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Prevalence of different types of anaemia and its association to eGFR in heart failure patients who are attending to heart failure clinic, Teaching hospital, Jaffna

Basnayake GKWCN[1]*, Chandrasiri NMPCT[1], Kularathna HS[1], Thillainathan K[1], Guruparan M[2], Sivakumar H[3]

[1]*Department of Medical Laboratory Sciences, Faculty of Allied Health Sciences, University of Jaffna*
[2]*Teaching Hospital, Jaffna*
[3]*Department of Pathology, Faculty of Medicine, University of Jaffna*
*cbnisansa@gmail.com

Introduction: Heart failure is a major public health problem and an emerging epidemic. Anemia is a global public health problem that leads to human death, social and economic problems in all over the world. Patients with anemia and heart failure conditions may also have a higher risk of renal impairment.

Objective: To investigate the prevalence of different types of anemia and its association with estimated glomerular filtration rate (eGFR) in Heart failure patients who are attending to Heart failure Clinic, Teaching Hospital Jaffna.

Methodology: This is a laboratory based cross sectional study conducted among 102 heart failure patients attending to heart failure clinic, Teaching Hospital Jaffna. Haemoglobin concentration and red cell indices were measured in collected samples. Based on the findings, anemia prevalence was determined and was further classified into microcytic, normocytic, or macrocytic anemia. eGFR was calculated by using the patients' creatinine report. All the data were analyzed by using SPSS version 21. Ethical clearance was obtained from Ethics Review Committee of Faculty of Medicine.

Results: Among the total study population, 64.2% were anemic while 35.8% were non-anemic. Out of 64.2% anemic patients, 75.3% had normocytic normochromic anemia, followed by 22.1% with microcytic hypochromic anemia and 2.6% with macrocytic hyperchromic anemia. When considering the eGFR association, 75.3% of the anemic and 90.7% of non-anemic had eGFR $\geq$60ml/min/1.73m^2 and the remaining 24.7% of anemic and 9.3% of non-anemic population had eGFR <60ml/min/1.73m^2. A significant association between eGFR and anemia was observed ($p<0.05$).

Conclusion: According to our study, prevalence of anemia is high in heart failure patients and the most common type of anemia is normocytic normochromic. Also, there is a significant relationship between eGFR and anemia in HF patients. Therefore, HF patients who were anemic have a high risk for renal impairment.

Key words: Heart Failure, Anemia, Renal impairment