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Prevalence of Anaemia in Women

Clinical Research

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ABSTRACT

Anaemia is a common problem prevailing all over the world. Young women are twice as likely to have anaemia than young men because of regular menstrual bleeding. Iron deficiency is the commonest cause of anaemia all over the world. In India , this silent emergency is rampant among women belonging to reproductive age group. The present study shows that anaemia is prevalent in all strata of women irrespective of the economic status and Nutitional anaemia is the commonest. Corrective measures such as Nutritional support and Iron and Folic acid supplementation are suggested.

KEYWORDS:

Anaemia, Reproductive age, Economic status.

INTRODUCTION:

Anaemia is defined as haemoglobin [Hb]concentration in blood below the lower limit of the normal range for the age and sex of the individual. The normal range of Hb conc. is as follows:

Men	13 to 16g/d
Women	12 to 14g/dl
New born infants	15g/dl
Children from 6 months to 6years	11g/dl
Children from 6 to 14 years	12g/dl

Although Hb conc. value is employed as the major parameter for determining the whether or not anaemia is present , the red cell count, haematocrit and absolute values [MCV, MCH and MCHC] provide alternate means of assessing anaemia.

PATHOPHYSIOLOGY OF ANAEMIA

Subnormal level of Hb causes lowered Oxygen carrying capacity of blood. This in turn initiates compensatory physiologic adaptations such as:

- Increased release of Oxygen from Hb
- Increase blood flow to tissues
- Maintenance of blood volume and
- Redistribution of blood flow to , maintain the cerebral blood supply

Eventually, however tissue hypoxia develops causing impaired functions of the affected tissues. Tissues with high Oxygen requirements such as the heart, central nervous system and the skeletal muscle during exercise, bear the brunt of clinical effects of anaemia.

SYMPTOMS OF ANAEMIA:

In symptomatic cases of anaemia the presenting features are:

- Tiredness
- Easy fatigability
- Generalized muscular weakness
- Lethargy and
- Headache

In older patients there may be symptoms of cardiac failure, angina pectoris, intermittent claudication, confusion and visual disturbances.

HAEMOGLOBIN ESTIMATION:

The first and foremost investigation in any suspected case of anaemia is to carry out a Hb estimation in blood. There are several methods available. If the Hb is below the normal for particular age and sex, the patient is said to be anaemic.

CLASSIFICATION OF ANAEMIA:

Several types of classification of anaemias have been proposed. Two of the widely accepted classifications are based on the pathophysiology and morphology.

A. Depending upon the pathophysiology mechanism anaemias are classified into 3 groups.

1. Anaemia due to increased blood loss
   a. Acute post haemorrhagic anaemia
   b.Chronic blood loss

2. Anaemia due to impaired red cell production
a. Cytoplasmic maturation defects:
   i. Deficient haem synthesis [Iron deficiency anaemia].
   ii. Deficient globin synthesis [Thalassaemic syndromes].

b. Nuclear maturation defects:
   i. Vitamin B12 and/or folic acid deficiency [Megaloblastic anaemia]

c. Defect in stem cell proliferation and differentiation.
   iii. Aplastic anaemia
   iv. Pure red cell aplasia

d. Anaemia of chronic disorders
e. Bone marrow infiltration
f. Congenital anaemia

3. Anaemia due to red cell destruction [Haemolytic anaemia]
   a. Extrinsic red cell abnormalities
   b. Intrinsic red cell abnormalities

B. Morphologic:
   1. Microcytic, hypochromic
   2. Normocytic, normochromic
   3. Macrocytic, normochromic

PREVALENCE OF ANAEMIA:

Anaemia is a common problem prevailing all over the world. In U.S.A. 2 to 10% of people have anaemia. Other countries have even higher rate. Young women are twice as likely to have anaemia than young men because of regular menstrual bleeding. Iron deficiency is the commonest cause of anaemia all over the world. In India , this silent emergency is rampant among women belonging to reproductive age group [15-49 years] , children [6 to 35 months] and low socio economic strata of the population. Overall, 72.7 % of children up to the age of 3 years in urban areas and 81.2 % in rural areas are anaemic. More than 50 % pregnant women are anaemic. Overall prevalence of anaemia in India is 80 %.

MATERIAL/ METHODS:

The present data i.e., Hb conc. in blood samples of 40 females is obtained from CRS Railway Hospital, Settipalli [near Tirupati]. Hb estimation is done by Sahli's method. The data pertains to the railway employees or families of railway employees. All of them belong to middle income or high income group.

A total number of forty samples is taken for analysis. It is divided into two groups taking age as criterion. First group consists of the age group

between 13 [teenage] and 30 years. Second group contains the age group from 30 years and above.

DATA SHOWING THE CONC. OF Hb IN WOMEN : 12.010.4 11.0

GROUP 1 [13 to 30years]:

S.NO.	NAME OF THE INDIVIDUAL	AGE [y]	CONC. OF Hb (g/dl)
1	M. V. Pallavi	20	10.8
2	S. Anusha	19	10.0
3	Y. Sireesha	19	11.6
4	E. Ramya	18	11.2
5	E. Swathi	18	11.0
6	K. Aruna	29	10.0
7	Y. Sailaja	28	10.8
8	Marystella	30	11.2
9	G. Vani	25	11.0
10	B.S. Pushpanjali	21	10.0
11	K. Aruna kumari	27	09.6
12	P. Chandana Priya	15	11.0
13	K. Radha	27	10.0
14	J. Syamala	24	10.8
15	A. Eswari	20	11.0
16	Divya Bharathi	22	08.0
17	Y. Sakuntala	24	10.0
18	K. Jyothirmayi	13	10.0
19	S. Aruna Kumari	25	11.6
20	Yuva rani	26	10.2

