



A COMMUNITY BASED SURVEY ON OCCURENCE OF 'ANEMIA IN CHRONIC DISEASE' IN COPD.

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ABSTRACT

Chronic obstructive pulmonary disease (COPD) is the long term obstruction of air flow characterized by shortness of breath, cough and sputum production mainly caused by chronic smoking and allergens affecting people above 35 years. Many chronic diseases have been shown to affect haematopoiesis, resulting in shortening of red blood cell (RBC) lifespan and sequestration of iron in macrophages, and leading to so-called anemia of chronic disease (ACD). Theoretically, chronic obstructive pulmonary disease (COPD) is another candidate likely to be associated with ACD, when considered in relation to already-known systemic effects of the disease. Anemia is seen in 10-30% of Chronic Obstructive Pulmonary Disease (COPD) patients (from previous data). Anaemia is such a common and simple clinical finding that we may underestimate its physiological relevance in COPD. There is emerging data suggesting that anaemia may be associated with increased disease severity, and perhaps mortality, in COPD. A prospective study was conducted. The Haemoglobin values were collected from physician diagnosed COPD patients of Udaya health care centre after obtaining patient consent. Out of 155 patients 78 patients haemoglobin values were collected after obtaining consent from them and anemic status of patients are evaluated. Out of 78 patients, 56 patients were found to be anemic. A total of 71.79% of patients are found to be anemic. The anemic patients were categorised based on their anemic values into mild, moderate and severe anemia. 60.71% of patients are found as having mild anemia, 33.92% of patients having moderate anemia and 5.35% of patients as severe anaemia.

KEYWORDS: COPD, Anemia of chronic disease (ACD), Anemia.

INTRODUCTION

Chronic obstructive pulmonary disease COPD, a common preventable and treatable disease, is characterised by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases. Exacerbations and comorbidities contribute to the overall severity in individual patients.^[1] Many chronic diseases have been shown to affect haematopoiesis, resulting in shortening of red blood cell (RBC) lifespan and sequestration of iron in macrophages, and leading to so-called anemia of chronic disease (ACD). Theoretically, chronic obstructive pulmonary disease (COPD) is another candidate likely to be associated with ACD, when considered in relation to already-known systemic effects of the disease.^[2] Anemia in chronic illness is characterized by weakness, fatigue, cachexia, nutritional state, and impaired mood, cognitive functions, and quality of life.^[3] It has been suggested that anemia to some extent contributes to exercise limitation and dyspnea in chronic illness.^[4] Anaemia is such a common

and simple clinical finding that we may underestimate its physiological relevance in COPD. COPD patients with low haemoglobin levels have a poorer prognosis than COPD patients with normal haemoglobin levels.^[5] COPD is expected to become the third leading cause of death worldwide by 2020.^[6]

Polycythemia, traditionally thought to be highly prevalent in COPD, occurs less frequently nowadays with more rigorous correction of hypoxemia.^[7] Conversely, recent reports suggest that anemia in patients with COPD is highly prevalent and associated with increased mortality.^[8,9] Anemia is such a common and simple clinical finding that we may underestimate its physiological relevance in COPD.^[10]

The prevalence of anemia in the general population increases with age, and the condition described as anemia of inflammation or anemia of chronic disease is found in many chronic diseases. COPD is also chronic inflammatory disease that affects an aging population.^[11] There is emerging data suggesting that anaemia may be

associated with increased disease severity, and perhaps mortality, in COPD. Thus a prospective study was conducted to find out incidence of anemia in COPD.

MATERIALS AND METHODOLOGY

(1) Physician diagnosed COPD patients were included in our study.

(2) Patients were assessed as per study Inclusion and exclusion criteria.

(3) In COPD patients serum haemoglobin analysis was done to assess severity of anemia.

Inclusion Criteria

The patients included in the study were men and women (both smokers and non-smokers) aged 30 years or above with history suggestive of COPD (cough with sputum production in chronic bronchitis and breathlessness in emphysema).

Anemia was defined by hemoglobin level is less than 10gm/dl.

Exclusion Criteria

- Patients with current chest pain or pain with forceful expiration, had recent surgery of the eye, chest or the abdomen;
- had a recent heart attack, stroke, tuberculosis exposure, hemoptysis, a history of detached retina or pneumothoraxcardiovascular disease (uncontrolled blood pressure, irregular pulse on examination, taking medication for major arrhythmia, having an implanted defibrillator, or history of congenital heart disease) or taking certain prescription medications (a monoamine oxidase inhibitor, an anticonvulsant, a tricyclic antidepressant plus current treatment for cardiac disease, or potassium lowering drugs).
- Also, women who were pregnant or breastfeeding were excluded.

The Haemoglobin values were collected from physician diagnosed COPD patients of Udaya health care centre after obtaining patient consent .The values were collected and analysed later to determine the anaemic status of the patients.

Eligibility Criteria for Anemia: COPD patients having hemoglobin level less than 10 g/dl were considered as anaemic.

