ISSN:0975-3583,0976-2833 VOL13,ISSUE05,2022

Anaemia In Elderly – A Diagnostic Study In a Tertiary Care Hospital of Odisha.

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Abstract

Background: Aging is a natural and inevitable biological process. Aging is a progressive generalized impairment of function. There is sharp increase in elderly population in both developed and developing countries due to increase in life style and average life expectancy. Anaemia of chronic disease is due to infections, inflammation or neoplastic that persist for more than 1 or 2 months. It is the most common anaemic in elderly because of the existence of more chronic disease

Material and Methods:

The present work has been undertaken in the dept of medicine SCB medical college from 2006 to 2008. Out of which 150 patients above 65 years who completed agree to provide the consent for the study.

Results

In this study there were 85(56.67%) males and 65(43.23%) females. Majority of the patients 116(77.33%) were in between 66 to 70 years.

Out of 150 study patients, all are symptomatic and weakness 56(37.33%) followed by the Fever 34(22.67%) is the most common symptoms.

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In the above study out of 150 cases, Pallor was the commonest sign. 42% had pedal edema, glossitis and stomatitis was present in 33.33% and 16.67% of cases were febrile. Anaemic patient microcytic anaemia was the most common type with a highest no of cases 83(55.40%). Which includes 46(30.73%) males and 37(24.67%) females. Followed by the normocytic anaemia 55(36.6%) of which 32(21.33%) males and 23(15.27%) females. Anisocytic was present in 9(6%) which includes 6(4%) males and 3(2%) females. Only 3(2%) patients has macrocytic anaemia and all were males. It was found that male outnumbered female in all groups. Out of which Iron deficiency anaemia with 47(56.63%) was the most common cause. Anaemia of chronic disease contributed 9(10.83%). In another cases 27(32.54%) anaemia of chronic disease is associated with iron deficiency.

Out of 55 cases of normocytic anaemia maximum number of cases from chronic disease 38(69%).

Similarly out of 3 macrocytic anaemia maximum no. of cases from both Iron folic acid and Vitamin B12 deficiency 2(66.7%) cases. Out of 85 anaemic males, the mean and standard deviation was 5.3±1.76 gm% and out of 65 anaemic females, the mean and standard deviation was 5.6 ±1.92gm% .

The mean and SD level was found 2.4± 1.7ng/ml in folic acid deficiency patients while mean and SD Vitamin B12 level was found 111±8.3 ng/ml. Aetiological classification of anaemia in elderly showed that Iron deficiency anaemia was the commonest causes of anaemia, present in 70(46.67%) cases of which 42(28%) were males and 28(18.67%) were females.

Pancytopenia was detected in 22 patients with Aplastic anamia 15(68.18%) cases was the most commonest cause. In 2 cases of MDS, others like ALL, AML, CLL, TSS and multiple myeloma are only 1 case out of 22 patients.

Heamatological malignancies were present in 15 elderly patients. Multiple myeloma with 5(33.33%) cases was the commonest cause.

Out of 32 cases were presented with upper GI haemorrhage. Gastric ulcer and CA of stomach were the commonest endoscopic finding each with 7(21.19%) cases.

Conclusion

Out of 150 anaemic elderly taken up for the study, Male (56.67%) are more anaemic than Female patients. Weakness was the commonest presentation while pallor was the commonest sign. Microcytic anaemia was the commonest type of anaemia according to peripheral smear comment.

The important cause of anaemia were iron deficiency, anaemia of chronic diseases, Aplastic anaemia and unknown cause, megaloblastic anaemia and Hypothyroidim. Peptic ulcer disease was the commonest cause of iron deficiency anaemia . Malignnancy and chronic renal failure (35.71%) each were the common causes of anaemia of chronic diseases.

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Keywords: Anaemia, Elderly Patients

Introduction

In India, the geriatric population was 103.8 million by end of the 2011, the projected figure for 2025 is likely to be 177 million. In India, 45% of older Indian (>65yr) have chronic disease and disabilities. Very few hospital based studies on disease and functional health status of aged persons have been undertaken in India. [1]

In fact, many underlying disorders, such as myelodysplastic syndrome (MDS), other blood cell disorders, cancer, chronic kidney disease (CKD), or certain gastrointestinal (GI) diseases develop more frequently at advanced age. In many patients, different etiologies may act together and thereby contribute to the development of anemias at older age.[2,3]

World Health Organization (WHO) thresholds were established in 1968 in a cohort of persons <65 years old, defining anemia as a hemoglobin (Hb) level of <130 g/L in men and <120 g/L in women. However, Hb levels decline with age and are distinct in different ethnic groups. So far, the WHO definition of anemia has been applied in the majority of studies at older age.[4]

The management of anemias in older individuals is a clinical challenge, especially when the etiology remains uncertain and/or (multiple) comorbidities are present. An underestimated aspect is that because of age-related changes, organ function such as erythropoietin (EPO) production in the kidney or red cell production in the BM may be too low to prevent anemia under certain pathologic conditions. Management and treatment of anemia in older patients usually require a multidisciplinary approach as well as detailed investigations of organ function. In many cases, supplementation therapy or elimination of the underlying etiology can correct the anemia. In other cases, long-term treatment with interventional drugs, continuous therapy with EPO, or transfusions are required to control the anemia. With all these therapies, efficacy and benefit have to be balanced against safety and quality of life (QoL). [5]javascript:; In this article, we review current concepts surrounding clinical relevance, pathogenesis, and management of anemia in older patients.