GROUP 2 [31 to 58 years]:

S.NO.	NAME OF THE INDIVIDUAL	AGE [y]	CONC. OF Hb (g/dl)
1	V. Lakshmi	42	11.8
2	C. Padmavathy	45	10.6
3	Lakshmi Bai	36	11.0
4	N. Kowsalya	45	11.4
5	B. Padmaja	43	12.0
6	P. Rani	48	11.0
7	O. Lakshmamma	53	10.0
8	Gracy	45	09.25
9	Sultan Bee	37	11.2
10	Mangamma	51	09.4
11	N. Kameswari	35	10.0
12	K. Santhi	47	09.0
13	C. Sowdamini	42	11.0
14	Padma	44	09.26
15	Y. Vani	34	10.6
16	G. Suneetha	35	10.0
17	C. S. Sujatha	45	11.0
18	Muni Lakshmi	41	10.0
19	Jaya Lakshmi	58	11.2
20	Sk. Fathima	40	11.0

ANALYSIS OF THE DATA:

Hb.CONC. RANGE [g/dl]	NUMBER OF WOMEN	
	Group 1	Group 2
8----- 8.9	01	00
9----- 9.9	01	04
10-----10.9	10	06
11-----11.9	07	09
12-----12.9	01	01
13-----13.9	00	00
14 and above	00	00

From the analysis of the above data it is known that only two women [one from each group] out of forty women fall under the normal range i.e., 12 to 14 g/dl , remaining thirty eight are anaemic.

% OF ANAEMIA

	GROUP 1	GROUP 2
Total no. of samples	20	20
Normal	01	01
Anaemic	19	19
% of Anaemia	95	95

As per the WHO stipulations, based on the level of Hb conc. anaemia is classified as given below:

Mild anaemia	8 to 12 g/dl
Moderate anaemia	5 to 8 g/dl
Severe anaemia	less than 5g/dl
Survival difficulty	below 2g/dl

According to the above stipulations , the 38 anaemic women can be treated under "Mild anaemic" category.

TREATMENT:

Supplements of iron and Folic acid are the prescribed treatment for mild anaemia [1 tablet / day]. Vegetables , leafy vegetables, fruits, dhal, nuts, high protein are recommended in diet. High doses of iron or blood transfusion may be necessary in case of severe anaemia.

CONTROL MEASURES TAKEN BY GOVT. OF INDIA:

In order to prevent nutritional anaemia , the Govt. of India sponsored a National Nutritional Anaemia Prophylaxis Programme during the fourth five year plan.

The Programme is based on daily supplementation with Iron and Folic acid tablets to prevent mild and moderate anaemia.

Fortification of salt with Iron has been accepted by the Govt. of India as public health approach to reduce prevalence of anaemia. Commercial production of Iron fortified salt was started in 1985. Iron fortification has many advantages over Iron supplementation

CONCLUSION:

- Anaemia is a common health probem prevailing all over world.
- Irrespective of the socioeconomic status it is seen at all strata.
- Nutrional Anaemia (Iron deficiency)is the commonest one
- With Supplementation of Iron and Folic Acid it can be prevented easily
- Pregnant woman and children are to be taken care to ensure healthy future generation
- Awarenes of Balanced diet plays a key role in prevention.
- Steps are to be taken towards this aspect to achieve the goal.

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Fig.1. MECHANISM OF Hb FUNCTION

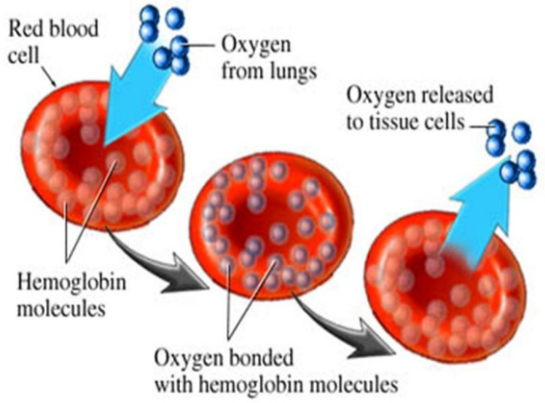


Fig.2

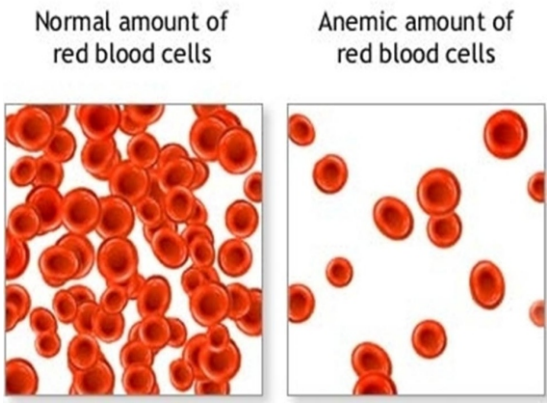
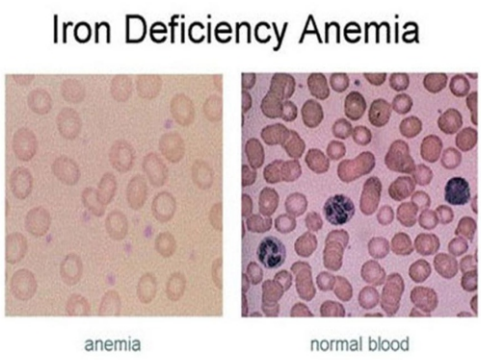


Fig.3



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