

CASE REPORT

A CAMP OBSERVATION OF 50 ANTENATAL CASES ON EFFECT OF LLIN ON MALARIA AND FERROUS ASCORBATE ON ANAEMIA IN FALCIPARUM ENDEMIC ZONE OF ODISHA.

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ABSTRACT: Malaria in pregnancy is a significant contributor to adverse pregnancy outcome. In low resource setting of India to contain malaria in the vast chloroquine resistant endemic zone LLIN (Long lasting insecticide treated Nets) has been introduced as an intervention to prevent malarial morbidity and mortality in the population among anemic pregnant women in malarias zone is quite high, oral ferrous ascorbate has an edge over commonly available ferrous sulfate to rectify Anemia with least side effect in those pregnant women.

INTRODUCTION: Malaria in pregnancy is an important public health problem that affects 25 million pregnant women in endemic zones of world and contributes heavily on maternal and infant morbidity and mortality. Acquired immunity in endemic zones is compromised in pregnant state. Maternal Anemia (70%) still birth, premature birth and LBW are adverse outcome in pregnant women in endemic zones of Malaria, especially in chloroquine resistant areas. Although in 2004 WHO recommended prophylactic two doses of sulfadoxine pyrimethamine (Ref-5) in 2nd trimester of pregnancy in endemic zones, sub optimal drug adherence and increasing sulfadoxine pyrimethamine resistance has stood as an obstacle for Malaria containment. Now effect of long lasting insecticide net (LLIN) insecticide treated net (ITN) is being promoted through UNICEF and Govt. in endemic zones resistant to chloroquine chemoprophylaxis. Here is a camp based study in one heavily affected Malarias zone of Odisha on effect of LLIN in pregnant women and effect of Oral ferrous Ascorbate in improving the anaemic status of pregnant women in malarious zone.

MATERIALS & METHODS: Ramagiri PHC was selected for study as it comes under Intensive Falciparum zone of Koraput district, API-32 in 2012. A pre-camp advertisement in the area was performed. A three member doctor team along with four paramedical assistants, one lab technician and two Divine Life Society volunteers were employed for the camp and 100 nos. of Antenatal cases were registered out of which only 50 cases were randomly studied whose socio economic status was noted to be poor. Antenatal check up Height of Uterus, Abdominal girth/ Wt, BP, HB, urine ALB, splenic examination and Cervical smear and peripheral blood smear were studied.

In all cases MP was studied by thick blood sample. Hemoglobin was instantly estimated by hemocue instrument (HB301) after finger prick. Only 10 cases gave their consent for vaginal cytology inspite of maintenance of privacy in presence of a female attendant. Ferrous sulfate 45 tab and Ferrous Ascorbate (Elferri xt supplied by Svizera Health Care - Constituent Per tab Ferrous Ascorbate 100 mg, Folic Acid-1.5 mg, Zinc -22.5 mg) 45 tabs were given on alternate making them Group 'A' and Group 'B' respectively. HB was reestimated after 45 days in both groups by same machine on 25.05.2013.

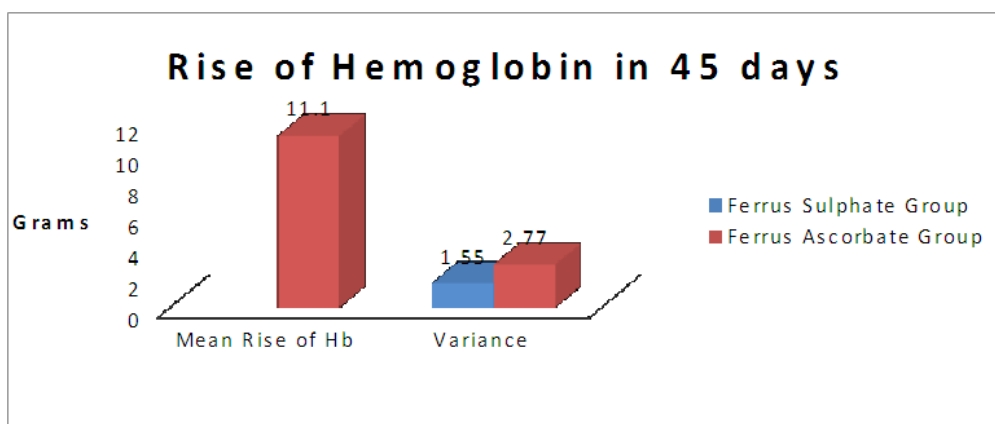
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RESULTS: All cases MP was negative detected in thick smears with a positive history of using LLIN (long lasting insecticidal net-LLIN) and without chloroquine prophylaxis. All the 10 vaginal smears were only inflammatory smears as studied in Vimta lab Hyderabad. All the blood smears were sent to the same lab where 30 cases came out to be Hypochromic microcytic Anemia, 14 cases normochromic normocytic Anemia.