Anemia is most frequent at older age, reaching a prevalence of ~17% in the cohort of older persons >65 years of age. [6] Improved diagnostics and demographic changes in our societies have resulted in an increase in the incidence and prevalence of anemia in past decades.

Aims and Objectives: Anaemia in Elderly – A Diagnostic approach is designated to find out the prevalence and aetiology of anaemia in elderly hospitalized patients.

Material and methodology

The study will be conducted in elderly (>65 years) patients of either sex admitted to the department of medicine SCB Medical college and Hospital, Cuttack for symptoms of anaemia and another illness but found to be anaemia.

Place of study: This study was carried out in the department of Medicine , SCB medical college and hospital, cuttack .

Period of study. Feb 2006 to Aug 2007

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Inclusive Criteria

Those patients who not refused the detailed work of regarding their haematological status or were able to afford the investigation were included from the study.

Patients with anaemia and elderly population should be included.

Exclusive Criteria

Those patients who refused the detailed work of regarding their haematological status or were unable to afford the investigation were excluded from the study.

Consent:- consent was taken for specialized investigations when required.

Study protocol: the cases will be subjected to through clinical examination including history taking followed by relevant investigations till a cause is found.

Results.

During the period of study the total number of elderly patients hospitalized with multiple ailments were 2614. Out of these 1830(70%) were males and 784(30%) were females. Out of which 150 elderly patients completed the detailed work up & were included in the study.

Table 1.0 Age and Gender wise distribution of study subjects (150)

Age	Gender					
	Male		Female		Total	
Age	No.	%	No.	%	No.	%
66-70	63	74.12	53	81.54	116	77.33
71-75	15	17.65	7	10.77	22	14.67
76-80	6	7.06	3	4.62	9	6.00
>80	1	1.18	2	3.08	3	2.00
Total	85	100	65	100	150	100.00

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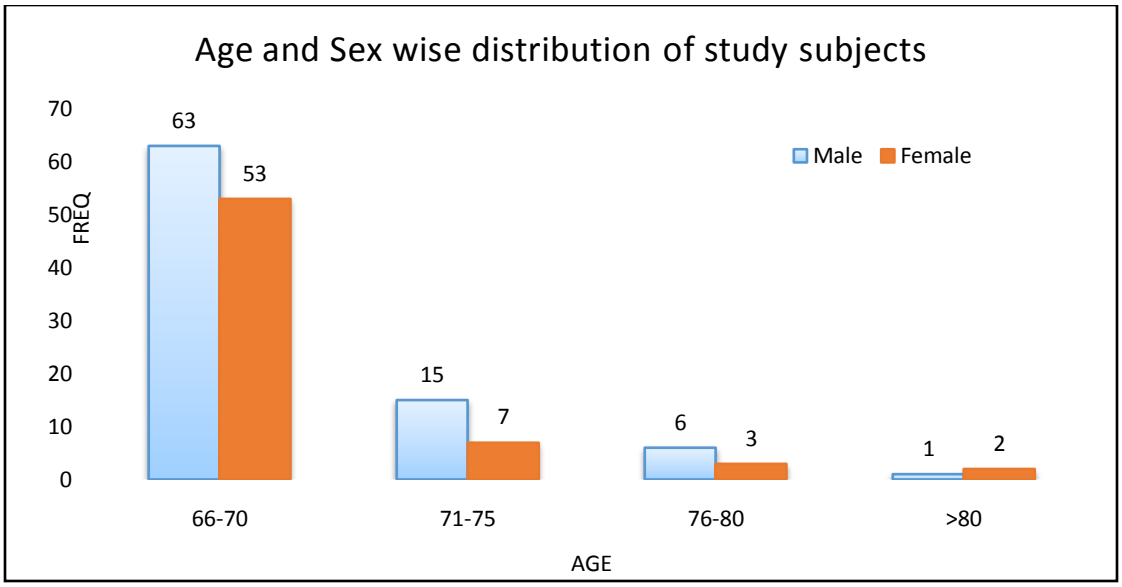

