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RESEARCH ARTICLE

PREVALENCE OF ANEMIA IN MEN DUE TO VARIOUS CAUSES IN KANCHEEPURAM DISTRICT

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Abstract

Background:

Anemia is a major public health problem in India. According to the World Health Organization (WHO), there are two billion people with anemia in the world and half of the anemia is due to iron deficiency. So anemia and iron deficiency lead to substantial physical productivity losses in adults.

Materials and methods:

We performed a retrospective observational study using routine clinical data from patients attending the out patient clinics of SSSMC & RI hospital in Thiruporur from Jan 2014 to Dec 2014. The survey assessed only for men with anemia based on the nutritional status, alcoholism, tobacco use and parasitic infections.

Results:

Evaluation of anemia was conducted in 430 men. The overall prevalence of anemia was 100%. Of which 40% were due to nutritional status, 25% were due to alcoholism, 25% were due to parasitic infections and 10% were due to tobacco use.

Conclusion:

In our study the most prevalent rate of anemia was due to nutritional status. Anemia is the most prevalent nutritional deficiency. So immediate remedial steps are needed, on community basis to improve the nutritional status, control alcoholism, parasitic infestation and tobacco use.

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INTRODUCTION

According to the World Health Organization (WHO), there are two billion people with anemia in the world and half of the anemia is due to iron deficiency. Anemia is a late indicator of iron deficiency, so it is estimated that the prevalence of iron deficiency is 2.5 times that of anemia. These staggering figures have important economic and health consequences for low and middle income countries. Anemia and iron deficiency lead to substantial physical productivity losses in adults⁽¹⁾.

Iron deficiency anemia is diminished red blood cell production due to low iron stores in the body. It is the most common nutritional disorder worldwide and accounts for approximately one half of anemia cases.⁽²⁾ Iron deficiency anemia can result from inadequate iron intake, decreased iron absorption, increased iron demand, and increased iron loss.⁽³⁾

People who abuse alcohol are at risk for numerous alcohol related medical complications, including those affecting the blood (i.e., the blood cells as well as proteins present in the blood plasma) and the bone marrow, where

the blood cells are produced. Alcohol's adverse effects on the blood- building, or hematopoietic, system are both direct and indirect.

The direct consequences of excessive alcohol consumption include toxic effects on the bone marrow; the blood cell precursors; and the mature red blood cells (RBC's), white blood cells (WBC's), and platelets. Alcohol's indirect effects include nutritional deficiencies that impair the production and function of various blood cells. These direct and indirect effects of alcohol can result in serious medical problems for the drinker. For example, anemia resulting from diminished RBC production and impaired RBC metabolism and function which can cause fatigue, shortness of breath, light headedness, and even reduced mental capacity and cardiac dysfunction.⁽⁴⁾

Malnutrition and anemia are associated with infection and arise from a combination of mechanisms that involve chronic inflammation, malabsorption, and blood loss. These short term sequelae can lead to adverse consequences such as impaired physical and cognitive development. According to WHO, 90% of at risk- school aged children received treatment in 2009, but only 11% of the same population was treated in 2010. Inconsistent treatment can contribute to chronic morbidity, including from malnutrition and anemia.⁽⁵⁾

Use of tobacco in smokeless form is capable of stimulating prostaglandin E2(PGE2) and interleukin -1 release by human gingival keratinocytes and the levels were higher in smokeless tobacco users as compared to non users. Such inflammatory cytokines can depress erythropoietin production leading to the development of anemia.⁽⁶⁾

Parasitic infestations caused by protozoa and helminths continue to take their toll on mankind. The misery these parasites inflict on humans remain a major health problem worldwide. Anemia, which can be mild to severe, acute or chronic, is commonly associated with parasitic infestations. It is, however, only one of the multitudes of complications associated with parasitic infestations.⁽⁷⁾

This study aimed to describe the prevalence of anemia in nutritional status, alcoholism, parasitic infections, and tobacco use in men.

MATERIALS AND METHODS:

We performed a retrospective observational study using routine clinical data from patients attending the out patient clinics of SSSMC & RI hospital in Thiruporur from Jan 2014 to Dec 2014. Prevalence rate of anemia was calculated and analyzed.

