



FREQUENCY OF PLACENTAL INFARCTS IN PATIENTS WITH SEVERE PLACENTAL ABRUPTION.

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ABSTRACT... Peripheral infarcts on maternal side are relatively common and are not thought to be clinically significant. However those that occupy more than 5% of the placental mass or are more than 3cm in diameter in size are associated with perinatal mortality and morbidity. **Objectives:** To determine the frequency of placental infarcts and its different severity grades among women with severe placental abruption. **Study Design:** Cross sectional descriptive study. **Setting:** Department of Obstetrics & Gynaecology, Postgraduate Medical Institute, Lady Reading Hospital Peshawar. **Period:** January 2016 to July 2016. **Material and Methods:** Patients admitted in hypovolemic shock or intrauterine fetal death was considered as severe abruption. Placenta of the subject was collected from labour room of the wards and was fixed in 10% formalin. Gross examination of placenta performed and then the section of placenta was stained with hematoxylin & eosin stain. The consultant pathologist reviewed the slides. All the data was recorded on predesigned Performa and analyzed through SPSS version 11.0. **Results:** Among 124 cases, majority of women (41.93%) were in the age group 30-40 years and presented at gestation age more than 37 weeks. 21.77% of patients were having placental infarcts of less than 3 cm and 18.54% of cases were having placental infarcts of more than 3 cm. 79.03% of babies born alive, 41.12% were preterm and stillbirth was a finding in 20.96% of cases. Overall frequency of placenta infarcts in patients was 40.32%. **Conclusion:** Placental infarcts were seen in about 40.32% placentae of women with placental abruption. Association between placental infarcts and preterm babies and stillbirths was also significant.

Key words: Fetal Outcome, Placental Abruption, Placental Infarcts.

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INTRODUCTION

Placental Abruption is the cause of vaginal bleeding in later half of pregnancy.¹ Incidence of placental abruption varies from 0.49% to 1.8%² and is an important cause of maternal mortality and morbidity.² The incidence of placental abruption doubles in twin gestations.³

Abruptions are reflected in placenta in a significant way both macroscopically and microscopically.⁴ There is evidence of abruption in 4.5% of placenta from normal pregnancies, suggesting that small episodes of placental abruption are common.¹ Minor areas of infarctions are seen in about 25% of placenta from normal pregnancies.⁵ Abruption involving more than 50% of placenta is frequently associated with fetal death.⁶

Placental abruption was thought as an acute event though data points towards abruption being the end result of chronic process started early in pregnancy.⁷ Placental abruption is result of chronic processes that are present throughout gestation and responsible for term placental abruption. Risk of placental abruption was the highest in the presence of both histological lesions and vaginal bleeding early in pregnancy.⁷

As placenta abruption is the result of placental infarcts which is a chronic process. The aim is to study infarcts and its different severity grades histopathologically in placenta from women with severe abruption.

Keeping in mind the clinical implications it carries and as there is no local study available, this study shall be a helpful contribution to making guidelines for its management and thus in improving the outcome in subsequent pregnancy of women with abruptions.

MATERIAL AND METHOD

This descriptive study was conducted from January 2016 to July 2016 in the Department of Obstetrics & Gynaecology, Postgraduate Medical Institute, Lady Reading Hospital Peshawar. Using WHO software, a sample size of 124 subjects for confidence level 95% was selected and women admitted through emergency were included in the study who fulfill the operational definition of severe placental abruption. Women with multiple pregnancies, Polyhydramnios, those with history of medical disorders like diabetes, hematological diseases or causes of vaginal bleeding like placenta previa diagnosed on ultrasound were excluded.

After obtaining formal history and decision to include the patient in the study, blood loss was estimated through graduated jar. Assessment of amount of blood loss was on amount of blood loss at the time of admission and amount of blood loss after delivery. Placenta of the subject was collected from labour room of the wards. Placenta was weighed after removal of adherent blood, umbilical cord and extra placental membranes and was fixed in 10% formalin. The sample was allotted special code and then sent to histopathology laboratory of LRH Peshawar with proper care and coordination between unit and laboratory. Gross examination of placenta performed and then the section of placenta was stained with hematoxylin & eosin stain. The consultant pathologist reviewed the slides. Placental infarct was stratified among the gestation age and age of mothers to see the effect modifiers.

All the data was recorded on a predesigned Performa and analyzed by using SPSS version 11.0.

RESULT

A total of 124 singleton pregnant women with severe placental abruptions were selected in accordance with the inclusion criteria. Majority of the women i.e. 41.93% were in the age group of 30-40 years. Age group 20-29 years was next in line with 32.25%. 16.93% of cases were in age group > 40 years and the least number of cases were seen in age group <20 years i.e. 8.87%. Age wise distribution of patients is shown in Table-I.