Fig 1.0 age and gender wise distribution

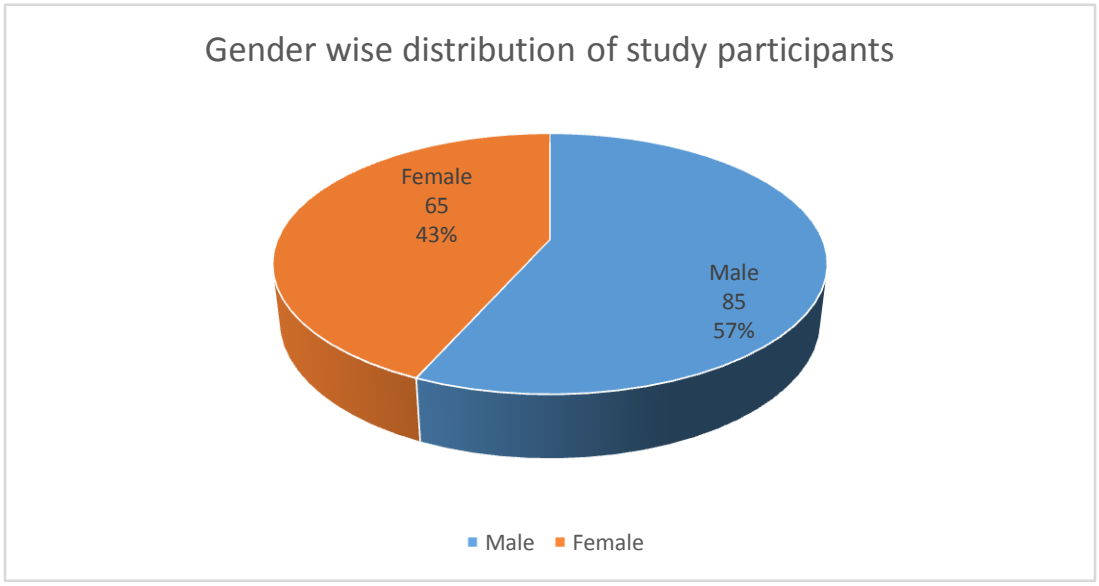

Fig 2.0 Gender wise distribution

From the above table and fig 1.0 gives there 85(56.67%) males and 65(43.23%) females. Majority of the patients 116(77.33%) were in between 66 to 70 years

Table 2.0 Symptoms of 150 study subjects

Symptoms	No. of cases	Percentage
Weakness	56	37.33

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Fever	34	22.67
Melaena	20	13.33
Haematemesis	17	11.33
Loss of Appetite	16	10.67
Breathlessness	16	10.67
Swelling of Feet	7	4.67
Back pain/Bone Pain	7	4.67
Palpitation	4	2.67
Bleeding (Gum, Nnose,Skin)	3	2.00
Anasarca	3	2.00
Joint Pain	3	2.00
Weight Loss	2	1.33
Syncope	2	1.33
Vertogo	2	1.33
Jaundice	2	1.33
CVA	2	1.33
Confusion	1	0.67
Headache	1	0.67
abdomen swelling	1	0.67

Out of 150 study patients, all are symptomatic and weakness 56(37.33%) followed by the Fever 34(22.67%) is the most common symptoms.