RESULTS AND DISCUSSION

Anemia is an understudied issue in COPD but may be of great importance in this disease. In previous studies, prevalence of anemia in patients with COPD ranges from 7.5% to 34%, depending upon the populations selected and diagnostic tools employed to determine the level of haemoglobin.^[12] In our cohort, anemia is present in as many as 72% of all COPD patients, which is higher than the findings from previous studies. 78 patient's haemoglobin values were collected after obtaining consent from them and anemic status of patients are evaluated. Out of 78 patients,56 patients were found to

be anemic. A total of 71.79% of patients are found to be anemic. The anemic patients were categorised based on their anemic values into mild, moderate and severe anemia. The following results were obtained.60.71% of patients are found as having mild anemia,33.92% of patients having moderate anemia and 5.35% of patients as severe anemia.

Table no.1: Distribution of study group

Criteria	Frequency	Percentage
Anemia	56	71.79
No Anemia	22	28.20
Total	78	100%

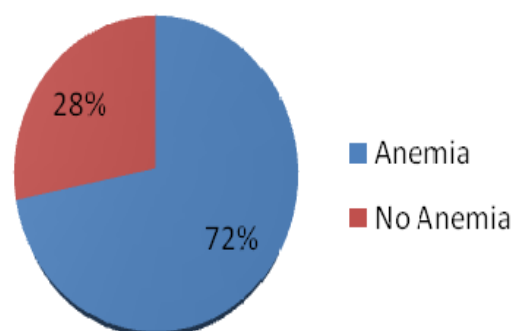


Fig no 1:- Distribution of study group.

Table no 2: Severity of anemic status of patients.

HB (gm%)	Male	Female	Total	Percentage
Mild (9.5-10)	29	5	34	60.71%
Moderate (8-9.5)	18	1	19	33.92%
Severe (<8)	2	1	3	5.35%
Total	49	7	56	100%

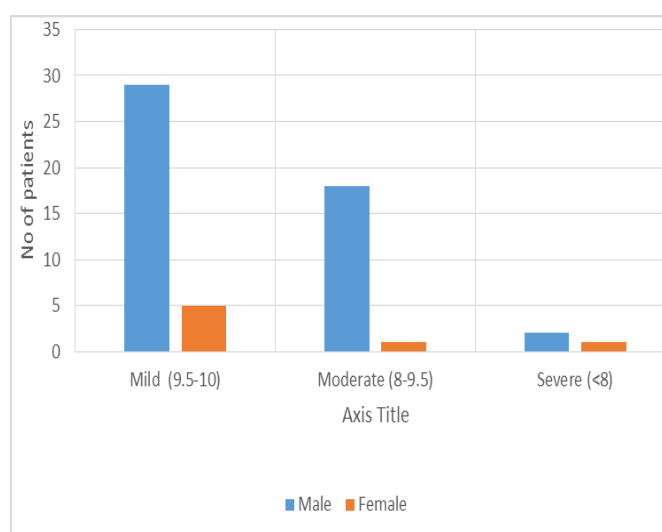


Fig. 2: Categorisation of patients based on their severity of anemia.

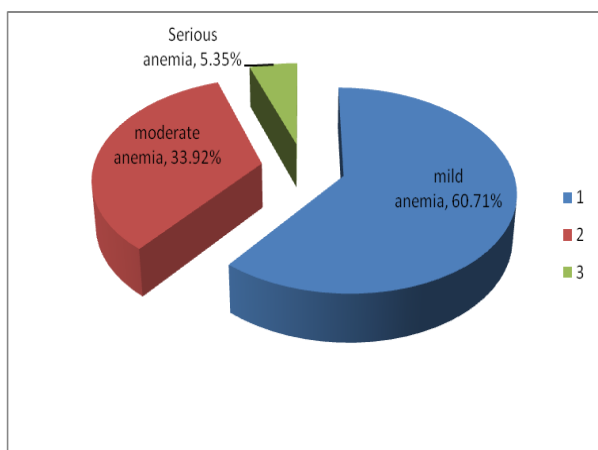


Fig.no 3: Categorisation of severity of anemia.

Table 3: Anemia distribution of study group.

Parameter	Male	Female	Total	P - value
Anemia	49 (87.5%)	7 (12.5%)	56	< 0.05 Non Significant
No anemia	19 (86.36%)	3 (13.63%)	22	
Total	68	10	78	

(Chi-square 0.01825, d.f =1, P < 0.05)

The distribution of anemia in male and female is 87.5% and 12.5% respectively, which is statistically non-significant.

Our study shows that anemia occurs relatively frequently in COPD patients and most common is anemia of chronic disease type, because systemic inflammations likely to play a major role in the setting of COPD, particularly since it has been identified as the cause of one third of all anemia cases observed in the community-dwelling elderly population.^[13]

COPD fulfills the criteria of a chronic, inflammatory, multisystem disease leading to the expectation of anemia. While anemia in chronic heart failure or renal insufficiency has been frequently investigated, it is understudied in COPD.

LIMITATIONS

Our study is limited by a relative small number of patients for future studies, larger study populations were needed. Our study has not defined the type of anemia observed in COPD patients. Our study has not included treatment and follow up of anemia in COPD due to time constrains.

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