

Frequency of Low Birth Weight in Pregnant Women with Anemia

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ABSTRACT

Objective: To determine the frequency of low birth weight in pregnant women with anemia.

Methodology: This descriptive cross-sectional survey, was conducted at OMC Hospital, Jail Road, Lahore and Medicine Deptt. of Lahore General Hospital during March 2020 to November 2020. We included 320 pregnant females with gestational ages between 30 to 36 weeks with hemoglobin level of <10g/dl and further classified as moderate anemia with (Hb levels 8-9.9g/dl) and in severe anemia for those having Hb 8g/dl. All cases with known systemic diseases/abnormalities like hemoglobinopathies (sickle cell anemia/thalassemia), diabetes, hypertension, smoking, renal problems, oligo/polyhydramnios were excluded from the study. The neonates were examined after the delivery is done with the help of pediatrician and all protocols for neonates assessment were followed. All findings were recorded, low birth weight was considered if the neonatal weight was <2500g. These neonates were followed until they are discharged from the hospital or mortality (if any). Routine informed consent was also obtained from the patients attendants to use their data in the study.

Results: In our study, 32.5% of the cases were low birth weight whereas 67.5%(n=216) cases had normal birth weight.

Conclusion: Frequency of low birth weight is higher in mothers presenting with anemia.

Keywords: Maternal anemia, low birth weight, association

INTRODUCTION

Anaemia is considered as an important hematological manifestation during pregnancy and known global health issue affecting nearly 50% of all pregnant females, primarily in lower social economic class in the world including our country^{1,2}. In developed countries like US, UK, Germany and Australia, anemia ranges from 9 to 51%^{3,4,5}. However, these statistics contrast with developing nations including Nepal, Sudan, Ghana, India, Bangladesh and Pakistan, where its range is between 44% to 81%^{2,6,7,8,9,10}. In Pakistan, anemia affects 41.7 to 77% in reproductive age group women^{11,12}. It is more common rural areas, and linked to adverse health outcome like preterm delivery, postpartum hemorrhage or low birth weight¹³. A recent trial (Hambidge et al 2019) revealed that anemia is potentially modifiable causative factor on birth outcome¹⁴. Over the past decade various programs and advanced obstetric technology, in mother and child health(MCH) associated issues, anemia remains challenging for obstetricians¹⁵⁻¹⁷.

According to an estimate more than 15 million babies are delivered before completing 37 weeks of gestation and around 20 million infants are low birth weight (LBW) each year and considered a global health issue, especially in developing nations¹⁸⁻¹⁹. The low birth weight babies are at increased risk of adverse outcome due to poorly or underdeveloped organ systems. However, a newborn's birth weight is considered an important marker to determine maternal and fetal health²⁰.

Unfavorable social, biological and environmental conditions are classic etiological factor for LBW which may occur during, or before the gestational period²¹⁻²³. Weight in mothers in pre-gestational period or during gestational period may influence the birth weight. Therefore, insufficient maternal caloric intake due to improper/poor nutrition be the cause of lower absorption of potential micronutrient like iron and Vit. B12 for growth of fetuses²⁴.

Though low or insufficient birth weight determinants are similar, but the mechanism links with maternal anemia is not fully known. However, few trials established link between low birth weight with maternal anemia²⁵⁻²⁹.

Low birth weight babies face major health problems including mortality, feeding difficulties, hypothermia, hypoglycemia, susceptibility to infection, pulmonary immaturity, electrolyte and fluid imbalance³⁰. These problems may lead to a greater risk of

mortality within first 28 days of their life. In addition, survived neonates are prone to suffer from lower intelligence and stunted growth in early life³¹⁻³². These consequences are recorded to continue in their adult-hood like diabetes and obesity³³. The rate of mortality in LBW is still on rise and contributes to 60% to 80% of all neonatal deaths annually³⁴.

In our setup, we recorded a significant number of females with anemia which influences to conduct a study to record the frequency of low birth weight in pregnant women with anemia so that a recent study in urban area may enable us to create awareness and also be helpful for developing guidelines in local setup.