Ten cases were with HB>11gm % level with whatever Iron supplementation was given to them. 39 cases were there with HB level which ranged from 7 gm% to 10.8 gm% in initial examination. One patient was having HB 3.9 gm% who was advised for blood transfusion in addition to oral ferrous ascorbate therapy. 20 cases who consumed Ferrous Ascorbate and Ferrous Sulfate were compared. Ferrous Ascorbate group had a significant rise of more HB in 45 days of therapy than Ferrous Sulfate group.(refer table) without any side effects such as Nausea, vomiting, constipation, diarrhoea, Abdominal distress, black coloured stool as is evident in ferrous sulfate group in some patients. The growth of baby in undelivered cases were satisfactory as evident from Fundal height of uterus, Wt gain, abdominal girth measurement. Three cases delivered healthy babies during these 45 days with Normal Wt and without any maternal fetal complications.

	Mean Rise	Variance
Ferrous Sul	9.611	1.55
Ferrous Asco	11.1015	2.77

P value; 0.0027(<0.01) highly significant



Sl.NO	NAME	AGE	ADDRESS	FAMILY SIZE	PARITY	HB ON FIRST VISIT(gm)	HB ON 2ND VISIT(gm%)
1.	Phulmati jani	30+	Fatikiag	6	G5P4	9.6	9.85
2.	Susmita Majhi	32	Baligon	4	primi	9.4	10.15
3.	Sunda Jani	32	Dandkah	7	G6p5	11.2	11.25
4.	Damuni Santa	28	R.golkon	6	G3P2	12.6	12.65
5.	Daimati Khora	20	R.golkan	3	PRIMI	8.8	9.25

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6.	Phulmati Khora	24+	R.golkan	5	G2P1	9.1	10.25
7.	Phulmati Pujari	24	purudab	7	primi	10.1	11.15
8.	Gurubari Khilo	30+	patrikhu	5	G3P2	8.8	11.06
9	Rukumani Gouda	21+	Purudab	5	primi	12.5	12.75
10	Santi Raut	25+	Dandavadi	7	G6p5	8.4	9.5
11	Mangali Bisoi	33	Dandavadi	5	G3p2	11.7	13.01
12	Lalita Harijan	38	R.majhigam	4	G4P3	11.2	13.03
13	Jamma Khara	28	Bagheipadar	5	G4P3	9.9	11.05
14	Gangeigatam	26	Nuagoon	5	G2P1	10.5	13.06
15	Banu Gadaba	25	Kusumguda	5	Primi	10.7	11.5
16	Rukmani Pujari	25	kotlaguda	4	primi	11.3	12.02
17	Radma Khillo	42	Paraguda	5	G3P2	10.4	11.25
18	Punni Sagania	24	Gaudaguda	2	primi	12.3	12.09
19	Roila Bairagi	23	Gaudaguda	5	primi	3.9	6.09
20	Lalita	30	Ramagiri	4	G3P2	9.2	11.07

ANTENATAL CAMP RAMGIRI ODISHA , FERROUS ASCORBATE GROUP-GR 2

Sl. No.	NAME	AGE	ADDRESS	FAMILY SIZE	PARITY	HB ON FIRST VISIT(gm)	HB ON SECOND VISIT(GM)
1.	Sandhya Rani barik	22	Majhiguda	6	G2P1	13.8	13.08
2.	Maniku-patro	30	Ramagiri	4	G2P1	10.4	11.01
3.	Satyamani	27	Paraiguda	2	primi	9.6	10.35
4.	Laxmi pujari	25	Dholamun	4	G3p2	7.9	8.25
5.	Suramani harijan	37	Badamun	6	G6P5	9.7	10.02
6.	Parbati prabhat	30+	Nuagaon	6	G3P2	10.8	11.04
7.	Padma khara	30	chamapa	6	G4P3	9.8	9.05

