Anemia and pre term labour at a tertiary care hospital

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Abstract

Background: Pre term labour and anemia in quite common among pregnant women.

Objective: To assess the frequency of pre-term labor in anemic pregnant women.

Methodology: Study design: Cross Sectional Study. Setting: Department of Gynecology, Shaikh Zayed Hospital, Rahim Yar Khan. Duration: 1st February to 1st August 2017. The patients with age 20-40 years with single pregnancy of 20 weeks' gestation or more irrespective of the number of parity and gravida with anemia were included. Anemia was labelled with hemoglobin level less than 12 g/dl were included and preterm labor was defined as fetus delivered (spontaneously via vaginal delivery or cesarean section) before 37 weeks of gestation.

Results: In present study there were total 94 cases. The mean age of the subjects was 29.71±3.57 years and mean parity status was 4.45±2.17. Preterm labor was seen in 24 (25.53%) out of 94 cases. Pre term labor was seen more in cases with age 20-29 years, rural population and those with no prior history of cesarean section; however, none of these factors was seen to be significantly associated with this.

Conclusion: Pre term labor is common in cases with anemia and was seen in almost 1 out of 4 cases; but has no significant association with age, rural residence and prior history of cesarean section.

Keywords: Anemia, Pre term labor, Hemoglobin

Introduction

Anemia is one of the high burden morbidities found in the developing countries and it can further be fatal when it is found in pregnant females as the morbidity and mortality can occur both in mother as well as fetus due to various complications.[1] Hypertensive disorders like pre eclampsia, eclampsia and pre term labor are well reported in pregnant females.[1,2]

Preterm labor is also a commonly encountered complication of pregnancy, which can be multifactorial and can be denoted as beginning of the rhythmic and frequent contractions of the uterus, which are sufficient enough to lead to cervical effacement and dilations between twenty to 37th week of gestation.[3] Over all the incidence is seen in twelve percent of the cases and the risk increases with the addition of a risk factors.[3,4] There is a long list of maternal and fetal related factors and anemia is one of the common but under rated pathology. The other major risk factors include maternal infections, trauma, hypertension, diabetes, hypertensive disorders of pregnancy, trauma, previous abortions and a number of hormonal and structural abnormalities and similar is seen with fetal chromosomal and structural abnormalities.[5,6]

The underlying pathophysiology is complex and can be due to decidual haemorrhage, uterine distortion, cervical incompetence, inflammation, hormone abnormalitiesetc.[7] Early detections of the risk factors and prompt intervention can reduce both maternal and fetal adverse outcomes.[8] The local data is scarce and the majority of the studies are done in the West. That's why this study was planned to quantify the exact data. The objective of this study was to assess the frequency of pre term labor in anemic pregnant women.

Methodology

This was a descriptive cross sectional study conducted at Department of Gynecology, Sheikh Zayed Hospital, Rahim Yar Khan during 1st February to 1st August 2017. In this study, the anemic pregnant females of age 20 to 40 years, with gestational age more than 20 weeks at presentation were selected, via non probability consecutive sampling. Anemia was labelled where the serum Hb level was less than 12 g/dl according to World Health Organization protocol. The cases with end stage renal or liver failure and those having anemia due to any

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malignancy, were excluded from this study. Then these cases were followed monthly and the time of delivery was noted. Preterm labor was labeled yes when the fetus was delivered (spontaneously via vaginal delivery or cesarean section due to any reason) before 37 weeks of gestation.

Data was analyzed with the help of SPSS version 17. Post stratification chi square test was applied. P-value ≤0.05 was taken as significant. Ethical approval was sought from Institutional Review Board.

Results

In present study, there were total 94 cases. The mean age o the subjects was 29.71±3.57 years and mean parity status was 4.45±2.17 as shown in table I. Preterm labor was seen in 24 (25.53%) out of 94 cases as shown in figure I. Pre term labor was seen more in cases with age 20-29 years, rural population and those with no prior history of C section; however, none of these factors was seen to be statistically significantly associated with this as shown in table II.

Table I: Study variables (n= 94)

Variables	Mean ± SD	Range
Age (years)	29.71±3.57	20-34
BMI (kg/m^2)	24.74±2.97	21-30
Parity	4.45±2.17	0-8
Duration of gestation	23.21±5.19	20-26

Figure I: Frequency of pre term labour among anemic mothers.

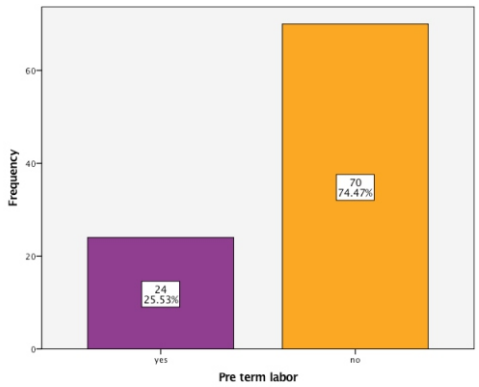

Table II: Pre term labor vs Effect modifiers

Effect modifiers		PRE TERM LABOR		p value
		Yes	No	
Age	20-29	14 (29.2%)	34 (70.8%)	0.31
	30-40	10 (21.7%)	36 (78.3%)	
BMI	Up to 25	14 (26.9%)	38 (73.1%)	1.0
	>25	10 (23.8%)	32 (76.2%)	
Gestational age at presentation	Up to 30	17 (26.6%)	47 (73.4%)	0.72
	>30	7 (23.3%)	23 (76.7%)	
Residence	Urban	4 (20%)	16 (80%)	0.70
	Rural	20 (27.1%)	54 (72.9%)	
H/O Cesarean Section	Yes	10 (22.2%)	35 (77.7%)	0.40
	No	14 (28.6%)	35 (71.4%)	

Discussion

Pre term labor can pose a great difficulty and adverse outcomes in both mother and the fetus and can be even fatal if away from health care facilities especially in the underdeveloped countries. There is wide variability of the data across the globe. However, anemia is highly prevalent in the third world countries.[9,10]

In the present study preterm labor was seen in 24 (25.53%) out of 94 cases having pregnancy and anemia. These results were comparable to the results of the previous studies. The prevalence is seen in 8 to 45% of the cases globally[11,12] and it was further noted that there was linear association of the anemia with

preterm birth, low birth weight and stillbirth and the risk even increases as the Hb falls with negative association with p= < 0.05.[12] These results were also supported by the data from Sudan, which is another resource depleted area and was seen in nearly 30% of the cases and they further described that both low birth weight and children death under 5 years was also significantly high in cases with maternal anemia and was seen in 38% of cases.[13,14] The results of the above mentioned studies are more than current study, which may be due to sampling issues or socio-economical status which are different in both studies.

This was also seen by the results of a meta-analysis, in which it was seen that this incidence was seen in 22% of the cases and moreover, they found an inverse association of anemia and risk of pre term labor with p 0.03.[15] Zhou et al and Xiong Xet al also found significant association of low Hb and pre term labpr.s.[16,17] The studies of Ren et al and Allen LHfound that pre term labor was significantly associated with first trimester anemia.[18,19] In another study done by Wang J et al[20] revealed that hemoglobin level of less than 7 g/dl was seen to affect the females with more number of cases with pre term birth but they did not find this to be associated significantly and so was seen by the study of Levy A et al.[21] In this study we have not stratified anemia and hence were unable to see any association of level of anemia with pre term labour.

Conclusion

Pre term labor is common in cases with anemia and was seen in almost one fourth cases, but has no significant association with age rural residence and previous history of cesarean section.

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Conflict of Interest: None

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