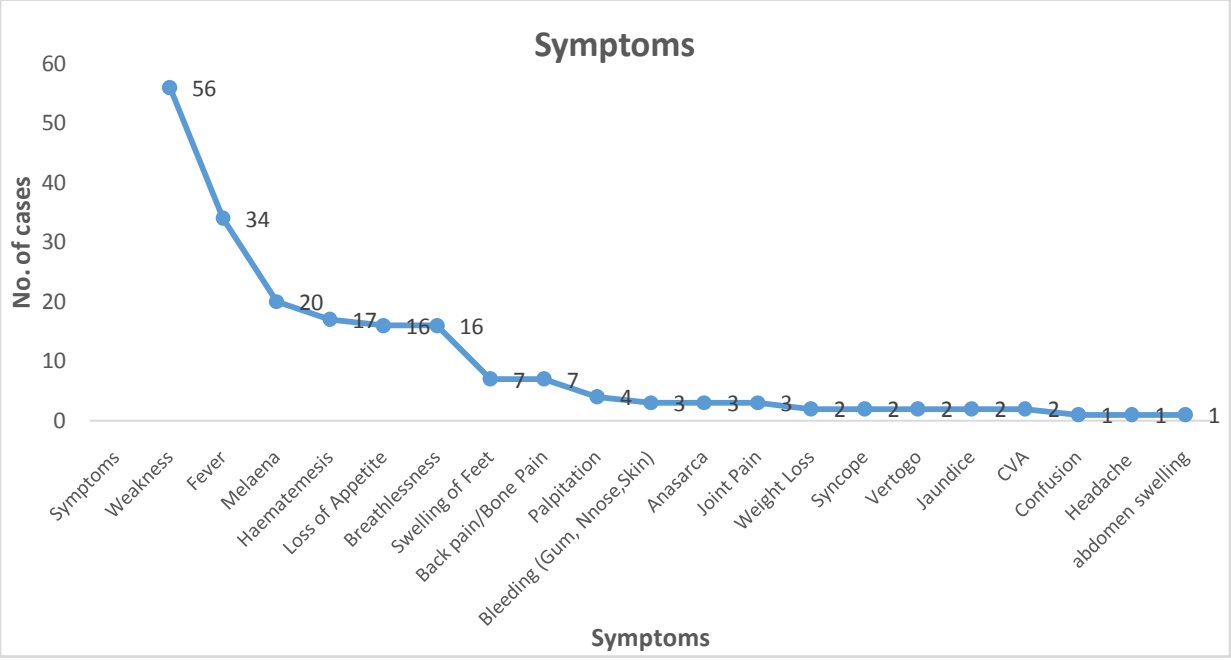

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Fig 3.0 Symptoms

Table 3.0 Clinical Signs

Clinical signs	No. of Cases	percentage
Pallor	150	100.00
Pedal Edema	63	42.00
Glossitis and Stomatitis	50	33.33
Fever	25	16.67
Hypertension	18	12.00
Lymphodenopathy	10	6.67
Splenomegaly	12	8.00
Haepatomegaly	11	7.33
Ascites	9	6.00
Bone Tenderness	6	4.00
Gum Bleeding	6	4.00
Echymoses	4	2.67
Sternal Tenderness	3	2.00
Koilonychia	2	1.33
Purpura	1	0.67
Temporal Artery Thickening	1	0.67
Retinal Haemorrage	1	0.67

In the above table out of 150 cases, Pallor was the commonest sign. 42% had pedal edema, glossitis and stomatitis was present in 33.33% and 16.67% of cases were febrile. Hypertension in 12%, lymphadenopathy is 10.67%, splenomegaly in 8%, haepatomegaly is 7.3% and ascites in 6%. Others are very few cases 1(0.7%).

Table 4.0 Gender wise types of Anaemia

Types of Anaemia	Gender				Total	
	Male		Female			
	No.	%	No.	%	No.	%
Microcytic	46	30.73	37	24.67	83	55.4
Normocytic	32	21.33	23	15.27	55	36.6
Anisocytic	6	4	3	2	9	6
Macrocytic	3	2	_		3	2

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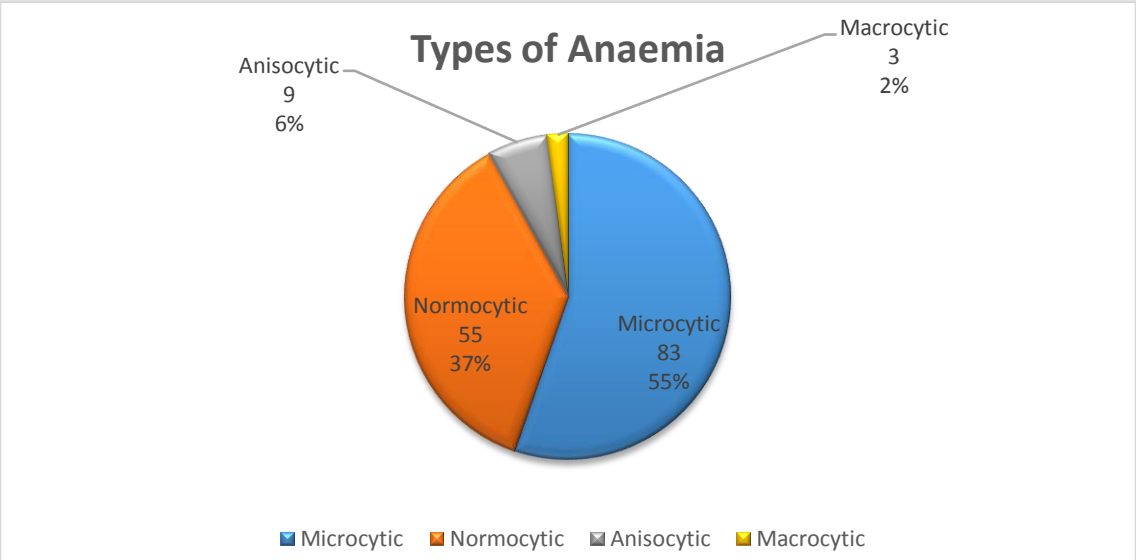

Fig 4.0 gender wise types of anaemia

From the above table and figure gives out of 150 elderly anaemic patient microcytic anaemia was the most common type with a highest no of cases 83(55.40%). Which includes 46(30.73%) males and 37(24.67%) females. Followed by the normocytic anaemia 55(36.6%) of which 32(21.33%) males and 23(15.27%) females. Anisocytic was present in 9(6%) which includes 6(4%) males and 3(2%) females. Only 3(2%) patients has macrocytic anaemia and all were males. It was found that male outnumbered female in all groups.

