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Original Research Article

Outcome of anemia among high-risk pregnant women in a primary health centre

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ABSTRACT

Background: Anaemia is the most common nutritional deficiency in high-risk pregnancies especially in developing countries like India. Though it is easily treatable and preventable condition it is a major factor in high-risk pregnancies. Primary health care medical officers are the first person in the community to identify and manage anaemia in pregnant women, by improving dietary habits and vitamin supplementation (iron, folic acid and). Aim of the study was to determine the various out comes among anemic pregnant women with other high-risk factors. Objectives of the study was to estimate the prevalence of anaemia in high-risk pregnancy, to assess socio-demographic profile of study subjects and to determine the pregnancy outcome.
Methods: A longitudinal follow up study was done by using a convenient sampling method a total of 112 high risk antenatal mothers were selected to do this study. They were followed till their delivery.
Results: Overall prevalence of anaemia among high-risk pregnant women was found to be 82%. Among all the high-risk pregnant women 31% were having intermediate, 73% belongs to upper middle class, 57% underwent normal delivery. Only a few 2.5% had MTP, 39% had mild anemia, 23% had moderate anemia, 20% had severe anemia.
Conclusions: Awareness regarding the complications of anemia and its prevention must be educated to high risk anenatal mothers.

Keywords: Anemia, High risk anetenatal mother

INTRODUCTION

Anaemia is the most common nutritional deficiency in high-risk pregnancies especially in developing countries like India. Though it is easily treatable and preventable condition it is a major factor in high-risk pregnancies. Primary health care medical officers are the first person in the community to identify and manage anaemia in pregnant women, by improving dietary habits and vitamin supplementation (iron, folic acid and).[1]

It is significantly associated with diminished intake of food, altered metabolism, hook worm infestations, low socio-economic status, illiteracy, early age of marriage, etc. Studies showed close association between anaemia and maternal mortality. Apart from maternal mortality, anaemia in pregnancy may also result in intrauterine growth retardation, low birth weight, still-birth, and neonatal death. Haemoglobin value <11 g/dl is considered as anaemia in pregnancy by World Health Organisation.[2] Anaemia in pregnancy can be further graded as mild,

moderate and severe anaemia with haemoglobin levels of 10.0–10.9 gm/dl, 7–9.9 g/dl and <7 gm/dl respectively.

In view of low dietary intake of iron and folic acid, and high prevalence of anaemia among pregnant women. India started the National Nutritional Anaemia Prophylaxis Program (NNAPP) to prevent anaemia among pregnant women. Through this program 100 mg of ferrous iron and 500 mcg folic acid tablets are being distributed to pregnant woman through Urban Family Welfare Centres in urban areas and primary health centres in rural areas. Despite of these preventive measures, anaemia in pregnant women is very much prevalent in India.

Aim

Aim of the study was to determine the various out comes among anemic pregnant women with other high-risk factors.

Objectives

Objectives of the study were to estimate the prevalence of anaemia in high-risk pregnancy, to assess socio-demographic profile of study subjects and to determine the pregnancy outcome.

METHODS

A prospective, follow up study was carried out for a period of 10 months from April 2021 to February 2022 in a rural primary health centre named Renigunta, located 15 km from Srivenkateswara Medical College, Tirupathi, Tirupathi district of Andhra Pradesh. The PHC serves for a population of 79,000. Registered pregnant women in this period 1054. Among these 112 women were reported as high-risk pregnant women, this group were selected for study by using a convenient sampling method. These women were followed till their delivery and the outcome of the pregnancy will be assessd.

Periodical Hb levels will be assessed once in 3 months by using sahli's hemoglobimometer to all antenatal mothers. Hb levels will catogirized as normal upto 11 gms, 10-10.9 g/dl as mild anemia, 7-9.9gms/dl as moderate anemia and less than 7 gms (severe anemia). All the antenatal mothers having moderate and severe anemia will be included in this study by using a simple random method. And their outcome of the pregnancy will be assessd.

A pretested semi-structured questionnaire will be used to collect data. The questionnaire contains socio-demographic information (age, education, occupation, income etc); questions related to current and previous pregnancy (antenatal visits, antenatal registration, immunization, etc); physical examination and lab investigations.

The collected data will be entered in MS excel and analyzed by using SPSS software.

The results will be presented as pie diagrams, bar diagrams, charts and tables. The association between two variables will be assessed by using appropriate statistical tests.

Inclusion criteria

Inclusion criteria were high risk antenatal cases Registered in health centre and those cases who have given informed written consent.

Exclusion criteria

Exclusion criteria was mild anemia cases.

Individual participant consent and ethical clearance from our institute were obtained before start of the study.