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8.	Tulasi khilo	25	Attalguda	6	G2P1	6.15	7.25
9.	Tulasa Kantini	23	Nuagaon	4	Primi	10.6	10.08
10	Mangali kara	27	Bagaipadara	6	G3P2	7.7	8.02
11.	Daimati khilo	23	Kusumguda	4	G3P2	8.8	9.06
12.	Sanipadam	23	Nuagaon	5	G2P1	9.9	10.03
13	Damuni saunta	20	Damonjodi	10	primi	9.2	9.4
14	Manikanta	24	Bhaluguda	7	G3P2	8.5	9.02
15	Bimala Limia	40	R.majhiguda	3	G2P1	8.9	9.03
16.	Tulabati Saunta	21	Damanjodi	7	G2P1	10.8	10.06
17	Sumati Naik	22	KotpadarI	5	G2P1	8.8	9.05
18	Rohini saunta	22	Kotpadari	5	G2P1	9.6	10.02
19	Mani padiri	25	Sanaiput	3	primi	8.6	9.25
20.	Dipi pangi	25+	R.golkonda	3	G2P1	8.8	9.15

ANTENATAL CAMP RAMAGIRI ODISHA FERRUS SULPHATE GROUP -GR-1

DISCUSSION: The negativity of MP from thick smear in all antenatal cases and use of medicated bed nets by all gives a clear picture that in chloroquine resistant high endemic zone that these bed nets(LLIN) are the sole protective against Malaria beside village sanitation maintenance by Grama Kalyana Samiti. All most all families had been supplied with LLIN bed nets in the area 15648 bed nets supplied amid families comprising 40961 people as per the data of Boipariguda CHC.

In western studies{6} has clearly speculated that in geographic areas with increasing resistance to SP the use of ITN (Insecticidal treated net) may be more protective against Malaria infection and has confirmed a reduced child mortality in endemic African countries by consistent use of ITNs. The use of long lasting insecticidal Nets (LLIN) by all the 50 pregnant women has shown a zero malarial attack and improved pregnancy outcome in terms of nil premature labour and proper intrauterine growth of the baby.

The majority rural Antenatal Anemic cases are iron deficient as evident from peripheral Blood smear picture.

Ferrous Ascorbate therapy scores better response than conventional Ferrous Sulfate. It may be due to its elemental NO and O₂ carrying capacity in the blood and for its better Absorption thereby. Ferrous ascorbate is known to form with nitric oxide paramagnetic nitrosyl ferrous ascorbate complexes -Fe-AA-NO. It is suggested that Ferrous ascorbate complexes can play the role of carriers of NO and, perhaps O₂ in the blood plasma.

Ferrous ascorbate may help in development of fetus by dilating blood vessel and providing oxygen and nutrient to fetus. This is a unique property associated with ferrous ascorbate as compared to any other conventional iron salts. Clinical benefits of this property needs to be further evaluated in double blind clinical trail. Zinc plays a central role in cellular growth and development

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during pregnancy through its influence on the growth hormone and the enzyme system that regulates cell division.

There was no Toxemic cases i.e, rise in BP, oedema, urine Alb. amid the 50 cases shows that Nutritional care and iron supplementation to Anemic cases can prevent toxemia of pregnancy.

CONCLUSION: This study was an effort to assess the effectivity of impregnated bed nets in pregnant women to ensure Baby growth, avoidance of malarial attack and to avoid maternal fetal morbidity & mortality thereby. Further two groups of iron salt were studied to confirm the efficacy of Ferrus Ascorbate (elemental Iron 100 mg+Folic acid 1.5 mg) over conventional Ferrous sulfate (elemental Iron 60 mg+Folic acid 1.5 mg) to combat anemia in pregnant woman and to confirm satisfactory baby growth.

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