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PREVALENCE OF ANEMIA IN PREGNANT WOMEN

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ABSTRACT

The anaemia is state of R.B.C reduction. In India 50% women are affected by this disease. Anemia is mostly appearing in village women. This case more severs during pregnancy. Women of reproductive age are at increased risk of anaemia because of chronic iron depletion. During the menstrual cycle, inadequate dietary intakes and recurrent infections, given the Intensity of the problem in the country, intermittent IFA supplementation to all menstruating Women would be a cost effective strategy to build up iron stores and prevent anaemia. Indian government done many welfare work .build up maternity hospitals in village area, and also provide facility of aganbadi nurses .

KEY WORDS: Anaemia, Recurrent infection, Pregnancy.

INTRODUCTION

Anaemia is a condition in which the number of red blood cells (RBCs), and consequently their oxygen-carrying capacity, is insufficient to meet the body's physiological needs. The function of the RBCs is to deliver oxygen from the lungs to the tissues and carbon dioxide from the tissues to the lungs [1]. this is accomplished by using haemoglobin (Hb), a tetramer protein composed of haem and globin. Anaemia impairs the body's ability for gas exchange by decreasing the number of RBCs transporting oxygen and carbon dioxide. Anaemia results from one or more of the following process: defective red cell production, increased red cell destruction or blood loss. Iron is necessary for synthesis of haemoglobin. Iron deficiency is thought to be the most common cause of anaemia globally, but other nutritional deficiencies (including folate, vitamin B12 and vitamin A), acute and chronic inflammation, parasitic infections, and inherited or acquired disorders that affect Hb synthesis, red blood cell production or red blood cell survival can all cause anaemia [2]. Iron deficiency anaemia results in impaired cognitive and motor development in children and decreased work capacity in adults India is among the countries with high prevalence of anaemia in the world. It is estimated that anemia directly causes 20 per cent of maternal deaths in India and indirectly accounts for

another 20 per cent of maternal deaths [3]. Prevalence of anaemia is higher among pregnant women and preschool children. Even among higher income educated segments of population about 50 per cent of children, adolescent girls and pregnant women are anaemic. Inadequate dietary iron, folate intake due to low vegetable consumption, perhaps low B12 intake and poor bioavailability of dietary iron from the fibre, phytate rich Indian diets are the major factors responsible for high prevalence of anaemia [4]. Increased requirement of iron during growth and pregnancy and chronic blood loss contribute to higher prevalence in specific groups. In India, anaemia is directly or indirectly responsible for 40 percent of maternal deaths. There is 8 to 10-fold increase in MMR when the Hb falls below 5 g/dl [5]. Early detection and effective management of anaemia in pregnancy can contribute substantially to reduction in maternal mortality. Maternal anaemia is associated with poor intrauterine growth and increased risk of preterm births and low birth weight rates. This in turn results in higher perinatal morbidity and mortality, and higher infant mortality rate [6]. A doubling of low birth weight rate and 2 to 3 fold increase in the perinatal mortality rates is seen when the Hb is <8 g/dl. Intrauterine growth retardation and low birth weight inevitably lead to poor growth trajectory in

infancy, childhood and adolescence and contribute to low adult height [7]. Parental height and maternal weight are determinants of intrauterine growth and birth weight. In Foetal consequences of anaemia Studies to define the effect of maternal anaemia on the foetus indicate that different types of decompensation occur with varying degrees of anaemia. Most of the studies suggest that a fall in maternal haemoglobin below 11.0 g/dl is associated with a significant rise in perinatal mortality rate 18, 19, and 25 [7]. There is usually a 2 to 3-fold increase in perinatal mortality rate when maternal haemoglobin levels fall below 8.0 g/dl and 8-10 fold increase when maternal haemoglobin levels fall below 5.0 g/dl. A significant fall in birth weight due to increase in prematurity rate and intrauterine growth retardation has been reported when maternal haemoglobin levels were below 8.0 g/dl [8,9]. Mandatory monthly screening for anaemia became the 'routine' in all antenatal clinics. Skilled management of severe grades of anaemia detected late in pregnancy, through blood transfusion and parenteral iron therapy became the hallmark of good obstetric practice and resulted in maternal and perinatal salvage rates in hospitals 11 [10].

MATERIALS AND MEHODS

The present study was conducted in department of bio chemistry A.P.S. University, Rewa from February 2013. The comparing of 100 patients of anaemia.

Inclusion criteria:-

1. Patient of age 15 to 45 age group.
2. Patient with signs and symptoms of Anaemia.
3. Patients with preliminary investigation like Hb level peripheral blood, serum and bone marrow picture suggestive of Anaemia.

