

RELATIONSHIP BETWEEN GRAVIDA STATUS AND SEVERITY OF ANEMIA?

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ABSTRACT

Background: Worldwide, it is estimated that anemia contributes to 20% of maternal deaths. Among these; about half of the global maternal deaths occur in South Asian countries out of which 80% is contributed by India. WHO estimates that over two-thirds of pregnant mothers in developing countries suffer from nutritional anemia. India continues to be one of the countries with the highest prevalence of anemia. **Material & Methods:** The present prospective study was conducted at the department of obstetrics and gynecology of our tertiary care hospital. The study duration was of one year from November 2017 to August 2018. A sample size of 200 was calculated at a 95% confidence interval at a 10% acceptable margin of error. Pregnant women were enrolled from the outdoor, antenatal clinic and from the ward by simple random sampling. **Results:** There were 108 females in the group of primigravida and 92 females in the group of multigravida. Among pregnant women with no previous child 59 (54.6%) had no anaemia, 36 (33.3%) females had mild anemia, 13 (12%) females had moderate anemia and none of them had severe anemia in this group. Among pregnant women who were multigravida (0%) had no anaemia, 37 (40.2%) females had mild anemia, 61 (30.5%) females had moderate anemia and 7 (7.6%) had severe anemia in this group. These differences in the burden of anemia were statistically highly significant (p-value < 0.001). **Conclusions:** We concluded from the present study that the magnitude and burden of anemia are very high and the population living among urban and rural areas both were at higher risk of developing anemia. We found a statistically significant correlation of anemia with an increasing number of children and gravida status.

Key words: Anemia, Pregnancy, gravida status.

INTRODUCTION

Worldwide, it is estimated that anaemia contributes to 20% of maternal deaths. Among these; about half of the global maternal deaths occur in South Asian countries out of which 80% is contributed by India. WHO estimates that over two-thirds of pregnant mothers in developing countries suffer from nutritional anaemia. India continues to be one of the countries with the highest prevalence of anaemia. (1)

National Family Health Survey 3 (NFHS-3) estimates reveal the prevalence of anaemia to be 60-

80% in pregnant women. In order to prevent high maternal mortality and high incidence of low birth weight babies, the Government of India launched the National Nutritional Anaemia Prophylaxis Program way back in 1970 targeting pregnant and lactating women (2). Subsequently, the program was modified and renamed as National Nutritional Anaemia Control Program in 1991, targeting not only pregnant and lactating women but also preschool children. Even though the program has been operational for over 40 years, it has made little dent on the overall

prevalence of anaemia during pregnancy in both urban and rural areas, as per the NFHS-3 report (3).

There are several risk factors associated with morbidity and mortality among pregnant women such as postpartum hemorrhage, abortion, low birth weight baby, stillbirth, high perinatal mortality, undercurrent infection, infant mortality and maternal mortality (4). Regarding this context of combating anaemia during pregnancy, with far-reaching benefits in terms of safe motherhood and healthier future generations, an attempt has been made to know the magnitude of anaemia among pregnant women.

MATERIAL & METHODS

The present prospective study was conducted at the department of obstetrics and gynecology of our tertiary care hospital. The study duration was of one year from November 2017 to August 2018. A sample size of 200 was calculated at a 95% confidence interval at a 10% acceptable margin of error. Pregnant women were enrolled from the outdoor, antenatal clinic and from the ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before the start of the study. Written informed consent was taken from each study participant.

The data were collected by predesigned, multiple response types of questionnaires from each pregnant woman (above 18 years of age and beyond 12 weeks of amenorrhea) after taking the written consent. The questionnaire was addressed on the topics of anaemia and our study variables gravida status and geographical living areas. Data analysis was carried out using SPSS v22. All tests were done at alpha (level significance) of 5%; means a significant association present if the p-value was less than 0.05.

RESULT

In the present study, we enrolled 100 pregnant women who were classified into two major groups according to the residential area. Women who never had a child were enrolled in a group of primigravida. We classified other groups further of multigravida. There were 108 females in the group of primigravida and 92 females in the group of multigravida. Among pregnant women with no previous child 59 (54.6%) had no anaemia, 36 (33.3%) females had mild anemia, 13 (12%) females had moderate anemia and none of them had severe anemia in this group. Among pregnant women who were multigravida (0%) had no anaemia, 37 (40.2%) females had mild anemia, 61 (30.5%) females had moderate anemia and 7 (7.6%) had severe anemia in this group. These differences in the burden of anemia were statistically highly significant (p-value < 0.001). [Table 1]

Table 1: Relationship between gravida status and severity of anaemia

Gravida	Severity				Total
	No anaemia	Mild anaemia	Moderate anaemia	Severe anaemia	
Primi	59 (54.6%)	36 (33.3%)	13 (12%)	0 (0%)	108 (100%)
Multi	0 (0%)	37 (40.2%)	48 (52.2%)	7 (7.6%)	92 (100%)
$\chi^2 = 85.362$	df= 3	P < 0.001			

In the present study Among pregnant women who had no previous child 59 (54.6%) had no anaemia 37 were from the urban area and 22 from the rural area. Out of 36 (33.3%), females had mild anemia 19 were from the urban area and 17 from the rural area. Out of 13 (12%), females had moderate anemia 6 were from the urban areas and 7 from the rural areas.