Table 5.0 Causes of anaemia

Causes	**Gender**				**Total**	
	Male		Female			
	No.	%	No.	%	No.	%
Iron Deficiency	27	32.54	20	24.09	47	56.63
Anaemia of chronic disease	5	6.02	4	4.81	9	10.83
Iron deficiency + Anaemia of chronic disease	13	15.66	14	16.88	27	32.54

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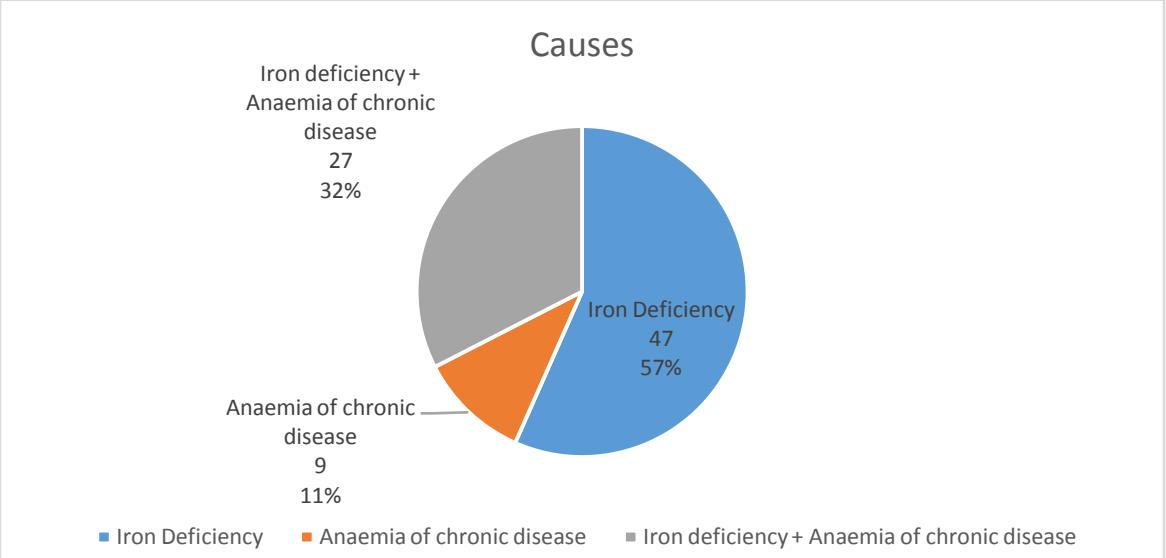

Fig 5.0 Causes of anaemia

In this study microcytic anaemia was present in 83 patients out of which Iron deficiency anaemia with 47(56.63%) was the most common cause. 27(32.54%) were male and 20(24.09%) were females. Anaemia of chronic disease contributed 9(10.83%). In another cases 27(32.54%) anaemia of chronic disease is associated with iron deficiency.

Out of 55 cases of normocytic anaemia maximum number of cases from chronic disease 38(69%).

Similarly out of 3 macrocytic anaemia maximum no. of cases from both Iron folic acid and Vitamin B12 deficiency 2(66.7%) cases.

In case of Anisocytosis anaemia present in 9 cases. Out of which chronic disease with 4(44.44%) was commonest cause of anisocytosis. Followed by the 3(33.33%)cases Iron deficiency anaemia.

Table 6.0 Hb(gm%) level in elderly anaemic patients

Gender	Hb(gm%)
	Mean±SD
Male	5.3±1.76
Female	5.6±1.92
Both(150)	5.8±1.89

From the above table gives out of 85 anaemic males, the mean and standard deviation was 5.3±1.76 gm% and out of 65 anaemic females, the mean and standard deviation was 5.6±1.92gm% ,while considering both males and females the mean and standard deviation were 5.8±1.89 gm% .

Table 7.0 Serum Ferritin level in elderly Anaemic Patient

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Serum Ferritin level in elderly Anaemic Patient	**Mean±SD(mg/ml)**	**Normal**
Causes		
Iron deficiency anaemia	13±1.3	>15
Anaemia of chronic disease	125±16.68	>100
Both	54±23.94	15-100

From the above table Serum Ferritin level gives the iron deficiency anaemia was mean and standard deviation was 13.1.3±1.76 ng/ml with chronic disease the mean and standard deviation ferritin level was 125± 16.68 , while both was associated with ferritin level with a mean and standard deviation was 54±23.94 ng/ml.

Table 8.0 Mean Folic Acid level in patient with folic acid and Vit-B12 deficiency

	Anaemic Patients	
	Mean±SD	Normal
Vitamin B12 (pg/ml)	111±8.3	>250
Folic acid level (ng/ml)	2.4±1.7	3.1-17.5

In the study the mean and SD level was found 2.4± 1.7ng/ml in folic acid deficiency patients while mean and SD Vitamin B12 level was found 111±8.3 ng/ml.

