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"A COMPARATIVE STUDY TO ASSESS THE RELATIONSHIP OF PLACENTAL WEIGHT WITH BIRTH OUTCOME AMONG ANEMIC AND NON-ANEMIC MOTHERS ADMITTED IN TERTIARY CARE HOSPITAL OF VADODARA, GUJARAT."

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ABSTRACT

Introduction: Pregnancy with anemic condition of mother is global public health problem. Various factors can affect health capacity of placenta during period of gestation, some factors we can control &some we can't. The objective ofstudy is compare &correlates placental weight & birth outcome among anemic and non-anemic mother. **Material and methods:** ACorrelation & comparative design used for study, total 80 samples, calculated by power analysis & selected by simple randomization technique. Sample divided in two group, Group A-40 anemic mother & Group B-40non-anemic. Data collected byself-structured measurement tool. The collected data tabulated, analyzed by descriptive & inferential statistics. **Result:** The result revealed that,for comparison unpaired t test conducted which found that mean SD of Placental weight among anemic &non-anemic mother respectively, 513.125±50.89 & 449.725±45.92 gives t value 6.065. Diameter of placenta, anemic&non-anemic mean SD 16.27±1.71 & 16.18±1.677 respectively t value 0.228. Length of cord of child in anemic mother mean & SD were 51.175±0.87 andnon-anemic mother 51.1±0.99 and t value 0.347. Weight of child both group mean SD of anemic &non-anemic respectively, 2549.22±171.34 &2640.500±178.69, t value highly significant 2.38, Head circumference in anemic &non-anemic respectively, mean SD 34.51±0.67 & 34.63±0.68, t value 1.955. **Conclusion:** This study concluded that, positive correlation between placental weight & weight of baby among anemic &non-anemicgroup of mother but negative correlation between placental weight & head circumference of baby among both group.

Keywords: Placental Weight, Anemic Pregnant Women, Normal Pregnant Women, Birth Outcome.

INTRODUCTION

World health organization reported that 40% of pregnant women in whole world have anemic condition.[1] India's national health survey of family relies the data of 2005-06 and 2015-16 and explicit that trends in anemia for pregnant women in this they concluded anemia is widespread in India, total of 50.4% pregnant women were found anemic in 2016. In 2002, iron deficiency anemic condition was one of the most important contributing factors to the bunch ofdisease.[2, 3] Anemia during pregnancy upgrade the risk of intrauterine growth reduction of fetus, Low birth weight baby, high maternal and child mortality and premature delivery these condition may arise in those antenatal women who are suffering from anemic condition.[4,5] the more severe anemia the greater risk of other delivered to low birth weight baby due to many factors related to this condition.[6]

If it becomes severe anaemic conditionthen the poor outcome of both mother and fetus can be greatly found. The mother may develop palpitation, breathlessness,tachycardia, increased chances of

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preterm deliveries, associated with anaemia.[7] Fetal iron storage in intra uterine life is depend on iron level of the mother during the time of pregnancy.[8]

Anemic condition is not untreatable condition early detection can help in minimize risk among mother and fetus so it will cure by detect early, if it left uncured then it adversely affect to maternal placenta as well as the fetus. Investigation relieve that frequently anemic condition may lead to weak perinatal outcome compare to normal mothers.[9]

MATERIAL AND METHODS

ACorrelation and comparative design was used for the study, in this study total 80 sample size calculated by power analysis & selected by simple randomization technique. Sample divided in twogroups: GroupA Consist of 40 anemic mother and Group B consist of 40 non-anemic mothers in full term with labor pain. Data collected by using self structured measurement tool which included demographic variable, placental measurement and fetal outcome. The collected data was tabulated and analyzed by using descriptivestatistics Mean, median and standard deviation and inferential statistics unpaired t test, chi square test.

FINDINGS

The result of the study, out of 80 samples, for the comparison unpaired t test was conducted which found that mean and SD of Placental weight among anemic and non-anemic mother respectively, 513.125±50.89 and 449.725±45.92 gives t value 6.065. Diameter of placenta of anemic and non-anemic mean and SD was 16.27±1.71 and 16.18±1.677 respectively, gives t value as 0.228. Length of umbilical cord of the child in anemic mother mean and SD were 51.175±0.87 and in non-anemic mother 51.1±0.99 and t value is 0.347. Weight of the child in Gm in both Group Mean and SD of anemic and non-anemic respectively, 2549.22±171.34 and 2640.500±178.69 and t value shows highly significant 2.38, Head circumference (cm) in both group anemic and non-anemic respectively, mean and SD was 34.51±0.67 and 34.63±0.68 and t value 1.955.