Inclusion criteria:

The Inclusion criteria was only men with the age range of over 20 years with the history of alcoholism, tobacco use, nutritional status and those infected with parasitic infections.

Exclusion criteria:

HIV infected patients, Malignant conditions, CRF, Bleeding disorders & Female patients were excluded.

RESULTS:

Anemia is a major public health problem in India. Although nearly three quarters of the Indian population live in rural areas, the epidemiology of anemia in rural settings is not well known. Anemia is estimated to affect half the adolescents in developing countries. In this study, we observed an increased prevalence of anemia due to various causes. This study aimed to describe an increased prevalence of anemia due to various causes such as nutritional status, alcoholism, parasitic infections, and tobacco use.

We included 430 male patients with anemia. Our finding, 100% anemic, in which 40% were due to nutritional status, 25% were parasitic infections, 25% were alcohol, and 10% were tobacco use and prevalence was higher in nutritional status in men over 20 years of age as shown in the **Table 1**. Overall prevalence of nutritional status was due to poor hygienic & poor sanitary conditions, open air defecation, improperly cooked food, inadequate education & less awareness in this rural area. The prevalence of malnutrition in the study area was high and it might be varied by community.

The results of this study can be used by public health programme. In this retrospective observational study using routine clinical data from a large number of patients attending the out patient clinics of a rural hospital in SSSMC & RI, anemia was present in the majority of Men due to nutritional status. While the issue of malnutrition in developing countries is multifaceted, studies demonstrated that it is strongly rooted in poverty. Thus interventions should also encompass strategies for poverty alleviation.⁽⁸⁾

Table 1: shows prevalence of anemia due to different causes

Nutritional status	Alcoholism	Parasitic infections	Tobacco use	Total %
40%	25%	25%	10%	100

DISCUSSION:

In this retrospective observational study using routine clinical data from 430 number of patients attending the out patient clinics in our hospital, we have focussed 100% anemia in men, of which 40 % for nutritional status followed by 25% for Alcohol and parasitic infections and 10% for tobacco use.

Johnson-Wimbley TD, Graham DY also proved Iron deficiency anemia is diminished red blood cell production due to low iron stores in the body. It is the most common nutritional disorder worldwide and accounts for approximately one half of anemia cases. Anemia is the most prevalent nutritional deficiency affecting about the quarter of the world population.⁽⁹⁾

Like our data Harold S. Ballard, M.D. also stated that hemolysis can be an underlying cause of anemia and several types of hemolytic anemia may be caused by chronic heavy alcohol consumption. Alcohol has numerous adverse effects on the various types of blood cells and their functions. For example, heavy alcohol consumption can cause generalized suppression of blood cell production and the production of structurally abnormal blood cell precursors that cannot mature into functional cells.⁽⁴⁾

We observed anemia in men may be due to the number of intestinal parasite present in the intestine, the metabolic process of the parasite reduction of the immune response as a result of malnutrition or change in the life style of the infested person. These have been reported by other researchers. The association between low hemoglobin and parasite positivity seems possible because intestinal parasites are lodged in the duodenum and jejunum, the site of iron absorption.⁽¹⁰⁾ Hookworm infestation is known to result in anemia due to chronic blood loss.^(11,12) Anemia caused by parasitic infestation with nutritional undertone is due to a deficiency of iron, folic acid, B-complex and protein.⁽¹¹⁾

Nagaraj B Kalburg, Arati C Koregal et al. reported that the habit of chewing tobacco is increasing because of its free availability, cheaper cost. Tobacco components have been shown to modify the production of cytokines or inflammatory mediators. Nicotine is one of the deleterious products of cigarette has shown to have a great effect on the release of cytokines from neutrophils. So cigarette smoking may affect the systemic markers related to anemia of chronic disease. This study correlates with our reports.⁽⁶⁾

CONCLUSIÓN:

In our rural setting, most patients attending out patient clinics had anemia. The highest prevalence of anemia was observed in nutritional status due to poor hygienic, poor sanitary conditions, open air defecation, improperly cooked food, low socioeconomic status, decreased nutritious food intake, incomplete education, less awareness. Our study might be used to reduce the huge burden of anemia in men and also helps to improve quality of life. Hence immediate remedial steps are needed on community basis to improve the nutritional status, control alcoholism, parasitic infestation and tobacco use.

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