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Placental Abruption at a Tertiary Hospital in Southern Nigeria: A Six-Year Review of Prevalence, Trend and Sociodemographic Characteristics

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ABSTRACT

ABSTRACT: Background: Placental abruption also known as abruptio placentae or accidental haemorrhage, is the second most common cause of antepartum haemorrhage after placenta praevia. The study was aimed at reviewing cases of placental abruption managed at the Rivers State University Teaching Hospital (RSUTH) over a 6-year period, to determine the prevalence, trend, and sociodemographic/obstetrics factors.

Methods: This was a cross-sectional study of all recorded cases of placental abruption managed at the Rivers State University Teaching Hospital (RSUTH) from 1st January 2016 to 31st December 2021. Descriptive statistics were derived using IBM, Statistical Product and Service Solutions (SPSS) version 25.0 Armonk, New York.

Results: There were 14,195 deliveries and 68 cases of placental abruption; giving a prevalence of 0.48% or 4.8 per 1000 or 1 in 208 deliveries. The rate of placental abruption per 1000 deliveries increased from 2.0 in 2016 to 8.7 in 2018 and then decreased to 6.2 in 2021. The mean (SD) age and gestational age of the participants were 32.7±4.8, (95%CI: 31.5, 33.9) years and 35.6 ±3.2 (95%CI: 34.8,36.4) weeks. The modal parity was para 1. Over 90% of the participants had emergency caesarean sections. The majority 65(95.6%) of the participants were Christians, 56(82.4%) booked and more than half 37(54.4%) were multipara.

Conclusion: The prevalence of placental abruption in RSUTH is 0.48%; with a declining pattern of occurrence. It occurred more among booked multiparous women. This Knowledge will be helpful to Clinicians in management of Placental Abruption.

KEYWORDS: Placental abruption, accidental haemorrhage, Abruptio placentae, trend RSUTH.

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INTRODUCTION

Placental abruption is one of the major causes of antepartum haemorrhage and is associated with high maternal and foetal morbidity and mortality [1, 2], in particular, in poor resource settings. It is defined as the partial or total separation of the normally situated placenta from its attachment to the uterus, after the period of foetal viability and before the delivery of the foetus [3-5]. Separation of the placenta results in bleeding into the decidua basalis forming a retroplacental clot between the placenta and decidua basalis. This interferes with the oxygen supply to the foetus resulting in foetal distress. Placental abruption can be classified into revealed and concealed. In revealed abruptio placentae almost all of the bleeding is expressed in the genital tract. Although some bleeding may be seen in concealed type, the majority is not expressed through the genital tract[4]. Additionally, it can be classified as mild or severe when the foetus is alive or dead respectively.

Placental abruption can also be categorized into grades 0 to 3 based on the severity of clinical presentation: Grade 0- no obvious clinical features but retroplacental clot is found during delivery; Grade 1(mild)-there may be slight external

bleeding, uterine tenderness, abdominal pain, good foetal heart rate, retroplacental clot <200mls and absence of shock[6]. In grade 2 (moderate), the external bleeding is mild to moderate, there is often the presence of abdominal pain, the uterus is tender, maternal shock is absent and tachycardia is present without any sign of hypovolaemia. Foetal heart rate may be present or absent and the volume of retroplacental clot varies from 200-500mls [6].

Grade 3 is associated with moderate to severe bleeding (either revealed or concealed); there may be presence of tonic uterine contraction (tetany), abdominal pain and marked uterine tenderness. More than 50% of the placenta separates and the retroplacental clot is usually more than 500mls. Complications such as disseminated intravascular coagulopathy and oliguria are often present [6].

The risk factors for placental abruption include the following amongst others: hypertensive heart diseases such as pregnancy-induced hypertension, chronic hypertension, preeclampsia/eclampsia, multiparity, previous history of abruptio placentae, abdominal trauma, smoking, advanced maternal age, abnormal presentation, External cephalic version, polyhydramnios, thrombophilia[4, 5, 7]

There is scarcity of literature on placental abruption in our setting. This study is aimed at determining the prevalence, trend and sociodemographic /obstetric factors pregnancies complicated by abruptio placentae.