Total Number of Patients = 124

Age (Years)	Nos. of Patients	%Age
< 25	11	8.87%
20 to 29	40	32.25%
30 to 40	52	41.93%
> 40	21	16.93%
Total	124	100%

Table-I. Age wise distribution of patients

With regard to severity of placental infarcts, majority of patients (59.67%) were having no placental infarct. 21.77% of patients were having placental infarcts of less than 3 cm and 18.54% of the patients had placental infarcts of more than 3 cm. (Table-II)

Total Number of Patients = 124

Placental Infarcts	Nos. of Patients	%Age
Absent	74	59.68%
Area of less than 3cm	27	21.77%
Area of more than 3cm	23	18.55%
Total	124	100%

Table-II. Severity of placental infarcts

Overall frequency of placenta infarcts in patients with severe abruption was 40.32% and no placental infarcts were observed in 59.67% of cases. (Table-III)

Total Number of Patients = 124

Placental Infarcts	Nos. of Patients	%Age
Yes	50	40.32%
No	74	59.68%
Total	124	100%

Table-III. Overall frequency of placenta infarcts

Among 124 cases, 79.03% of babies born alive, 41.12% were preterm and stillbirth was a finding in 20.96% of cases. (Table-IV)

Total Number of Patients = 124

Fetal Outcome	Nos. of Patients	%Age
Preterm	51	41.12%
Alive	98	79.03%
Stillbirth	26	20.96%

Table-IV. Fetal outcome

Stratification according to age and gestational age is shown in Table-V.

Total Number of Patients = 124

Age Group (in Years)	Placental Infarcts (Yes)	Placental Infarcts (No)	P-Value
<20	4	7	Chi-square value=0.1295 df=3 p value=0.9880
20-29	16	24	
30-40	21	31	
>40	9	12	
Gestational age at presentation			
< 37 weeks	21	30	Chi-square value=0.0262 df=1 p value=0.8712
> 37 weeks	29	44	

Table-V. Stratification according to age and gestational age

DISCUSSION

Placental abruption is one of the most common causes of late pregnancy bleeding.⁸ In humans, it refers to the abnormal separation after 20 weeks of gestation and prior to birth.⁹ Placental abruption usually presents as combination of vaginal bleeding, uterine contractions, and pain.¹⁰ The perinatal mortality rate varies between 20% and 67%, depending on gestational age, fetal weight, and the degree of abruption.¹¹ About half of perinatal deaths due to placental abruption occur in, which also makes this disorder a major contributor to stillbirth.¹²

In this study higher percentage (41.93%) of patients falling in age group of 30- 40 years is supportive of another local study conducted in Pakistan where placental abruption was more

common in age group 31-40 years¹³ and is also comparable with another study from Pakistan in which 44.37% patients were in the age group of 36-40 years.¹⁴ Other International and National studies have reported that pregnant women who are younger than 20 or older than 35 years had greater risk for placental abruption.¹⁵ Similarly, a study reported that mothers with infarcts tended to be younger than those without infarcts.¹⁶

With regard to gestational age at presentation, the outcome of this study indicating higher percentage (58.87%) at gestation age less than 37 weeks is inconsistent to another study conducted in Pakistan, where most of the women who presented with abruptio placenta had gestational age <36 weeks.¹⁷ Krishna Menon¹⁸ found the highest incidence among the same subgroup while Parikh MN found higher incidence among 37 weeks and above.¹⁹

Considering the severity of the placental infarct and overall frequency of placental infarcts in patients with severe abruption, the results of our study are comparable with an International study, where severity of placental infarct was mild in 10.25%, 33.3% moderate and 59% severe. Similar finding was noted by Bandana Das et al in 1996.²⁰

Overall frequency of placenta infarcts in the present study with severe abruption was 40.32% and no placental infarcts were observed in 59.67% of cases. Tuzovic et al²¹ had recorded 29% cases of placental infarcts while Bhatia et al had recorded 30% cases of placental infarcts which is comparable with our results. Another International study reported incidence of placental infarcts in 29% of cases.²²

Regarding outcome of patients with placental infarct, the results generated by another local study from Pakistan showed that in 90 patients whose placentas were infarct free, 91.11% (n=82) fetuses were alive and 8.88% (n=8) fetuses were still-born.²³ Fetal outcome in 40 patients whose placentas showed infarct was that 70% (n=28) fetuses were alive and 30% (n=12) fetuses were

still-born.²³ Similar results were found in study done by Bhatia²⁴ in which infarction was present in 5% of controls and the association of still birth with infarction was highly statistically significant.

CONCLUSION

Frequency of placental infarcts is quite high in patients with severe abruption. There is significant association between placental infarcts and preterm babies and stillbirths. Severe placental infarcts have an adverse effect on the fetal outcome.

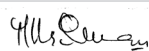
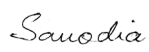
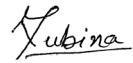


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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author's Signature
1	Dureshahwar	Concept and design of the study, Final approval and guarantor of the article.	
2	Sanodia Afridi	Collection and assembly of data, Interpretation of the data.	
3	Rubina Akhter	Critical revision of the article for important intellectual content.	
4	Irshad Ahmad	Statistical expertise and english language proof reading.	
5	Sajida Asghar	Critical revision of the article for important intellectual content.	
6	Saniya Naheed	Collection, assembly and interpretation of data.	