Exclusion criteria:

1. Patient with age less than 45 years.
2. Patient with bleed diasthe sis.
3. Anaemia due to acute blood loss.

A detailed history, recorded particular emphasis on symptoms, suggestive of Anaemia, such as Anaemia weakness and easy feasibility decreased work performance breath less-ness, and swelling over body.

A through physical examination at every patient was done with special reference to pallor nail changes, lymphadenopathy, sternal tenderness, edema, and signs at congestive cardiac failure.

Child anemic patients were classified in 3 grades as per HB level.

Grand	Hb level gm /dl
Grade-0-(wnl)	>13 gm /dl (male) >12 gm /dl (female)
Grade (mild)	10-12 .99 gm/dl (male) 10-11 .99 gm/dl (female)
Grade (moderate)	7.1- 9.99 gm/dl
Grade-3 (severe)	< 7mg/ dl

All patients were to following investigation.

(1) **Hb** : By sahils method, to assess level at Hb. in blood, this was used to grade the severity of Anaemia

(2) **Complete Blood count (C.B.C.):** The CBC consist at Hb concentration haematocrit (packed cell volume), mean corpuscular (MCH), MCH concentration total leukocyte count, and plate lets count, total erythrocyte count, and plate lets count. CBC was performed using automated analyzer. This provides information regarding total R.B.C., W.B.C., and plate lets count, and differential leukocyte count.

Normal DLC is

Neutrophils – 40-80%

Lympho cytes – 20-40%

Mono cytes – 2-10%

Easino Phil -1-6%

Baso Phil – 1-2%

3. Peripheral Smear Examination

It was done by preparing a thin layer with leishman; stain was evaluated for RBC morphology white cell morphology, and plate late count. A special note was made regarding the percentage of 5 or more to be neutrophils, materials, parasites and any other abnormal cell.

4. Reticulocyte count

It was donning by 0-3% alcoholic solution of burilent cresyle blue using the technique described by wintrabe.

Normal value 0.2-2%

5. Reticulocyte index

$$\text{Reticulocyte Index} = \frac{\text{Reticulocyte \%} \times \text{Hct}}{\text{Absolute \% Reticulocyte}}$$

Reticulocyte Index =

Shift Factor

Reticulocyte Index greater then 2 reflect adequate marrow function while less than 2 Reflect hypoplastic marrow

HCL	C shift factor
45%	1
35%	1.5
25%	2
15%	2.5

6. Erythrocyte Sedimentation Rate (E.S.R.)

Western method was used normal value- 0-20 mm/h (male)-0-30 mm/h (Final)

Bone Marrow Examination

Posterior superior iliac spine was preferred site for bone marrow aspiration in adult but if patient was obese then it was done from body of sternum.

Film were prepared and stained with leish man's stain and studies with particular reference to followings -

- Type of bone marrow reaction
- Bone marrow cellular city.

- Myeloid to erythroid ratio.
- Differential cell count.
- Any abnormal cellular other findings.
- Serum protein electrophoresis

The present study clinical profile of Anaemia in pregnant women's was under taken in department of Biochemistry APS University Rewa (M.P.).100 cases diagnosed as Iron deficiency anaemia with age limit of 15-45 were including in this study.

OBSERVATION

Table 1. Distribution of Case According to severity

S.NO	HB in gm %	No. of Patients	Per%
1	Mild anemia 10-12gm	26	26.00%
2	Moderate anemia 7.1-9.99	34	34.00%
3	Severe Anemia	40	40.00%

Table 2. Distribution of case according to the peripheral smear.

S.No.	Morphology	No. of Patients	Per%
1	Normocytic norm chromatic	30	30.00%
2	Micro-cytic hypo chromic	49	49.00%
3	Dimorphic	10	10.00%
4	Megaloblastic	11	11.00%
Total-		100	100%