MATERIALS AND METHODS

The study was conducted at the Rivers State University Teaching Hospital (RSUTH), Port Harcourt, Rivers State, Nigeria. RSUTH is one of the tertiary health facilities in Rivers State and located at the heart of Port Harcourt the capital of Rivers State. The Hospital receives referral from within and neighbouring states.

This was a cross-sectional study of all cases of placental abruption managed at the RSUTH, from 1st January 2016 to 31st December 2021. The cases were collated from the labour ward, post-natal and the theatre records. The total number of deliveries during the review period was obtained from the theatre records/registers and labour ward. A study proforma was designed and used to collect data on sociodemographic / obstetric factors, risk factors, and foeto-maternal outcomes. Antepartum haemorrhage was defined as bleeding from the genital tract after the period of foetal viability [8]. Placental abruption is defined as premature separation of normally situated placenta after the period of foetal viability -which is 28 weeks in our setting. Diagnosis was made clinically (based clinical features, risk factors and examination findings such as vaginal bleeding, abdominal pain, hypertonic uterus, woody hard abdomen), ultrasonographic findings suggestive of abruptio placentae and during caesarean section (based on finding of retroplacental cloth in addition to antepartum haemorrhage).

Data collected were entered into Microsoft word Excel office 2019 and exported to IBM, Statistical Product and Service Solutions (SPSS) version 25.0, Armonk, New York, for analysis. Categorical variables were summarized in frequencies and percentages while symmetrical continuous variables were summarized using mean and standard deviations with 95% confidence intervals around the point estimates. Asymmetrical continuous variables were summarised using median and range. Ethical clearance for the study was obtained from the Hospital's Research and Ethics Committee.

RESULTS

There were 14195 deliveries and 68 cases of placental abruption, giving the prevalence of abruptio placentae at the Rivers State University Teaching Hospital as 0.48% or 4.8 per 1000 deliveries. The rate per 1000 deliveries increased from 2.0 in 2016 to 8.7 in 2018 and then decreased to 2.1 in 2020 with a rise to 6.2 in 2021 (Table 1).

Table 1. Annual trend in the rate of placental abruption in RSUTH

Year	Cases of Abruptio placentae (%)	Total no of deliveries	Percentage of total deliveries	Rate per 1000 deliveries
2016	7(10.3)	3495	0.20	2.0
2017	12(17.6)	2747	0.44	4.4
2018	20(29.4)	2294	0.87	8.7
2019	14(20.6)	1960	0.71	7.1
2020	4(8.0)	1910	0.21	2.1
2021	11(16.1)	1789	0.62	6.2
Total	**68 (100)**	**14195**	**0.48**	**4.8**

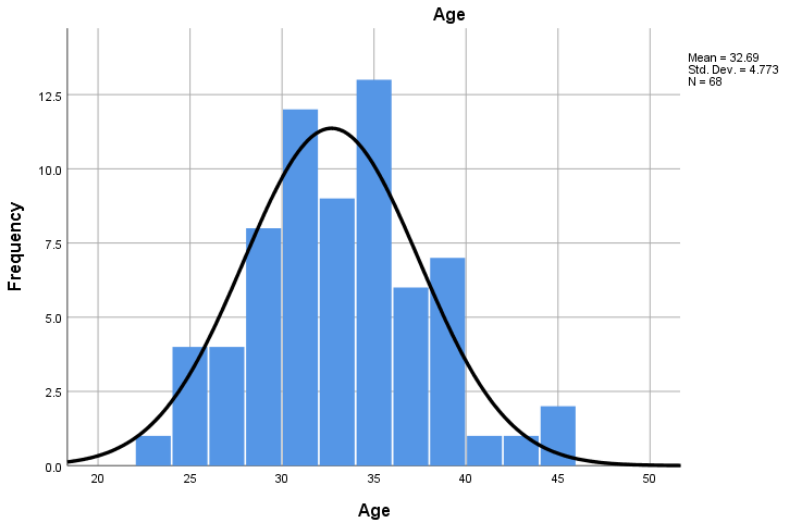

Figure 1. Age distribution of the study participants

Their mean (SD) age and gestational age were 32.7 (±4.8) years (Figure1) and 36.7 (±3.2) weeks respectively. Table 2 Shows the sociodemographic and obstetrics factors of the study participants. The majority 65(95.6%) of the participants were Christians, 56(82.4%) booked and more than half 37(54.4%) were multipara.