Table 1: Assess the Placental weight and birth out come in Anemic and Non-anemic mothers

Variables	AnemicMothers		NonAnemic Mothers		t-value	P-value
	Mean	SD	Mean	SD		
Placental weight (gm)	513.125	50.89	449.725	45.92	6.065	0.05
Diameter (cm)	16.27	1.71	16.18	1.677	0.228	0.05
Umbilical cord length (cm)	51.175	0.87	51.1	0.99	0.347	0.05
Child Weight (gm)	2549.92	171.34	2640.500	178.69	2.38	0.05
Head circumference(cm)	34.51	0.67	34.63	0.68	1.955	0.05

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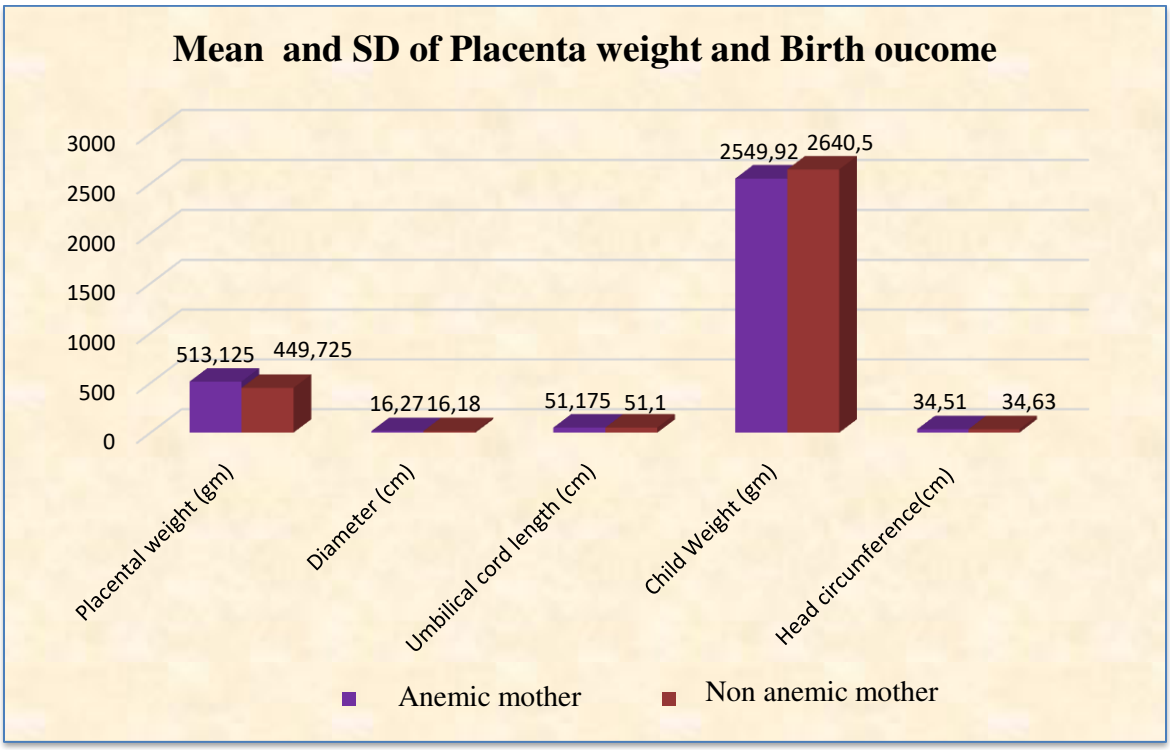

Figure1: Bar Graph representsthe comparison of Mean and SD of Anemic and Non-anemic Mothers

TABLE 2: Correlation between placental weight and Weight of the child among anemic and non-anemic mother

Weight of Child	**Anemic Mothers**				**Non-anemic Mothers**			
	<2500gm		**>2500gm**		**<2500gm**		**>2500gm**	
Mean±SD	2350±105.17		2657±74.92		2330±149		2704.53±94.75	
Unpaired t Test	10.73				8.58			
Placenta Weight	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
<500gm	6	15.00	10	25.00	7	17.5	26	65.00
>500gm	5	12.5	19	47.5	00	00	7	17.5
Total	11	27.5	29	72.5	7	17.5	33	82.5
Chi Square Test	Chi Square: 1.338 p=0.24 df=01				Chi Square: 1.8 p=0.179 df=01			