METHODOLOGY

This descriptive cross-sectional survey, was conducted at OMC Hospital, Jail Road, Lahore and Medicine Deptt. of Lahore General Hospital during March 2020 to November 2020. We included 320 pregnant females with gestational ages between 30 to 36 weeks with hemoglobin level of <10g/dl and further classified as moderate anemia with (Hb levels 8-9.9g/dl) and in severe anemia for those having Hb 8g/dl. All cases with known systemic diseases/abnormalities like hemoglobinopathies (sickle cell anemia/thalassemia), diabetes, hypertension, smoking, renal problems, oligo/polyhydramnios were excluded from the study. Blood transfusion was done, in severe anemic cases. The neonates were examined after the delivery is done with the help of pediatrician and all protocols for neonates assessment were followed. All findings were recorded, low birth weight was considered if the neonatal weight was <2500g. These neonates were followed until they are discharged from the hospital or mortality (if any). Routine informed consent was also obtained from the patients attendants to use their data in the study. The collected data was entered in SPSS 20th version for analysis, we used mean and standard deviation for quantitative variables and frequency(%) for qualitative variables, we used chi square test to know the significance for data stratification.

RESULTS

In our study, 32.5% of the cases were low birth weight whereas 67.5%(n=216) cases had normal birth weight. (Figure)

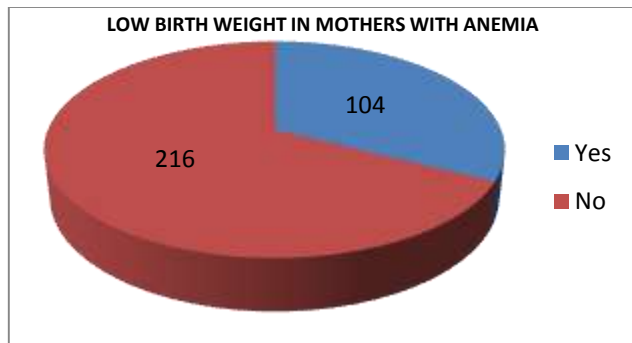


Fig. 1:

Table 1:

Variable		LBW		P value
		Yes	No	
Age(years)	18-30	41	96	0.72
	31-35	63	120	
G.Age (weeks)	30-37	72	55	<0.00001
	>37	32	161	
Parity	1-3	48	106	0.239
	>3	56	110	
Socioeconomic Status	Poor	58	120	0.326
	Middle	31	52	
	Higher	15	44	
NICU Admission	Yes	36	52	0.047
	No	68	164	
Type of anaemia	<10g/dl	14	49	0.011
	8-9.9g/dl	29	78	
	<8g/dl	61	89	
Blood transfusion	Yes	11	184	<0.0001
	No	93	32	

DISCUSSION

The data showing more frequent cases of low birth weight in anemic mothers. The main outcome results of current study highlighted that maternal anemia is an independent risk factor for insufficient/low birthweight, it is consistent with Raisanen et al. (2014)³⁵. Shoboo Rahmat³⁶ included 17 studies revealed that anemia in mothers particularly during first trimester may be the risk factor of low birthweight.

Lone et al³⁶ in a study showed that the risk of low birth weight babies in the anaemic population was 1.9 times higher. Jones and others³⁷ also had same findings, however, the difference from the non anaemic group in their study was non significant (p=0.11)We found only one study had contrasting results³⁸ revealed no association.

Anaemia during pregnancy may be caused due to less intake of nutritional foods, malabsorption, indigestion, iron deficient foods, more iron demand, loss of blood and complication during gestation³⁹. Additionally, the situation may be due to habits of women who consume herbal or traditional medicines because of containing filtrate and oxalic acid which may interfere with iron absorption in the body⁴⁰. Consequently, lack of Hb levels may result in impaired growth of infants because blood would not delivery adequate oxygen levels to the entire tissues. However, it disrupts the metabolic processes and exchange of important nutrients.

Considering the result of our study, it is concluded that lower levels of Hb may affect the infant growth and these mothers are required to be dealt with necessary steps medical care.

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