Original research article

Prevalence of anaemia in antenatal women attending tertiary care hospitals – a prospective study

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Abstract:

Background: Anemia is a major public health problem affecting the developing countries. According to World Health Organization, prevalence of anemia among pregnant women in developed countries is about 14%, whereas it is still as high as 55% in the developing world.

Aim: The aim of the study is to identify the prevalence of anaemia in antenatal women attending outpatient departments and inpatient in tertiary care medical colleges in Tamilnadu and Kerala.

Materials and Methods: All antenatal women attending outpatient departments in tertiary care medical colleges, two in Tamilnadu and one in Kerala are screened in between January 2018-to June 2018 six months.

Results: Total number antenatal mothers screened 1138.Anaemia present in 51%(580) of which Microcytic hypo chromic anaemia 59%(342)   macrocytic6%(34) mixed (microcytic and macro) 17%(99) normocytic normochromic 18%(105) According to ICMR classification of anaemia. The prevalence of anaemia was 51% Out of these 21% had mild anaemia, 20% had moderate anaemia, 9% had severe anaemia and 1% very severe anaemia ,All were treated with iron folic supplements, special dietary advice given.

Conclusions: There is a significantly high prevalence of anaemia among pregnant women in south India. a special dietary advice , regular haemoglobin examination, iron folic supplement is a must. Govt should make policy decision like fortifying salt with iron at least for pregnant women.

Keywords: Haemoglobin estimation, peripheral smear, anaemia , antenatal

INTRODUCTION

Anaemia has been known to be responsible for a number of maternal and foetal complications. Apart from decreasing the woman's reserve to tolerate bleeding either during or after child birth, it has been known to be associated with low birth weight, premature delivery, intra uterine growth retardation and thus increased perinatal mortality. Anaemia has also been found to be associated with increased risk of birth asphyxia and low birth weight.   The maternal mortality decreases by 20% for every 1 g/dl increase in the haemoglobin concentration. This decline is continuous between Hb levels between 5 and 12mg/dl   Thus treating anaemia has major health implications in pregnancy and would go a long way in improving maternal and foetal outcome.

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Despite the existing programs on prevention and control of anaemia, such as Iron and folic acid supplementation and free supply of parenteral iron preparations, reports from multiple large national surveys indicate that there has been no significant decline in the prevalence of anaemia or adverse consequences attributed to it.

Often programs and projects aiming to prevent and control anaemia are constrained by the erroneous data regarding socio economic profile of the target group and/or causative factors responsible for the same. So, the main objective of the present study was to understand the health profile and the socio demographic factors of pregnant women and to estimate the exact prevalence of anaemia and other associated factors among pregnant women at term based on the level of haemoglobin and peripheral smear examinations.

MATERIALS AND METHODS:

Pregnant women attending antenatal out patients department in two tertiary care medical college hospitals in Tamil nadu and one in Kerala from January 2018 to June 2018 i.e. a period of 6 months were taken   for study. all 1138 participants were screened for anaemia by clinical examination and haemoglobin estimations. those patients found anaemia in the study, a   informed consent for participation in the study was obtained. Data pertaining to the various independent variables such as the socio-demographic factors, literacy levels, and number of visits for ante natal check-up was recorded. Details regarding their reproductive attributes such as gravidity, age at first pregnancy and birth interval were also sought. It was also asked whether or not they had taken iron and folic acid tablets during present pregnancy.

For determining anaemia the outcome variable, each of the pregnant women is enrolled in the study was advised to undergo haemoglobin estimation in the hospital laboratory. A total of 1138 estimates of haemoglobin were obtained. Haemoglobin estimation was done by acid haematin method. A Haemoglobin level of more than or equal to 11 mg/dl was considered as normal. Any women with a Hb level of less than 11mg/dl was considered anaemic.

According to Indian Council of Medical Research (ICMR) Mild, moderate and severe anaemia was defined as follows:

Mild anaemia   :   Hb 10.0mg/dl-10.9 mg/dl.

Moderate anaemia   :   Hb 7.0mg/dl-10.0 mg/dl.

Severe anaemia   :   Hb less than 7mg/dl.

Very severe anaemia   :   Hb less than 4mg/dl.