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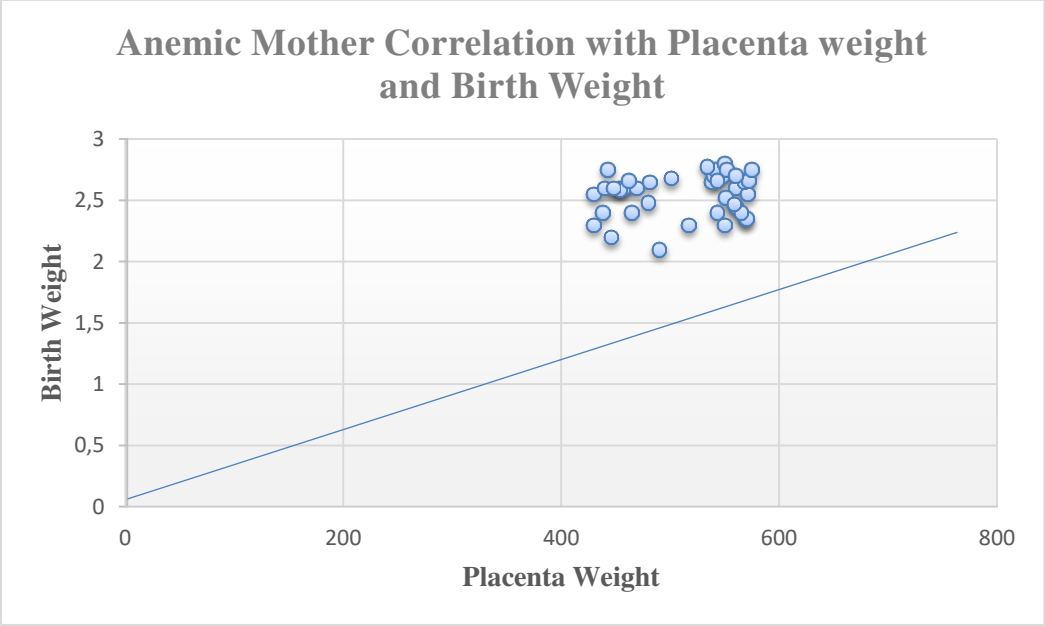

Figur2: Anemic Mother Correlation with Placenta weight and Birth Weight

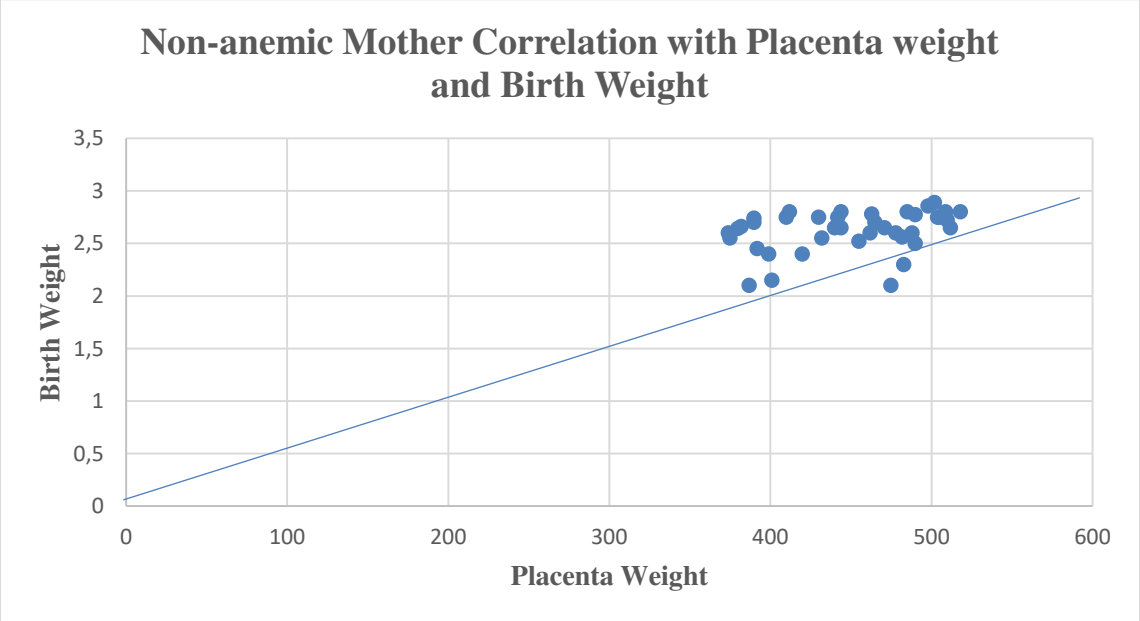

Figure 3: Non-anemic Mother Correlation with Placenta weight and Birth Weight

The result showed relationship between the placental weight and weight of baby among anemic as shown in figure no.2 and non-anemic group of mother as figure no.3.

