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A Hospital Based Prospective Study on the Prevalence of Anaemia In Elderly Patients

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ABSTRACT

Anaemia is a common disorder in older individuals. The prevalence of anaemia increases with age to over >20% in persons aged 65 years and over[1]. The aim of the present study was to analyse the prevalence rate of anaemia, and evaluate the various underlying causes, the haematological profile and types of anaemia in elder patients. A total of 82 subjects of age 65yrs and above were included in our study. Laboratory profiles along with various clinical conditions were collected to analyse the underlying cause. Majority of patients had Mild anaemia with a normocytic sub categorization. Pallor was the most common symptom, found in our study. The various underlying causes found were fever, renal problem, hypertension, diabetes mellitus, COPD, tuberculosis, etc. Identifying anaemia as an important aspect of a -comprehensive geriatric assessment is absolutely essential further to clinical detection. Confirming the type of anaemia is critical to direct the investigation for profiling the etiology since it is well known that the treatment of anaemia goes a long way in improving the overall outcome and quality of life.

Keywords: Anaemia, Geriatrics, Fe deficiency, Anaemia of chronic disease

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INTRODUCTION

Anaemia is a common condition in the older population[2], and the prevalence of anaemia rises with advancing age. Although it was previously believed that declines in haemoglobin levels might be a normal consequence of aging, evidence has accumulated that anaemia does reflect poor health and increased vulnerability to adverse outcomes in older persons. Even in persons 85 years and older, those meeting the World Health Organization (WHO)definition of anaemia were found to have higher subsequent mortality rates than persons who were not anaemic[3].“ Anaemia is defined as a below normal plasma haemoglobin concentration resulting from a decreased number of circulating red blood cells or on an abnormally low total haemoglobin content per unit of blood volume”[4]. According to World Health Organization, a working definition of anaemia in the adult is a level less than the normal mean minus two standard deviations i.e, haemoglobin below14.0g/dl in men and below 12.3g/dl in women[5].Multiple pathophysiologic abnormalities in a single patient are well known. Rectification of any of these abnormalities contributes significantly to overall improved outcome with respect to physiological parameters as well as quality of life[6,7.] The study aims to analyse the prevalence rate of anaemia, and evaluate the various underlying causes, the haematological profile and types of anaemia in elder patients .

MATERIALS AND METHOD

The study was carried out at a community Health Centre, at Palakkad district. A Prospective – Hospital based study was conducted which includes Geriatric people at age 65 and above of either sex, presenting to the hospital fulfilling WHO criteria of anaemia (haemoglobin (Hb) <13 in males, Hb <12 in females). Outpatients, non-anaemic geriatrics, paediatrics, pregnant women and patients of age below 65 yrs. were excluded. The study was carried out over a period of 5 months. A Case report Form was designed with all the necessary parameters which include patient’s demographies, their present complaints and past medical history, laboratory investigations etc. The consent for the study was obtained from the hospital authorities. The details of our study were collected from the case sheets and laboratory results and were recorded. These recorded cases were then analyzed for further interpretations. for all patients—Hb with its severity grades, total leucocyte count (TLC), differential leucocyte count (DLC), erythrocyte sedimentation rate (ESR), platelet count, mean corpuscular volume (MCV), mean corpuscular haemoglobin concentration (MCHC), mean corpuscular haemoglobin (MCH), packed cell volume (PCV), reticulocyte count. The symptom analysis of anaemic patients was done. Patients were also analysed based upon underlying co morbid conditions.

RESULTS AND DISCUSSION

Out of 82 subjects, 30(36.6%) were male and 52(63.4%) were female. Literature survey shows that the prevalence of anaemia is more common in males than females, which was contrary to our study as it showed more prevalence in female.