All anaemic patients' peripheral smear are collected and pathologists opinion obtained for and results are tabulated and analyzed.

RESULTS:

Total number screened 1138 anaemia present in 51% (580)

Microcytichypochromic 59% (342)macrocytic 6% (34) mixed 17% (99)normocytic normo chromic 18% (105)

 The mean age of participants in this study was 26yrs, only 5% of the females were illiterate, 9% studied up to primary 26% secondary level , 36% were graduates and 24 post graduates. 25% were primi gravida, 66% had one living child,9% have two living children. As far as age at first pregnancy was concerned majority conceived at the age group of 19 to 24 years (45%) for the first time.

Even after repeated advise only 47% had properly taken iron folic acid tablets. the reason for non compliance due to intolerance of the drug, constipation, diarrhoea, symptomatic improvement. The prevalence of anemia

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was 51%. Out of these 21% had mild anemia, 20 % had moderate anemia, 9% had severe anemia and1% very severe anemia. The mean hemoglobin level was found to be 8.8mg/dlc 49 % of the total pregnant female had hemoglobin above 11mg/dl.

The prevalence of anemia in pregnant females in the age group less than20 years was 76%. Out of the total anemic women in this age group 54.% had severe anemia, 12% had moderate anemia and remaining 34% had severe anaemia. However, no case of very severe anemia was found in this age group. Similarly majority of women in the age group 19-24 years (86.04%) and 25-30 years (93.6%) had mild to moderate anemia. Whereas in women over the age of 30 years, the prevalence was of anaemia was 58%. Among these, 4% had very severe anemia. The prevalence of moderate and severe anemia in this age group was 34% and 22% respectively.

 INTERESTING IMPOTANT POINTS IN HISTORY 23 of them undergone minor surgical procedure with in a year, 2 of them undergone major surgical procedures 7 of them are regular blood donors. 125 of them had scanty menstrual periods before pregnancy, 133 had heavy menstrual blood loss before pregnancy,12 % had constipation. 33 had hyper emesis.21 of them had assisted reproduction procedures.3 persons conceived with failure of contraception 147 person non planed conception of which 32 tried for MTP and pills but. as per doctors advise dropped that idea ,14 persons conceived with in 3 months of marriage.167 with in one year rest after one year.

CLINICAL EXAMINATION;

AVARAGE BloodPressure 100/70 mmhg

 18 had increased Blood pressure

AVARAGE BMI 25

23 malnourished 12 over weight 34 obese

KOILONYKIA PRESENT IN 38% platynykia in 23% clubbing in 1%

PALER 63%

KNUCKLE DISCOLORATION IN 12%

HEPATO MEGALY IN 1%

CO MORBID CONDITIONS

HAEMORROHIDS IN 3%

HYPOTHYROIDSM IN 3%COPD IN 2%OVARION CYST IN 1%DIABETIC IN 2%

DISCUSSION:

 Anemia is defined as decrease in red blood cell mass. In anemia, a decrease in the number of RBCs transporting oxygen and carbon dioxide impairs the body's ability for gas exchange. The decrease may result from blood loss, increased destruction of RBCs (haemolysis), or decreased production of RBCs. Anaemia is a sign that needs investigation to find the underlying aetiology., anaemia is usually discovered and quantified by measurement of the RBC count, Hb concentration and haematocrit (Hct). And detailed peripheral smear study will easily identify the cause. Basically, only three causes of anaemia exist: blood loss, increased destruction of RBCs (haemolysis), and decreased production of RBCs.

CAUSES OF ANAEMIA:

Anaemia can be classified as :

Microcytic, < 84 fl   Macrocytic > 96 fl   Normocytic 84-96 fl.