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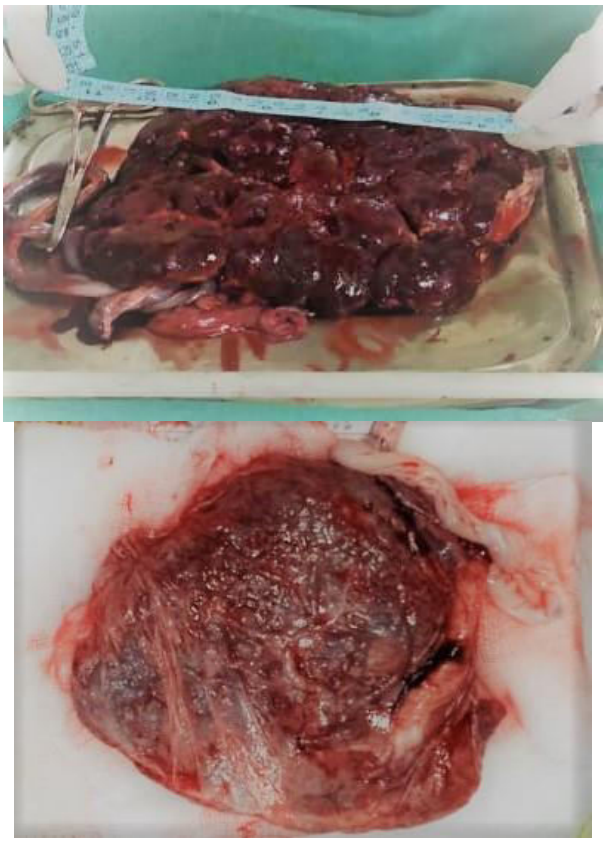

Figure 4: Placenta of anemic mother with infraction and Placenta of non-anemic mother

DISCUSSION

Fetal outcome in anemic and non-anemicmother

The early severe and moderate anemia associated with small for gestation age baby and anemic condition which leads to low birth weight baby.[10]The risk preterm birth increased in women who suffering from anemia.[11]There is also more prevalence of NICU admission and low APGAR score in baby with anemic mother.[12, 13] Eventually, the anemic condition of the mother leads to poor perinatal outcome compare to the non-anemic group of mother. The anemia control measure should start periconceptionally so that women can reserve iron throughout the pregnancy.[14]In present study, the Mean and SD of Weight of the child in both anemic and non-anemic groupis respectively 2549.22±171.34 and 2640.500±178.69.

Placental outcome in anemic mother

The anemia in pregnancy having affect the placental morphology and the function of placenta.[15] Placentalsubchorionic fibrosis, retro placental clot; gross calcification, placental infarction were found significantly higher in lower hemoglobin concentration of mothercompare tonon-anemic mother.[16]Anemia linked with major weight of placenta, smoking linked with higher placental weight there are the multiple etiology responsible for high placental weight.[17] In present study Placental weight among anemic and non-anemic mother respectively, 513.125±50.89 and 449.725±45.92 shown that anemic mother have bigger placenta, compare to non-anemic mother.

The relationship between fetal and placental outcome

There is the positive relationship found between weight of placenta and birth weight of baby. The placental weight of anemic mother is higher compare to non-anemic independent of fetal sex and the fetal weight is also increase as placental weight is increase.[18] Haemoglobin concentration of the mother having affected to the placental vascularity.[19]weight of placenta& placental weight to weight of birth ratio found higher in the pregnancies with the infant Apgar score ≤7 compare with apgar score was >7.[20]

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CONSENT

As per universitystandard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

The study was approved from ethical committee of Sumandeep Vidyapeeth institutional ethical Committee and ethical approval number is SVIEC/ON/ Nurs/ BNPG19/D20043.

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