RESULTS

The mean age of the high-risk pregnant women was 31.2 yrs. Majority of the study participants were in the age group of 18-25 years (Figure 1). Overall prevalence of anaemia among high-risk pregnant women was found to be 82%.

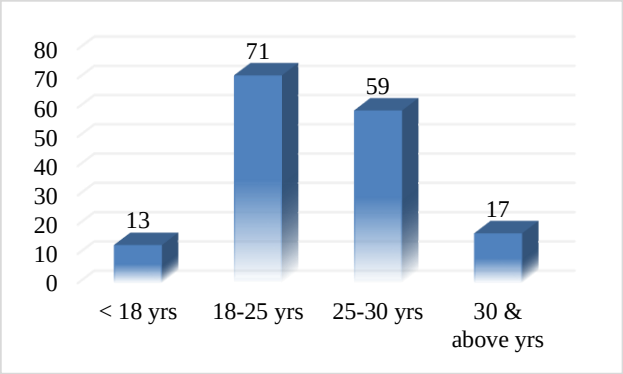

Figure 1: Age distribution of the study participants.

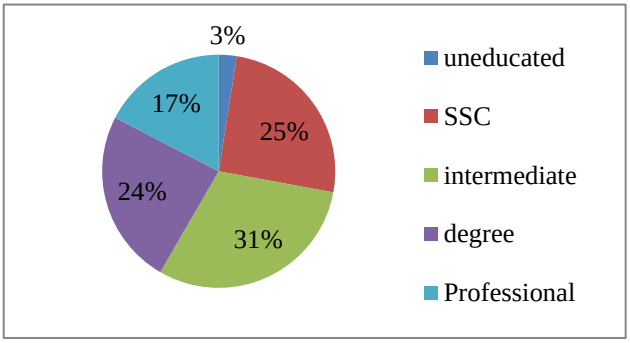

Figure 2: Educational status of study participants.

Among all the high-risk pregnant women 31% were having intermediate education followed by SSC of 25%, 24% degree, 17% professionals, only 3% were uneducated (Figure 2). Majority of the study participants 73% belongs to upper middle class based on B.G. Prasad socio-economic classification. Majority 73% of the study participants belongs to upper middle class of socio-economic status according to B.G. Prasad socio economic classification (Figure 3). Majority 57% underwent normal delivery. Only a few 2.5% had MTP, 2.5% had infant deaths (Figure 4). Among all study participants 39% had mild anemia, 23% had moderate anemia, 20% had severe anemia and only 18% were fitted in normal category (Figure 5). The high-risk pregnant women enrolled in this study were 60% post LSCS, 14% primi with mal position, 12% thyroid, HTN, DM, CAD, 6% elderly primi, 3% twin pregnancy, 3% short stature, 1% multigravida, 1% Rh negative mother (Figure 6). We reported more anemia cases in the age group of 25-30 yrs, p<0.04 (Table 1). Among all the study participants majority belongs to second gravida, p<0.01 (Table 2).

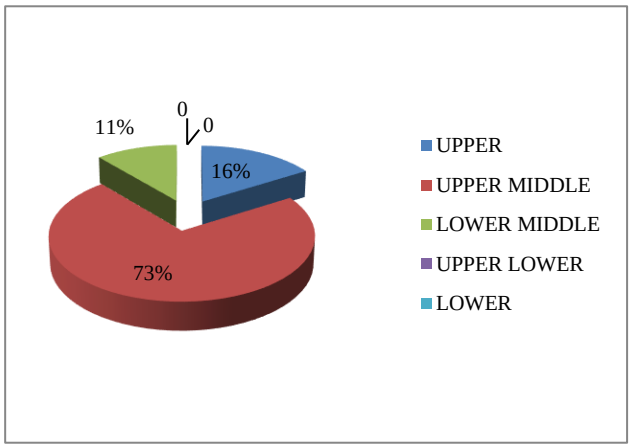

Figure 3: Socio-economic status of study participants.

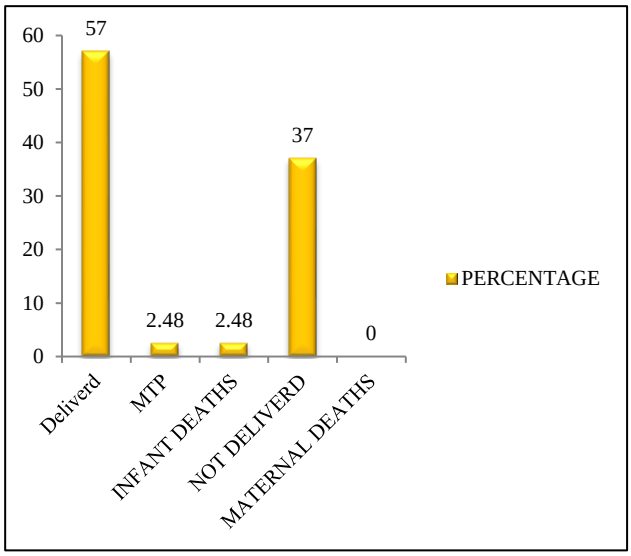

Figure 4: Outcome of the study participants.

