

## Poor Implementation of Anemia Programs in India

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### Abstract

**Background:** Anemia is a very common medical disorder in pregnancy with 55% prevalence in India. Every Second women in India is anemic. Hence this study was conducted to evaluate the causes of anemia, maternal and perinatal outcomes of anemia in the Indian population.

**Objective:** To evaluate the causes of anemia, maternal and perinatal outcomes of anemia in the Indian population in a tertiary care Centre government rajaji hospital OG department for a period of 3 months.

**Methods:** This study was carried out in Government Rajaji hospital, Madurai for a period of 3 months from July 2016 to August 2016. A total of 1153 patients were studied. Maternal and perinatal parameters were studied.

**Results:** 82.9% of the mothers had hypochromic microcytic anemia. 43.1% of patients had positive urine culture for latent infections. More than 36% of babies were of low-birth weight.

**Conclusions:** There was a significant correlation between anemia and low-birth weight. Anemia predisposed the mothers to postpartum Wound infections and Sepsis.

**Keywords:** Anemia, iron-deficiency, low-birth weight

### Introduction

Anemia is a major public health problem worldwide. According to WHO, the global prevalence of anemia Complicating pregnancy is 47.4%. The WHO Categorizes different regions of the world into different categories depending on the prevalence of anemia as Areas with high prevalence (>40%), Medium prevalence (15-39%), LOW prevalence (5-14.9%) and not a problem (<5%). India comes in the high prevalence category with a prevalence of 55%.

Anemia causes significant morbidity and even mortality to the mother and fetus. The ill-effects on the mother include greatly increased dyspnoea, Susceptibility to infection and asymptomatic bacteriuria. During labour, there is increased incidence of uterine inertia, maternal exhaustion and postpartum hemorrhage. Postpartum, anemia can lead to greatly increased susceptibility to infections, thromboembolic Complications, sub involution of uterus, failure of lactation and delayed Wound healing. The fetus can suffer from low birth weight, prematurity, still-birth. Folate deficiency in the mother can cause increased risk of abortions, fetal malformations and antepartum hemorrhage.

Iron deficiency is the commonest cause of anemia in India. Government of India provides iron and folic acid

tablets to all pregnant women in India, in spite of which iron deficiency anemia is rampant in India. Educating and correcting anemia in the mother during the antepartum period will have long-lasting positive effects on her health as well as that of her children.

### Methods

This Study was carried out in Government Rajaji hospital, Madurai for a period of 3 months from July 2016 to August 2016.

All patients attending the AN OPD underwent hemoglobin estimations and were classified as anemic (Hb<11g/dL) and not anemic (Hb>11g/dL). A total of 1153 patients were studied. All patients requiring parenteral iron and blood transfusions were admitted.

The iron deficit was calculated and parenteral iron infused accordingly. All patients were evaluated with complete hemogram and peripheral Smear Suggesting the type of anemia. They underwent Cardiac evaluation to rule out decompensated State, USG abdomen to rule Out Splenomegaly and urine Culture and Sensitivity to diagnose asymptomatic bacteriuria and motion for ova/cyst to rule out Worm infestations. Perinatal parameters like birth weight, gestational age at delivery were recorded. Postnatally, these cases were followed-up.

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**Results**

**Severity of anemia**

Severity of anemia	number of cases	percentage
Mild	713	61.8%
Moderate	294	25.5%
Severe	146	12.6%
	1153	

61.85% of the cases presented with mild anemia, 25.5% of the cases presented with moderate anemia and 12.6% of the cases presented with severe anemia.

**Parity**

Party	number of cases	percent age
Primi	579	50.2%
Multi	493	42.75%
Grand Multi	81	7%
	1153	

There was not much difference in the incidence of anemia in primigravidae and multigravidae.

**Festational age at diagnosis**

Trimester	Number of cases	Percentage
First	207	17.9%
Second	379	32.8%
Thrd	567	49.9%
	1153	

There was higher incidence of anemia in the Second and third trimesters as physiological hemodilution of pregnancy reaches its peak during the end of second trimester and early third trimester.

