

Prevalence of anaemia among patients with heart failure in University Medical Unit, Colombo South Teaching Hospital

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Introduction

Anaemia is frequently seen in patients with congestive heart failure (CHF) and reduced haemoglobin (Hb) is associated with an inverse relationship to disease severity, more frequent hospitalisation and morbidity rates¹. It is also a common and independent prognostic factor of mortality². Anaemia is associated with higher elevations of serum B-type natriuretic peptide, more severe diastolic dysfunction and a worse prognosis³.

Correction of low haemoglobin level may be a therapeutic option for congestive heart failure patients⁴. When anaemia in congestive heart failure is treated with erythropoietin and intravenous iron, a marked improvement in cardiac function is seen, associated with shorter hospitalisation, less renal impairment and reduced need for diuretics⁵.

The prevalence of anaemia in patients with heart failure in developed countries has been found to be in the range of 15%⁶ to 49%⁷. Such wide variations were probably due to the differences in study population and the definition of anaemia used. Literature search did not reveal any research on iron and congestive heart failure^{8,9,10,11}. The prevalence of anaemia in congestive heart failure in Sri Lanka is likely to be higher given the increased prevalence of anaemia seen in the general population. The aim of this study is to determine the clinical characteristics of anaemia in Congestive Heart Failure patients.

Method

Patients admitted to the Professorial Medical Unit of Colombo South Teaching Hospital and those attending the professorial medical clinics in 2008 between January and December were selected. Only patients showing an ejection fraction of 45% or less in a 2D echo done within the past 6 months were included in the study. The most recent haemoglobin done within a period of 3 months was recorded along with the red cell indices whenever available. Blood urea and serum creatinine levels determined within last 3 months were also noted from the clinic records. None of these patients had a course of haematinics prescribed during the 3 months prior to admission.

A haemoglobin level of 12g/dl or less was considered as the cut off for anaemia for both sexes. This level conform with most studies done so far^{1,2,3,4,5}.

Results

The total of 70 patients were studied, of them 59% were males. The average age was 62.9 years. About half (48%) had an ejection fraction of 30% or less (moderate heart failure) and another 34% of them had an ejection fraction of between 30% and 40 % (mild heart failure).

Of the patients 68% had anaemia, of them 82% were females. This figure recorded was high (47%) even if the cut off for anaemia was taken as 11g/d. Only 50% of anaemic patients had had their red cell indices recorded. This showed only 12.5% of them had mean corpuscular haemoglobin, mean corpuscular haemoglobin concentration and mean corpuscular volume values indicating hypochromic microcytic anaemia. This is the commonest morphological type of anaemia in Sri Lanka. The remaining patients had normochromic normocytic anaemia. There were no patients who had mean corpuscular volume values indicating macrocytic anaemia.

Renal function test results were available in 38 patients of whom 34% (one third) had creatinine values suggestive of renal impairment (serum creatinine more than 120 µmol/L). This suggests that renal impairment may have been a contributory cause for anaemia in one third of patients.

Discussion

This study revealed that about two thirds (68%) of the congestive heart failure patients had anaemia. This is much higher than the rates of anaemia seen in the West⁷. Although the cut-off value of haemoglobin level for anaemia continues to be debatable, it was found to be a common complication in congestive heart failure patients. There are several possible causes for anaemia in heart failure. These include haemodilution, renal dysfunction, inflammatory cytokines, malnutrition caused by malabsorption due to right-sided heart failure, decreased perfusion of bone marrow, and drug therapy, eg. ACE inhibitors¹⁰.

There is sufficient evidence to suggest that treatment of anaemia in these patients with recombinant erythropoietin and iron would result in symptomatic improvement and reduced need of hospitalization¹². Large

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scale double blind studies are necessary to confirm any survival benefit as well.

Conclusion

This study shows that 68% of patients with congestive heart failure have anaemia, this could further aggravate the outcome of their CHF. It is interesting to note that the current guidelines do not provide specific recommendations for evaluation and treatment of anaemia in congestive heart failure. Correction of anaemia could improve the cardiac function, exercise tolerance and even long term prognosis. Physicians and primary care providers should detect and treat anaemia in congestive heart failure. This should be added to the established Congestive Heart Failure therapy.

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The most beautiful thing is to see a person smiling...
And even more beautiful is, knowing that you are the reason behind it !!!

On their 40th wedding anniversary and during the banquet celebrating it, Tom was asked to give his friends a brief account of the benefits of such long duration.

“Tell us Tom, Just what is it you have learned from all those wonderful years with your wife?”

Tom responds, “Well, I’ve learned that marriage is the best teacher of all. It teaches you loyalty, forbearance, meekness, self-restraint, forgiveness – and a great many other qualities you wouldn’t have needed if you’d stayed single