Table 9.0 Aetiology of Anaemia in Elderly (n=150)

Causes	Gender				Total	
	Male		Female			
	No.	%	No.	%	No.	%
Iron Deficiency	42	28	28	18.67	70	56.63
Anaemia of chronic disease	29	19.33	26	17.33	55	36.67
Aplastic Anaemia	10	6.67	5	3.33	15	10
Unknown Cause	3	2	3	2	6	4
Megaloblastic anaemia	3	2			3	2
Hypothyroidism			1	0.67	1	0.67

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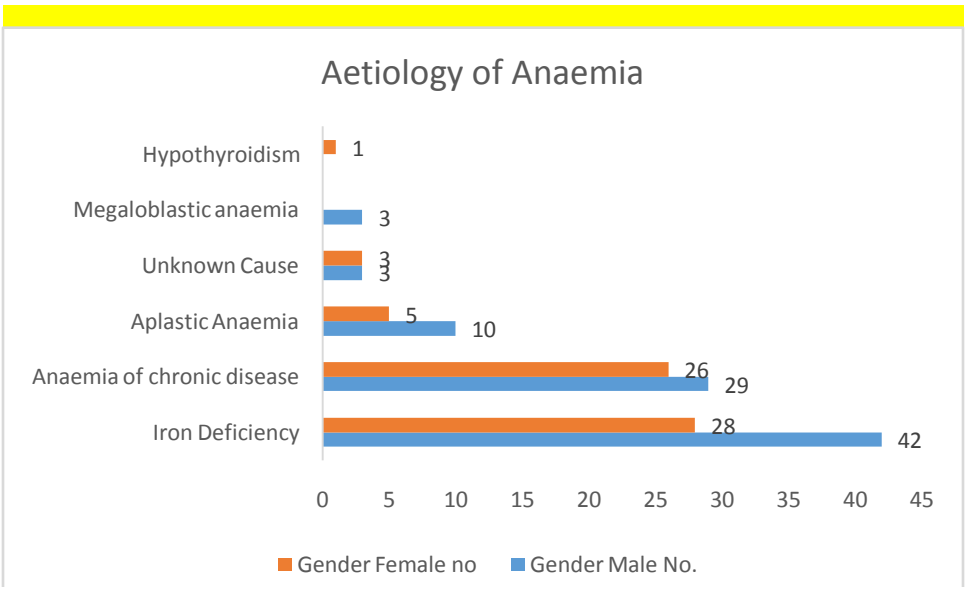

Fig 6.0 Aetiology of Anaemia

From the above table aetiological classification of anaemia in elderly showed that Iron deficiency anaemia was the commonest causes of anaemia, present in 70(46.67%) cases of which 42(28%) were males and 28(18.67%) were females.

Anaemia of chronic disease was the next common cause of anaemia with 55(36.67%) cases affecting 29(19.33%) male and 26(17.33%) women and there were 15(10%) case of aplastic anaemia and 3(2%) cases of megaloblastic anaemia. Only 1 cases due to hypothyroid but unknown or no definite cause of anaemia 6(4%) could ascertained.

Table 10.0 Causes of Iron deficiency Anaemia in Elderly (n=70)

Causes	Gender				Total	
	Male		Female			
	No.	%	No.	%	No.	%
peptic ulcer disease	12	17.14	8	11.43	20	28.57
Nutritional	9	12.86	7	10	16	22.86
Upper GI malignancy	7	10	5	7.14	12	17.14
Lower GI malignancy	4	5.71	1	1.4	5	7.14
Worm	4	5.71	2	2.8	6	8.58
Haemorrhoids	1	1.4	2	2.8	3	4.2
Colonic Polyp	1	1.4	1	1.4	2	2.8
Gastric Polyp	1	1.4	1	1.4	2	2.8
Unknown bleeding from GI tract	2	2.8			2	2.8
Other malignancy	1	1.4	1	1.4	2	2.8

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From the above 70 patients had iron deficiency anaemia. Peptic ulcer disease was commonest cause with 20(28.57%), gastrointestinal malignancies 17(24.28%) and iron deficiency 12(17.14%). cases had the upper gastrointestinal malignancies and 5(7.14%) lower gastrointestinal malignancies. 16(22.86%) cases were due to poor nutritional status while worm infection account 6(8.58%). Others are very few cases like gall bladder, colonic polyp, haemorrhoid, unknown bleeding etc.

Table 11.0 Diseases Associated with anaemia of chronic disease (n=55)

Associated disease	**Gender**				**Total**	
	Male		Female			
	No.	%	No.	%	No.	%
Chronic infection	2	3.57	2	3.57	4	7.14
Collagen vascular disease	2	3.57	4	7.14	6	10.71
Chronic liver disease	3	5.36			3	5.36
Malignancy	12	21.42	8	14.29	20	35.71
Chronic Renal Failure	10	17.86	10	17.86	20	35.71
Other			2	3.63	2	3.63

Out of 55 anaemia chronic disease malignancies and chronic renal failure both were the most common cause of anaemia is 20(35.71%).collagen vascular disease accounted 6(10.71%) cases while chronic liver disease is 3(5.36%). In 4(7.14%) cases, chronic infections were the cause.

Table 12.0 Causes of Pancytopenia in Elderly(n=22)

Causes	Gender				Total	
	Male		Female			
	No.	%	No.	%	No.	%
Aplastic anaemia	10	45.45	5	22.73	15	68.18
MDS	1	4.54	1	4.54	2	9.08
AML	1	4.54			1	4.54
ALL	1	4.54			1	4.54
CLL	1	4.54			1	4.54
Multiple Myeloma	1	4.54			1	4.54
Tropical splenomegaly syndrome			1	4.54	1	4.54

Pancytopenia was detected in 22 patients with Aplastic anamia 15(68.18%) cases was the most commonest cause. In 2 cases of MDS, others like ALL, AML, CLL,TSS and multiple myeloma are only 1 case out of 22 patients.