Among pregnant women who were multigravida, out of 37 (40.2%) females who had mild anemia 16 were from the urban area and 21 from the rural areas. Out of 48 (52.2%), females who had moderate anemia 21 were from the urban area and 27 from the rural area and 7 (7.6%) pregnant women who had severe anemia 1 were from the urban area and 6 were from

rural areas. These differences in the burden of anaemia were statistically significant (p-value <

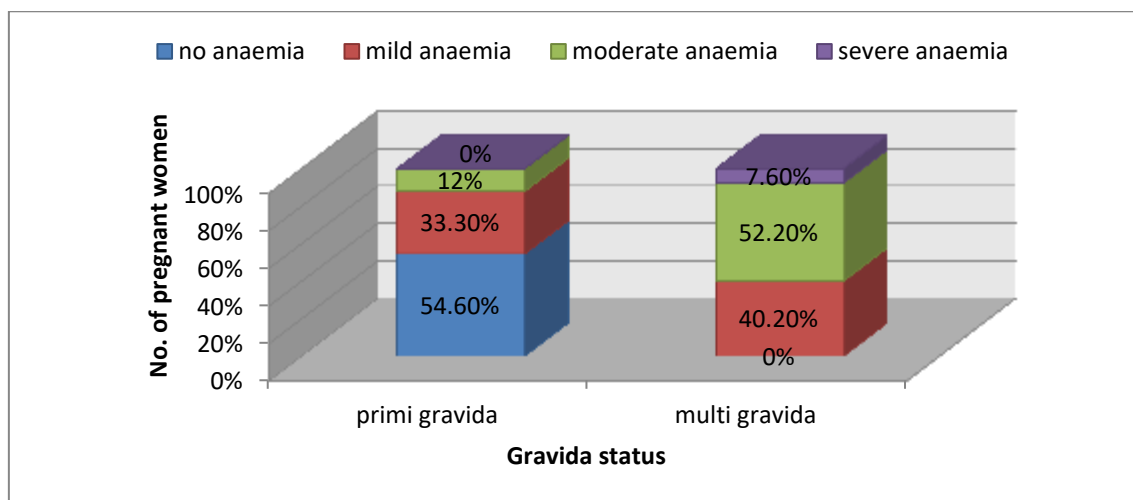
0.001). [Table 2]

Table 2: Relationship between gravida status and severity of anaemia among urban and rural pregnant women

Gravida	Severity								Total
	No anaemia		Mild anaemia		Moderate anaemia		anaemia		
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	
Primi	37	22	19	17	6	7	0	0	108
	-59.70%	-47.80%	-30.60%	-37%	-9.70%	-15.20%	0%	0%	-100%
Multi	0	0	16	21	21	27	1	6	92
	0%	0%	-42.10%	-38.90%	-55.30%	-50%	-2.60%	-11.10%	-100%
	-37%	-22%	-35%	-38%	-27%	-34%	-1%	-6%	-100%

Urban($\chi^2 = 43.326$, $p < 0.001$); Rural($\chi^2 = 39.800$, $p < 0.001$)

Fig. 1: Relationship between gravida status and severity of anaemia



DISCUSSION

The present prospective study was conducted at the field practicing areas under the department of obstetrics and gynecology of our tertiary care hospital. The aim of the present study was assessing the magnitude and burden of anaemia along in the correlation to the gravida status of pregnant women. In the present study, we enrolled 200 pregnant women from different urban and rural areas and further subdivided them into four subgroups of no anemia, mild anemia, moderate anemia and severe anemia. In the present study, the age of enrolled pregnant women was ranged from 20 to 42 years. The mean age of the enrolled pregnant women was

24.16 ± 5.78 years. There were no pregnant women in the present study who aged less than 18 years of age.

In the present study, the overall burden of anaemia was found to be 64% which was comparatively more among rural areas (68%) in comparison to the urban areas (60%) and the difference in the burden of anaemia was statically significant ($p < 0.05$). The odds of anaemia were 1.2 times higher among rural areas than urban pregnant mothers. The results of the present study were comparable and nearly similar to the results of surveys of India conducted by the National Family Health Survey (NFHS-3) and another survey conducted by the District Level

Household Survey (DLHS-3). (5)(6) The results of the present study were comparable and nearly similar to the study conducted by Toral M. Goswami et al among pregnant women in 2014 on anaemia status during pregnancy and effects of anemia on perinatal outcome.(7)

In the present study, we enrolled 100 pregnant women who were classified into two major groups according to the residential area. Women who never had a child were enrolled in a group of primigravida. We classified other groups further of multigravida. There were 108 females in the group of primigravida and 92 females in the group of multigravida. Among pregnant women with no previous child 59 (54.6%) had no anaemia, 36 (33.3%) females had mild anemia, 13 (12%) females had moderate anemia and none of them had severe anemia in this group. Among pregnant women who were multigravida (0%) had no anaemia, 37 (40.2%) females had mild anemia, 61 (30.5%) females had moderate anemia and 7 (7.6%) had severe anemia in this group. These differences in the burden of anemia were statistically highly significant (p-value < 0.001). Similar results were reported in a study done by Gautam VP et al among rural areas of Delhi and found a similar correlation. (8)

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anaemia and its severity with two or more abortions. (9)

CONCLUSION

We concluded from the present study that the magnitude and burden of anemia are very high and the population living among urban and rural areas both were at higher risk of developing anemia. We found a statistically significant correlation of anemia with increasing number of children and gravida status.

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