Out of 82 subjects, 37% were male and 63% were female. In our study population, the subjects were categorized into three age groups, 65-74yrs, 75-84yrs, and 85yrs and above, in which a greater number of cases 28% in males and 46% in females were reported under the agegroup65-74yrs.On the basis of haemoglobin level, the severity of anaemia is graded into Grade0 (>11gm/dl), Grade1/Mild (9.5-10.9gm/dl), Grade2/Moderate (8-9.4gm/dl), Grade3/Severe (6.5-7.9gm/dl) and Grade4/Life threatening (below 6.5gm/dl), in which our study revealed 7(8.5%)males and 1.2%female, 14.6% males and (26.8%) females, 7(8.5%) males and 19(23.2%) females, 2(2.4%)males and 3(3.7%) females and 4(4.9%)males and 6(7.3%) females in each group respectively. Studies conducted by Mauro Tettamanti et al also supports that the mild anaemia is more prevalent in elderly peoples and our study also revealed the same[8].(Table & Figure4).On the basis of Mean Corpuscular Volume, anaemia is characterized into Microcytic (MCV < 80fl), Normocytic (MCV 80-100fl), and Macrocytic (MCV >100fl), in which our study revealed more number of patients having Normocytic, Male 25(30.4%) & female 42(51.2%)[9].Ayalew Tefferi, MD also reports about the importance of the sub characterization of anaemia on the basis of MCV values. Pallor was the most common symptom, found in 31(37.8%) patients. Giddiness/Vertigo was the next common symptom which were present in 24(29.3%) patients. Headache 19(23.1%), Weakness 16(19.5%), Fatigue 15(18.3%), Dyspnoea and Palpitation 7 (8.5%), Chill 5(6.1%) were the other sign and symptoms reported in the study.(Table &Figure7). Amit Bhasin et al.,(2011) discussed about the importance of considering the mild symptoms discussed and specified that milder symptoms should not be ignored[2].Our study found that the older people having multiple morbidities are more prone to have anaemia, male-11(13.4%) &female 22(26.8%), the others having unexplained anaemia ranks the second, male 10(12.2%) &female 16(19.5%) and single disease condition ranks the last, male 9(10.9%) & female 14(17.1%).Study conducted by Rachion JS etal, reported similar observation with regard to the co-morbidity in elder patient with anaemia. The various underlying causes found were fever, renal problem, hypertension, diabetes mellitus, COPD, tuberculosis, cancer, cardiac problems, fatty liver, pneumonia, asthma, UTI, gastritis, hypothyroidism, eczema, pancytopenia, hepatitis, parkinsonism and others under which fever was the more prevalent one[10].

Table 1: Gender Wise Distribution

Sr.no	Gender	No of patients (n=82)	Percentage (%)
1.	Male	30	36.6
2.	Female	52	63.4

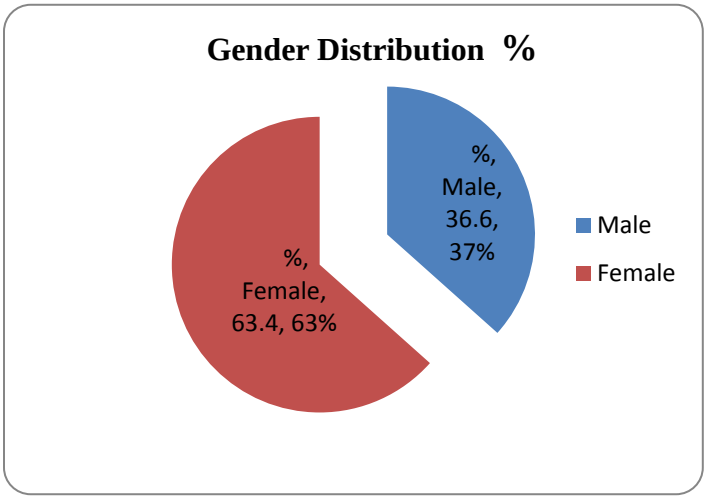

Figure 1: Gender Wise Distribution

Table 2: Age Wise Distribution

Sr.no	Age in years	No of patients (n=82)			
		Male	(%)	Female	(%)
1.	65-74	23	28.0	38	46.3
2.	75-84	6	7.0	13	15.9
3.	≥ 85	1	1	1	1

Table 3: Distribution of Severity of Anemia On the Basis of Hemoglobin Level

Sr.no	Grades & severity of anemia	Hemoglobin level(gm./dl)	No of patients(n=82)			
			Male	(%)	Female	(%)
1.	Grade 0	>11	7	8.5	1	1.2
2.	Mild/(Grade 1)	9.5-10.9	12	14.6	22	26.8
3.	Moderate(Grade 2)	8.0-9.4	7	8.5	19	23.2
4.	Severe(Grade 3)	6.5-7.9	2	2.4	3	3.7
5.	Life threatening (Grade 4)	<6.5	4	4.9	6	7.3