MICROCYTIC ANAEMIA <84 fl	MACROCYTIC ANAEMIA >96 fl	NORMOCYTIC ANAEMIA
IRON DEFICIENCY	FOLIC ACID DEFICIENCY	HEMORRHAGIC ANAEMIA
THALASSEMIA	VITAMIN B12 DEFICIENCY	CHRONIC DISEASE
ANAEMIA OF CHRONC DISEASE	ETHANOL ABUSE	CHRONIC RENAL INSUFFICIENCY
SIDEROBLASTIC ANAEMIA	LIVER DISEASE	HYPOTHYROIDISM
COPPER DEFICIENCY	DRUG INDUCED	BONE MARROW SUPPRESSION
LEAD POISONING	ACUTE MYELODYSPLASTIC SYNDROME	HEREDITORY SPHEROCYTOSIS

	All Pregnant Women N= 1158	Number Anaemia N=580 (100%)	Microcytic anaemia N=342 (59%)	Macro Anaemia N=34 (6%)	Mixed Anaemia N=99 (17 %)	Normocytic Anaemia N=105 (18 %)
Age (years)						
<20	69	39	27	03	04	05
21-25	494	241	141	13	58	29
25-29	408	207	136	09	25	37
>30	187	93	38	09	12	34

Approach to anaemia :
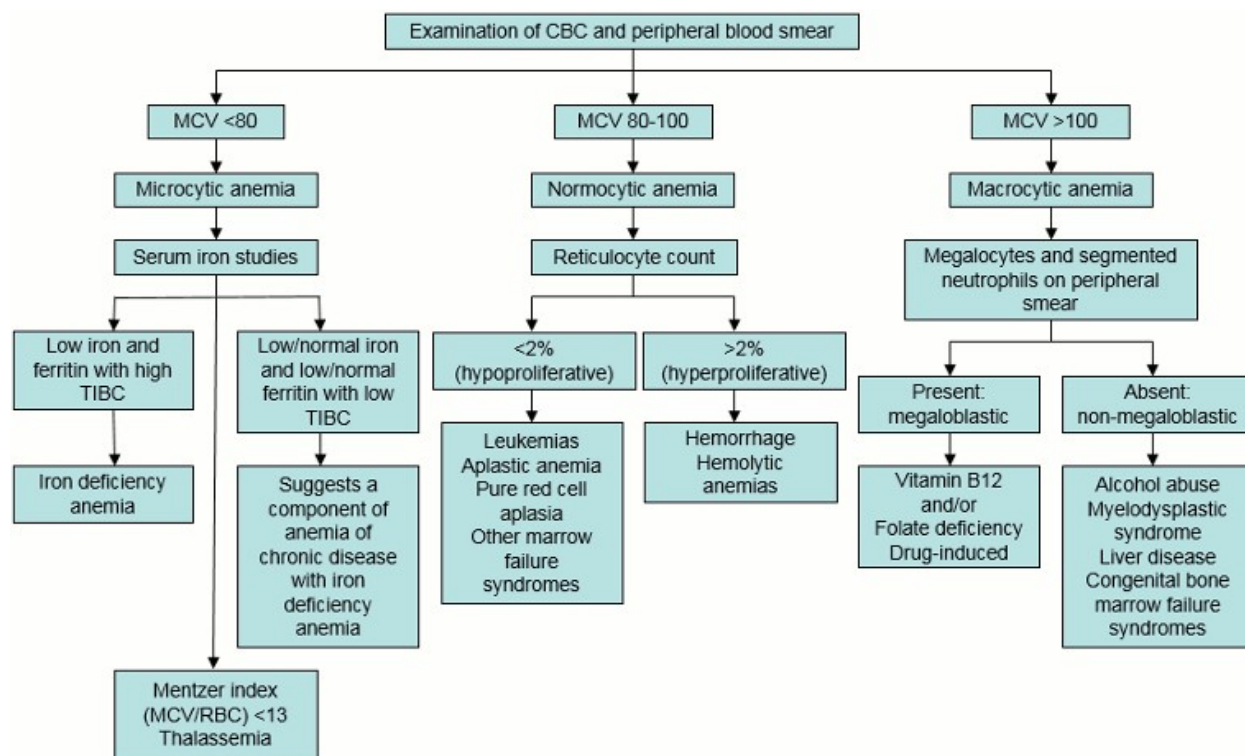
CONCLUSION

In our study iron deficiency anaemia was the most common type followed by normocytic anaemia. The results are similar to previous studies in our country. The prevention of anaemia will not only help the individuals but will produce healthy children and healthy country Frequent de worming, SALT fortified with iron, promoting natural foods like jaggery, groundnut,green leafy vegetables, proper diet advise and close monitoring will improve the out comes in patients with anaemia.

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