µmol/l were associated with high mortality. It's important that we do a study in our population to find out prevalence of ID in different phenotypes of heart failure. This will help in selecting patients for Intravenous Iron Therapy (Ferric Carboxy maltose).

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Citation: Ashraf T, Ishaq M, Nadeem A. Iron Deficiency in Patients with Heart Failure: A Missing Link. Pak Heart J. 2022;55(04):309-310. https://doi.org/10.47144/phj.v55i4.2477