Table 4: Anemia characterization based on mean Corpuscular Volume

Sr.no	Anemia characterization	Mean corpuscular volume	No of patients(n=82)			
			Male	(%)	Female	(%)
1.	Microcytic anaemia	< 80 fl	4	4.8	10	12.2
2.	Normocytic anaemia	80-100 fl	25	30.5	42	51.2
3.	Macrocytic anaemia	> 100	1	1.2	-	-

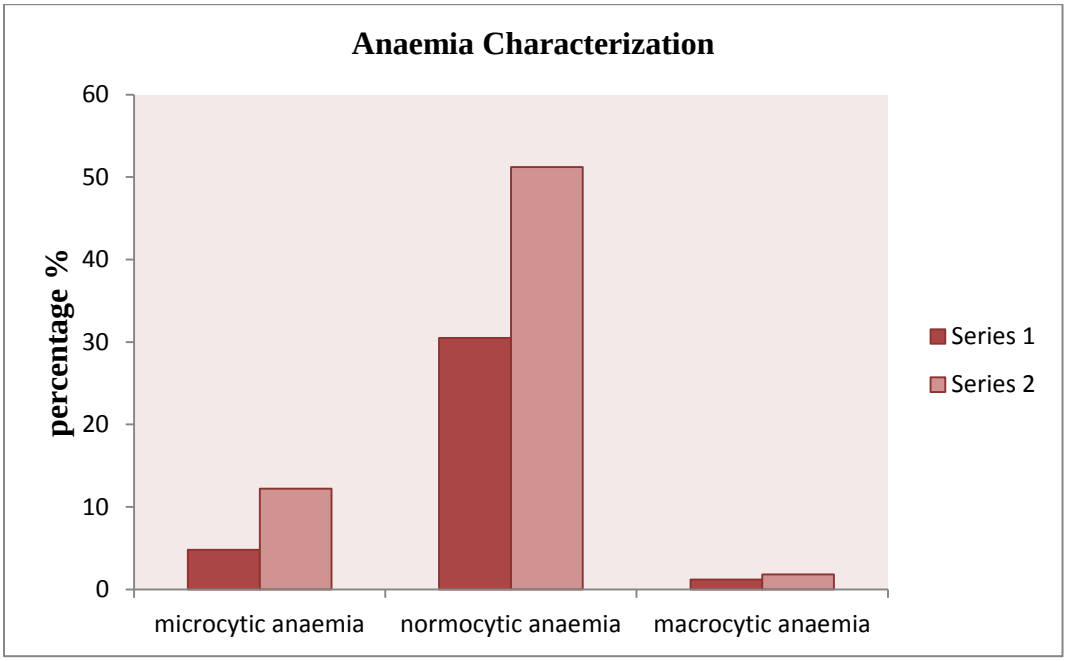

Figure 2: Anemia Characterization Based On Mean Corpuscular Volume

Table 5: sign & symptom analysis

Sr.no	Sign & symptoms	No of patients(n=82)			
		Male	(%)	Female	(%)
1.	Fatigue	5	6.1	10	12.2
2.	Dyspnoea	9	10.9	2	2.4
3.	Pallor	11	13.4	20	24.4
4.	Weakness/ Tiredness	5	6.1	15	18.3
5.	Palpitation	1	1.2	6	7.3
6.	Chillness	-	-	5	6.1
7.	Giddiness/Vertigo	3	3.7	21	25.6
6.	Headache	6	7.3	13	15.8

Table 6: number of disease conditions

Sr.no	Number of conditions	No of patients			
		Male	(%)	Female	(%)
1.	Single	9	10.9	14	17.1
2.	Multiple	11	13.4	22	26.8
3.	Others	10	12.2	16	19.5