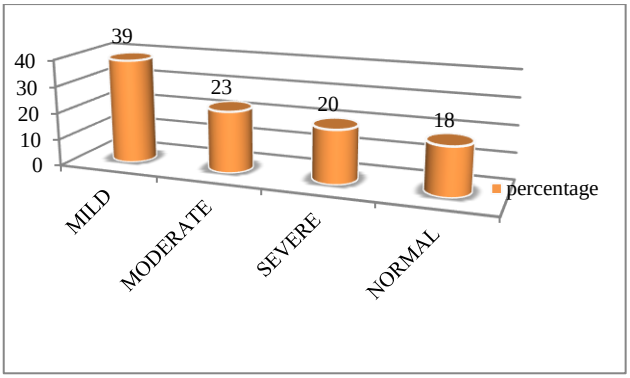

Figure 5: Status of anemia of the study participants.

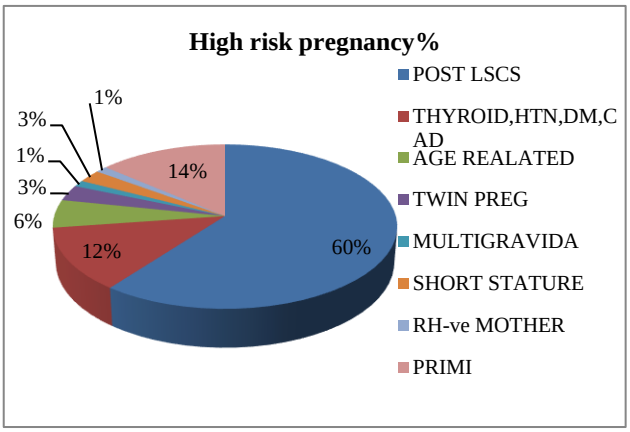

Figure 6: Risk status of the study participants.

Table 1: Association of age with HB levels.

Age group (in years)	HB levels			Total
	Mild	Moderate	Severe	
<18	2	11	1	14
18-25	17	52	2	71
25-30	7	50	2	59
>30	1	13	3	17
Total	27	126	81	161

Table 2: Distribution of study participants based on their gravida.

Age group (in years)	Gravida			Total
	Primi gravida	G2	G3 & more	
<18	5	5	3	13
18-25	9	55	7	71
25-30	8	43	8	59
>30	2	10	62	17
Total	24	113	24	161

DISCUSSION

Majority of cases (anaemia) in our study had mild 39%, moderate 23%, severe 20%, normal 18% of cases were identified. a study by Kapil et al (1.6%) and NHFS-2

(2.5%) reported low levels of anemis which are very less to our study.[4] There was minimal association found between age, low socio-economic status etc. A study by Chowdhury et al in Bangladesh also found that education of women was significantly associated with anemia in pregnancy.[5] Whereas in a study by Singh et al, observed an insignificant association between anemia and gravida.[6] The high-risk pregnant women enrolled in this study were 60% post LSCS, 14% primi with mal position, 12% thyroid, HTN, DM, CAD, 6% elderly primi, 3% twin pregnancy, 3% short stature, 1% multigravida, 1% Rh negative mother. Maternal anemia is considered as risk factor for poor pregnancy outcomes, and it threatens the life of fetus. Available data from India indicate that maternal morbidity rates are higher in anemic women.[7-9]

Ravishankar et al reported in their study about 35.6% of the women had maternal and fetal morbidity, LSCS, abortions, obstructed labor, PPH, preeclampsia, prolonged labor, LBW, and birth asphyxia were commonly seen among anemic pregnant women which is a similar study to our study.[10]

ANC visits plays an important role in reducing maternal anaemia. Motivation and health education, support to supplementation food fortification, iron fortification may reduce the severity of anaemia.

Limitation

This study can be applicable to only high-risk antenatal mothers

CONCLUSION

Anaemia control programme should be executed more resourcefully in this vital segment of population. Awareness of above said factors is more important to prevent anaemia rather than early diagnosis and treatment.

Recommendations

To add support to supplementation food fortification through Anganwadi centres (double strength eggs, milk, dates, chikkies, rice, oil, toordal) etc, Albendazole tab in 2nd trimester, 2doses of TT, attending PMSA and routine 4 ANC health checks, regular follow up visits to be given by female health care workers. Education of the male partner regarding the complications of the disease and the utility of the supplementary diet during pregnancy may help the pregnant woman a lot to execute these policies in her daily life.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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