Figure 1. Distribution of Case according to severity

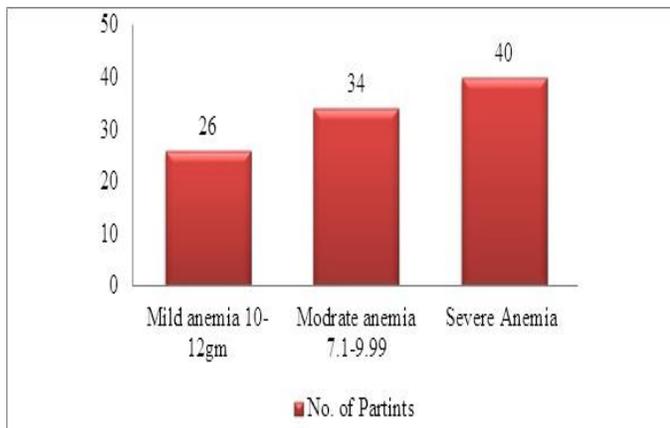


Figure 2. Distribution of case according to the peripheral smear

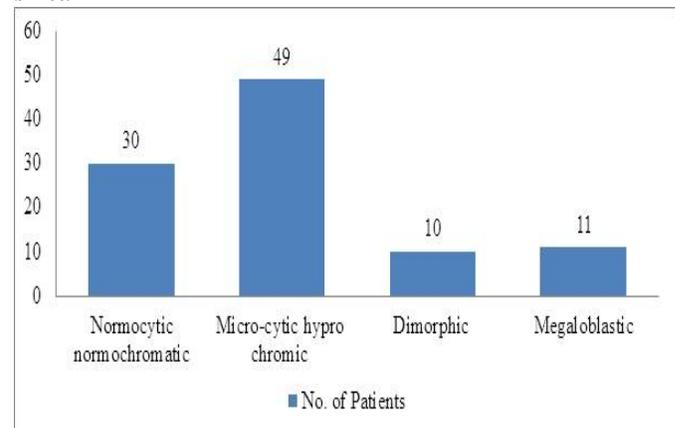
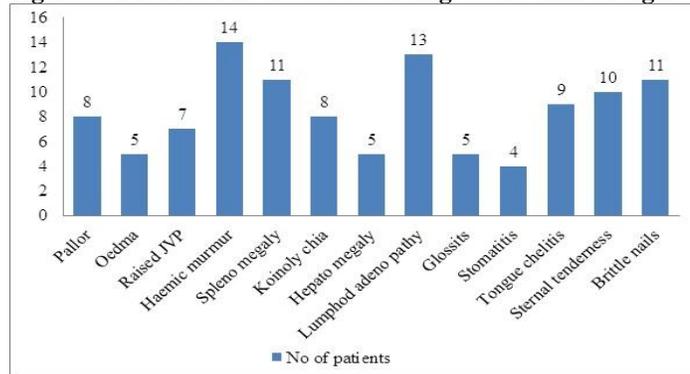
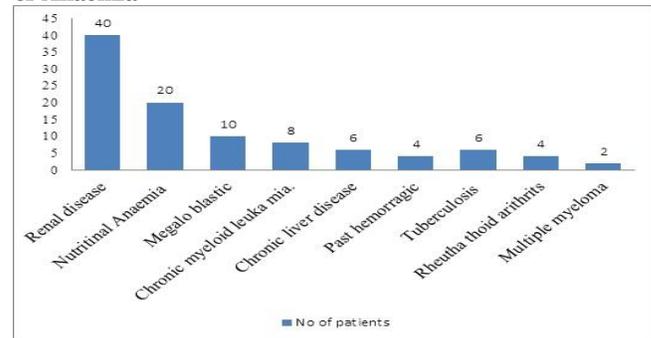


Table 3. Distribution of case according to the clinical signs

Son	Clinical signs	No of patients	Percentage
1	Pallor	8	2
2	Oedema	5	12
3	Raised JVP	7	8
4	Haemic murmur	14	12
5	Splenomegaly	11	10
6	Koinoly chia	8	6
7	Hepatomegaly	5	10
8	Lymphadenopathy	13	6
9	Glossitis	5	8
10	Stomatitis	4	10
11	Tongue chelitis	9	4
12	Sternal tenderness	10	8
13	Brittle nails	11	4
Total		100	100

Table 4. Distribution of cases according to the etiology of Anaemia

SN	Type	No of patients	Percentage
1	Renal disease	40	40
2	Nutritional Anaemia	20	20
3	Megaloblastic	10	10
4	Chronic myeloid leukemia.	8	8
5	Chronic liver disease	6	6
6	Past hemorrhagic	4	4
7	Tuberculosis	6	6
8	Rheumatoid arthritis	4	4
9	Multiple myeloma	2	2
	Total	100	100%

Figure 3. Distribution of case according to the clinical signs**Figure 4. Distribution of cases according to the etiology of Anaemia**

DISCUSSION

100 cases diagnosed as iron anemia with age limit Of 15-65 were including this study. This task depicts are present distribution of case according to the severity. Severe anemia occurred pre dominantly .40 % case of severe anemia are reported. The second table shows distribution of

Case according to the red-cell morphology in peripheral smear. The Micro-cytic hypo chromic anemia appeared pre dominantly. The table 3 and picture showed distribution of case according to the clinical signs. The Haemic murmur signs maximum number is reported.

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