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Table 13.0 Disease Diagnnosed by Bone arrow Study in selected Elderly Patients (n=31)

Disease & BM Abnormalities	Total o. of Cases	Percentage
Aplastic Anaemia	15	48.39
Plasma cell dyscrasia	6	19.35
Myelodysplastic sydrome	3	9.68
Acute myeloid leukemia	2	6.45
Megaloblastic anaemia	2	6.45
TSS	1	3.22
ALL	1	3.22
CLL	1	3.22

From the above table Aplastic anaemia accounted for 15(48.39%) cases of bone marrow abnormalities in elderly anaemia patient. 6 cases of plasma cell dyscrasia and 3 cases of MDS were diagnosed by bone marrow study.

Table 14.0 Study of Haematological malignancies in Elderly (n=15)

Types of malignancies	Total No. of Cases	Percentage
Multiple myeloma	5	33.33
MDS	3	20
AML	2	13.33
Waldestrom's macroglobulinemia	1	6.67
Hodgkin's lymphoma	1	6.67
Non-Hodgkin's lymphoma	1	6.67
ALL	1	6.67
CLL	1	6.67

Heamatological malignancies were present in 15 elderly patients. Multiple myeloma with 5(33.33%) cases was the commonest cause followed by myelodysplastic syndrome 3(20%) cases. There were 2(13.33%) cases of acute myeloid leukemia. And all others (ALL, CLL,Hodgkin’s disease etc.) were found in 1(6.67%) cases

Table15.0 Endoscopic findings in Elderly study patients presented with upper GI Haemorrhage (n=32)

Endoscopic findings	Total o. of Cases	Percentage
Gastric Ulcer	7	21.16
CA of stomach	7	21.19

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Duodenal ulcer	6	18.75
Multiple gastric erosion	4	12.5
Oesophagitis	2	6.25
severe gastritis	2	6.25
Oesophageal varix	2	6.25
Dieulofoy's lession	2	6.25

From the above table 32 cases were presented with upper GI haemorrhage. Gastric ulcer and CA of stomach were the commonest endoscopic finding each with 7(21.19%) cases. Duodenal ulcer was present in 6(18.75%) cases. In 4(12.5%) cases, multiple gastric erosion was the endoscopic findings. Oesophagitis, severe gastritis, Oesophageal varix, Dieulofoy's lesion 2(6.25%) cases each were the endoscopic findings.

Discussion

The present work has been undertaken in the dept of medicine SCB medical college from 2006 to 2008. During this period 2614 elderly patients, 1830(70%) were male and 783(30%) female. Out of which 150patients above 65 years who completed agree to provide the consent for the study.

In this study there were 85(56.67%) males and 65(43.23%) females. Majority of the patients 116(77.33%) were in between 66 to 70 years.
In the study by Joosten E (1997) [7] found to be 61% male and 39% female geriatric population.

Out of 150 study patients, all are symptomatic and weakness 56(37.33%) followed by the Fever 34(22.67%) is the most common symptoms.

In the above table out of 150 cases, Pallor was the commonest sign. 42% had pedal edema, glossitis and stomatitis was present in 33.33% and 16.67% of cases were febrile. Hypertension in 12%, lymphadenopathy is 10.67%, splenomegaly in 8%, haepatomegaly is 7.3% and ascites in 6%. Others are very few cases 1(0.7%).

From the above table and fig gives out of 150 elderly anaemic patient microcytic anaemia was the most common type with a highest no of cases 83(55.40%). Which includes 46(30.73%) males and 37(24.67%) females. Followed by the normocytic anaemia 55(36.6%) of which 32(21.33%) males and 23(15.27%) females. Anisocytic was present in 9(6%) which includes 6(4%) males and 3(2%) females. Only 3(2%) patients has macrocytic anaemia and all were males. It was found that male outnumbered female in all groups

Similar observations were made in studies by Gautier M and Cohen HJ [9]. Where aplastic anaemia and Myelodysplastic syndrome accounted for majority cases of pancytopenia.

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In this study microcytic anaemia was present in 83 patients out of which Iron deficiency anaemia with 47(56.63%) was the most common cause. 27(32.54%) were male and 20(24.09%) were females. Anaemia of chronic disease contributed 9(10.83%). In another cases 27(32.54%) anaemia of chronic disease is associated with iron deficiency.

Out of 55 cases of normocytic anaemia maximum number of cases from chronic disease 38(69%).

Similarly out of 3 macrocytic anaemia maximum no. of cases from both Iron folic acid and Vitamin B12 deficiency 2(66.7%) cases.