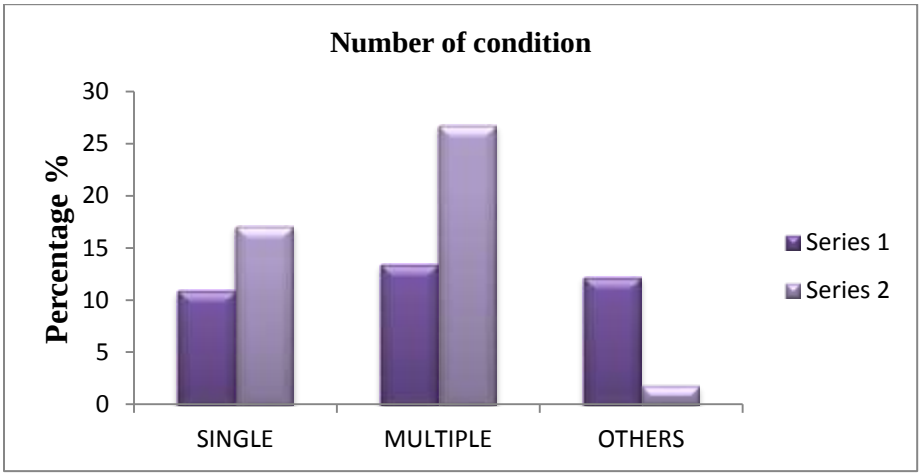

Figure 3: Number of Disease Conditions

Table 7: prevalence of conditions

Sl no	Conditions	No. of patients			
		Male	(%)	Female	(%)
1.	Fever	7	8.5	21	25.6
2.	Renal problems	3	3.7	5	6.1
3.	Hypertension	2	2.4	15	18.3
4.	Diabetes	6	7.3	16	19.5
5.	COPD	6	7.3	2	2.4
6.	Tuberculosis	2	2.4	1	1.2
7.	Asthma	2	2.4	2	2.4
8.	Pneumonia	2	2.4	-	-
9.	Heart problems	4	4.9	3	3.7
10.	Gastritis	1	1.2	3	3.7
11.	Fatty liver	1	1.2	4	4.9
12.	Hypothyroidism	1	1.2	-	-
13.	Cancer	2	2.4	1	1.2
14.	Parkinsonism	1	1.2	-	-
15.	Hepatitis	1	1.2	-	-
16.	Pancytopenia	1	1.2	-	-
17	Eczema	1	1.2	-	-
18	UTI	1	1.2	2	2.4
19	Others	10	12.2	16	19.5

CONCLUSION

Anaemia is a common condition, albeit not severe, in the older population, and the prevalence of anaemia rises with advancing age. It is an important sign, not a diagnosis that often point to a serious and possibly treatable medical condition[11]. Identifying anaemia as an important aspect of a comprehensive geriatric assessment is absolutely essential further to clinical detection. Literature survey revealed that, Anaemia in geriatrics is mostly seen in male population than

females. The studies done on prevalence of anaemia in geriatrics showed that with increasing age, the prevalence rate raises rapidly. On the basis of haemoglobin levels, most of the cases were found to be Mild[12]. Literature surveys revealed that the haemoglobin level is a major indicator to classify anaemia into mild, moderate, severe and life threatening. Confirming the type of anaemia is critical to direct the investigation for profiling the etiology since it is well known that the treatment of anaemia goes a long way in improving the overall outcome and quality of life. The mean red blood cell volume (mean corpuscular volume [MCV]) is used first to classify the anaemic process as microcytic, normocytic, or macrocytic. The critical issue in evaluating any form of anaemia is to recognize treatable causes early. In normocytic anaemia, the treatable causes include ACD, nutritional anaemia, anaemia of renal insufficiency, and haemolyticanaemia[13].The study analyzed that, the older population with multiple morbidities exacerbates anaemia. The literatures states that the multiple causes for anaemia in elderly persons and the influence of anaemia and anaemia treatment on the pathogenesis of associated conditions justify a complete anaemia evaluation rather than a piecemeal approach. The study evaluated that the most common symptoms present in our study subjects were pallor, giddiness/vertigo, headache, palpitation, dyspnoea etc. Failure to evaluate anaemia in elderly could lead to delayed diagnosis of potentially treatable conditions. Nonspecific symptoms of anaemia should not be ignored in the geriatric population as they could be important pointers towards presence of anaemia in these patients[14]. An effort should always be made to reach etiological diagnosis before instituting specific therapy. A comprehensive history, physical examination, and laboratory evaluation are required for an elderly person found to have anaemia. Low Hb is a powerful prognostic marker for multiple adverse outcomes in the elderly. Clinicians Should be alerted to the increased risk of morbidity, hospitalization, and mortality in cases of anaemia in the elderly. Patient education and awareness on anaemia in elderly patients is more important and the health practitioners must educate them to have documentation of their Hb concentration if it is low. Thus, if hospitalization occurs, their baseline Hb will be available.

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