Table 2. Sociodemographic/ Obstetric factors of study participants

Variables	**Number n=68**	**Percentage**
Age (Years)		
20-24	2	2.9
25-29	15	22.1
30-34	28	41.2
35-39	19	27.9
40-44	4	5.9
Mean age 32.7	SD# 4.8	95%CI+: 31.5, 33.9
Mean GA* 36.7	SD 3.2	95%CI: 34.8,36.4
Parity		
0(Nullipara)	9	13.2
1(Primipara)	21	30.9
2-4(Multipara)	37	54.4
≥5(Grand multipara)	1	1.5
Educational Status		
Primary	16	23.5
Secondary	27	39.7
Tertiary	25	36.8
Religion		
Christianity	65	95.6
Islam	3	4.4
Type of surgery		
Emergency	63	92.6
Elective	5	7.4
Cadre of Surgeons		
Registrar	2	2.9
Senior registrar	52	76.5
Consultant	14	20.6
Booking Status		
Booked	56	82.4
Unbooked	12	17.6

#SD- Standard deviation +CI-Confidence interval *GA- Gestational age

Most of the surgeries 52 (76%) were carried out by senior registrars followed by the consultants 14(20.6%). As regards the type of surgeries, majority 63 (92%) had an emergency caesarean section (Table 2).

DISCUSSION

Placental abruption is one the major causes of maternal and foetal morbidity and mortality [9]. The prevalence of abruptio placentae at the Rivers State University Teaching Hospital is 0.48% or 4.8 per 1000 deliveries. This finding is similar to the finding of - 0.5% [10] in a previous study but higher than 0.3%[2] reported in Tanzania and 0.34%[11] in another study and lower than 1.1%[12] , 0.8%[13] and 1.4% [14] reported in North central ,South East Nigeria and Ghana respectively.

The differences in the prevalence of placental abruption across studies could be due to the variation in the number of cases, total number of deliveries and methodologies. In present study we reviewed cases of placental abruption over six years and the total number of deliveries over the period was high perhaps as a result of the free medical care services during the first 2 years. Nevertheless, the prevalence of abruptio placenta from present study falls within the reported range in the literature.

Although the rate of placental abruption per 1000 deliveries increased from 2.0 in 2016 to 8.7 in 2018 and then decreased to 2.1 in 2020 with a rise to 6.2 in 2021, a decreasing trend was observed over the period of review. This is similar to finding of a previous study [15]. The decrease in the total number of deliveries and enlightenment campaign against traditional practices of abdominal massage could account for this finding. Additionally, over two third of the participants were booked patients; as such had their pregnancies supervised in a tertiary centre where the risk factors were managed appropriately. This is in contrast to the findings of previous studies [16-18] where most of the cases where unbooked. Our hospital is a referral centre; as such high-risk cases were referred for expert care. This could account for the above finding.

The mean ±SD age of the participants was 32.7 ±SD 4.8 and the modal age group was 35-39 years. This is similar to findings of previous studies [1, 19, 20] where older women had a higher risk of placental abruption compared to younger age groups.

More than half of the cases of placental abruption occurred among multiparous women compared with primiparous and nulliparous women. This is in keeping with findings of previous studies [15, 21, 22]. Majority (82%) of the participants were booked patients. This finding corroborates those of previous findings but contrary to the findings of Igwegbe et al., [13] in Enugu, south east Nigeria.

Over 90% of the participants had emergency caesarean section for different obstetric indications and most of the surgeries were carried out by the senior registrar. This is not surprising as placental abruption is a dire obstetric emergency. As such, the surgery should be carried out by a senior member of the team.

This is one of the first studies on placental abruption in our centre. Although a single centre study, findings may not be representative of those of other centres. However, the findings add to the body of literature on placental abruption and fill the gap in knowledge of abruption in Port Harcourt, Rivers State.

CONCLUSION

The prevalence of placental abruption in RSUTH is 0.48%; with a declining pattern of occurrence. It occurred more among booked multiparous women. This knowledge will be helpful to clinicians in management of placental abruption.

COMPETING INTEREST

Authors have no competing interests to declare

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