**Type of Anema**

Type of anema	Number of cases	Percentage
Hypochromic Microcytic Anemia	956	82.9%
Normochromic Normocytic Anemia	189	16.4%
Dimorphic Anemia	8	0.7%

Most of the cases showed hypochromic microcytic anemia Suggesting iron deficiency anemia.

**Urine Culture**

Type of organism	Number of cases
E.coli	165
Saureus	226
Klebsiella	106
	497

Urine culture showed positive culture in 497 cases of the 1153 cases Studies which was 43.1% of the total number of cases.

Motion testing for ova, cyst tested nil in most of the patients except 2 in which it was positive for ascariasis,

Only 3 cases showed mild valvular heart disease and 1 case showed mild pulmonary hypertension. All other cases had stable cardiac Status.

**Mode of delivery**

Mode of delivery	number of cases	percentage
Labour Naturali	399	78.7%
LSCS	93	18.3%
Outlet forceps	15	2.96%

Most of the cases underwent normal vaginal delivery.

**Fetal weight**

Fetal weight	number of cases	percentage
<2kg.	107	21.1%
2-2.5kg	80	15.7%
2.5-3 kg	280	55.2%
>3kg	40	7.89%

A large proportion of the neonates were of low birth weight than in the non-anemic population.

**Maternal Complications**

16 patients had wound infections in the post-partum period (14%).

**Discussion**

The study conducted over the period of 3 months on 1153 patients brought many conclusions.

Most of the cases were presenting with mild and moderate anemia which shows that adequate oral iron supplementation would be sufficient to correct anemia in the majority of cases, especially if they presented in earlier gestational Weeks. However since compliance to oral iron is an issue in developing countries, these patients may be treated with parenteral iron supplementation, especially if they presented in later gestational weeks.

There was not much difference in the incidence of anemia among primigravidae and multigravidae suggesting that anemia in Indian Women starts in childhood, worsens in adolescence and gets aggravated by pregnancy. Hence prophylactic iron and folicacid Supplementation is a must in all Indian Women during pregnancy. Adequate Spacing between pregnancies should be advised so that maternal iron stores do not get exhausted.

There was higher incidence of anemia in the Second and third trimesters as physiological hemodilution of pregnancy reaches its peak during the end of second trimester and early third trimester. Though this is a physiological adaptation to improve placental perfusion, this may not be always beneficial as moderate and severe anemia is associated with maternal and fetal risks.

Most of the cases showed hypochromic microcytic anemia suggesting iron deficiency anemia which is the most common type of anemia in our country. Normochromic normocytic anemia in pregnancy most commonly occurs in physiological hemodilution and Chronic mild infections. Patients presenting with dimorphic anemia were treated with Vitamin B12 injections and iron and folicacid Supplementation or blood transfusions as appropriate.

43.1% of patients tested positive for urine Culture showing growth of E.coli, Staphylococcus, Klebsiella Suggesting the importance of latent urinary infections in these patients. Urinary infection may present as a case of apparently refractory anemia and is more than twice as Common in anemic patients as in controls. ASymtomatic bacteuria usually neglected so anemia remains uncorrected. Appropriate antibacterial therapy is necessary before a response to haematinics can be expected. Worm infestation is a common predisposing was present in 4/1136 patients though negligible still should be kept in mind inspite of all our nutritional programmes and aggravating factor that must be looked for in all patients.

Most of the patients had stable cardiac Status showing that cardiac failure occurred only in late stages of severe anemia.

36% of babies weighed below 2.5kg. The incidence of low birth weight increases 2-fold when Hb<8g/dL in the mother. UGR and low-birth weight in the fetus can lead to poor growth in infancy and childhood.

### Conclusion

Iron supplementation is a must in all pregnant Indian Women. Various programmes like national nutritional anemia prophylaxis programme, anemia Control programme, Special nutrition programme, national dewarming programme., Still We get high prevalence of anemia in developing Country like India. So these programmes had to be implemented efficiently to decrease the incidence of anemia.

Folate and B12 deficiencies must also be looked for. The possibility of worm infestations and latent infections especially urinary tract infections must be ruled out. There was significant association between anemia and low-birth weight.

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