In case of Anisocytosis anaemia present in 9 cases. Out of which chronic disease with 4(44.44%) was commonest cause of anisocytosis. Followed by the 3(33.33%)cases Iron deficiency anaemia. From the above table gives out of 85 anaemic males, the mean and standard deviation was 5.3±1.76 gm% and out of 65 anaemic females, the mean and standard deviation was 5.6±1.92gm% ,while considering both males and females the mean and standard deviation were 5.8±1.89 gm% .

From the above table Serum Ferritin level gives the iron deficiency anaemia was mean and standard deviation was 13.1.3±1.76 ng/ml with chronic disease the mean and standard deviation ferritin level was 125± 16.68 , while both was associated with ferritin level with a mean and standard deviation was 54±23.94 ng/ml.

In the study the mean and SD level was found 2.4± 1.7ng/ml in folic acid deficiency patients while mean and SD Vitamin B12 level was found 111±8.3 ng/ml.
A similar observation was made in an Indian study by Ramalingaswamy V [8]. Where folic acid deficiency and Vitamin B12 deficiency was the commonest cause of megaloblastic anaemia.

From the above table aetiological classification of anaemia in elderly showed that Iron deficiency anaemia was the commonest causes of anaemia, present in 70(46.67%) cases of which 42(28%) were males and 28(18.67%) were females.

Anaemia of chronic disease was the next common cause of anaemia with 55(36.67%) cases affecting 29(19.33%) male and 26(17.33%) women and there were 15(10%) case of aplastic anaemia and 3(2%) cases of megaloblastic anaemia. Only 1 cases due to hypothyroid but unknown or no definite cause of anaemia 6(4%) could ascertained.

Out of 55 anaemia chronic disease malignancies and chronic renal failure both were the most common cause of anaemia is 20(35.71%).collagen vascular disease accounted 6(10.71%) cases while chronic liver disease is 3(5.36%). In 4(7.14%) cases, chronic infections were the cause.
Study by Freedman ML et al [10] showed megalobalstic anaemia was the commonest cause

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followed by multiple myeloma among the diseases diagnosed by BM aspiration in elderly.

Pancytopenia was detected in 22 patients with Aplastic anamia 15(68.18%) cases was the most commonest cause. In 2 cases of MDS, others like ALL, AML, CLL,TSS and multiple myeloma are only 1 case out of 22 patients.

From the above table Aplastic anaemia accounted for 15(48.39%) cases of bone marrow abnormalities in elderly anaemia patient. 6 cases of plasma cell dyscrasia and 3 cases of MDS were diagnosed by bone marrow study.

Heamatological malignancies were present in 15 elderly patients. Multiple myeloma with 5(33.33%) cases was the commonest cause followed by myelodysplastic syndrome 3(20%) cases. There were 2(13.33%) cases of acute myeloid leukemia. And all others (ALL, CLL,Hodgkin's disease etc.) were found in 1(6.67%) cases.

A study by Breght R [11] showed that myeloma accounts for 13% of all haematatological malignancies in whites and 33% in blacks.

Out of 32 cases were presented with upper GI haemorrhage. Gastric ulcer and CA of stomach were the commonest endoscopic finding each with 7(21.19%) cases. Duodenal ulcer was present in 6(18.75%) cases. In 4(12.5%) cases, multiple gastric erosion was the endoscopic findings. Oesophagitis, severe gastritis, Oesophageal varix, Dieulofoy's lesion 2(6.25%) cases each were the endoscopic findings.

In a study by Rocky DC[12] in iron deficiency anaemia patients, 19% has peptic ulcer disease which 11% has gastrointestinal malignancy.

From the above 70 patients had iron deficiency anaemia. Peptic ulcer disease was commonest cause with 20(28.57%), gastrointestinal malignancies 17(24.28%) and iron deficiency 12(17.14%). cases had the upper gastrointestinal malignancies and 5(7.14%) lower gastrointestinal malignancies. 16(22.86%) cases were due to poor nutritional status while worm infection account 6(8.58%). Others are very few cases like gall bladder, colonic polyp, haemorrhoid, unknown bleeding etc.

Conclusion

All of them were subjected to detailed history taking, clinical examination and relevant investigations till a cause was found.

Out of 150 anaemic elderly taken up for the study, Male (56.67%) are more anaemic than Female patients. Weakness was the commonest presentation while pallor was the commonest sign. Microcytic anaemia was the commonest type of anaemia according to peripheral smear comment.

The important cause of anaemia were iron deficiency (46.67%), anaemia of chronic diseases (36.67%), Aplastic anaemia (10%) and unknown cause(4%), megaloblastic anaemia (2%) and

ISSN:0975-3583,0976-2833 VOL13,ISSUE05,2022

Hypothyroidim (0.67%). Peptic ulcer disease was the commonest cause of iron deficiency anaemia (28.57%) . Out of 32 cases were presented with upper GI haemorrhage.

Malignnancy and chronic renal failure (35.71%) each were the common causes of anaemia of chronic diseases.

Authors contribution

Conflicts of interest: No funding sources

Funding:

Ethical Approval : Declared

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