International Journal of Research and Review
[Indexed, Peer-Reviewed Journal]
Volume 12; Issue: 3; March 2025
Website: www.ijrrjournal.com
Research Paper *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

Placenta Praevia: A Five-Year Review of Prevalence, Trend and Risk Factors in A Tertiary Hospital, Enugu, Nigeria

Livinus Nnanyelugo Onah[1], Malachy Nwaeze Ezenwaeze[1], Kelvin Emeka Ortuanya[1]

[1]Department of Obstetrics and Gynaecology, Enugu State University Teaching Hospital, Enugu, Nigeria.

Corresponding author: Malachy Nwaeze Ezenwaeze

DOI: https://doi.org/10.52403/ijrr.20250302

ABSTRACT

Background: Placenta praevia accounts for a considerable proportion of maternal morbidity and mortality globally especially in low- and middle-income countries where access to timely obstetric care may be limited.

Objective: This study assessed the prevalence, trend and risk factors of placenta praevia at the Enugu State University Teaching Hospital (ESUT-TH), South-East Nigeria.

Methods: This was a descriptive cross-sectional study of all cases of placenta praevia managed at the Enugu State University Teaching Hospital (ESUT-TH) Parklane, from 1st January 2019 to 31st December 2023. All cases of placenta praevia were collated from the labour ward, post-natal and the theatre registers. A well-structured study proforma was designed and used to collect data on sociodemographic/obstetric factors, types of placenta praevia and risk factors. Both clinical and radiological assessments were employed in the diagnosis. The collected data was analysed using the Statistical Package for Social Sciences (SPSS) (IBM Chicago) version 28. Categorical variables were presented in frequencies and percentages while symmetrical continuous variables were presented using mean and standard deviations with 95% confidence intervals around the point estimates.

Results: Over the 5-year study period, 10,020 deliveries, and two hundred and one (201) cases of placenta praevia were observed, giving the prevalence of placenta praevia at 2% or 20.1 per 1000 deliveries. The mean (SD) age and gestational age were 32.6 (±4.7) years and 35.7 (±3.3) weeks respectively. Majority of the research participants 77(38.3%) were between 30-34 years of age. Most of the participants 78(39) also had secondary level of education followed by 72(36%) who had tertiary education. The least number 51(25%) had primary education. One hundred and ninety-two participants (96%) were Christians while nine participants (5%) were non-Christians. More than half, 57.7% were multiparous. The majority of the patients, 113(56%) booked for antenatal care. The rate of occurrence of placenta praevia showed an upward trend, it increased from 2.5 in 2019 to 5.4 in 2023. Out of the 201 recorded cases of placenta praevia, type 1 praevia occurred in 16.4% of participants, type 2 in 24.4%, type 3 in 39% while type 4 praevia occurred in 20.4%. The commonest risk factor observed from the study was previous caesarean section 87 (43.3%), followed by high parity 33(16.4%). Other observed risk factors in decreasing frequency include surgical evacuation of uterus (12.4%), Prior

myomectomy (9.4%), advanced maternal age (5%), Previous placenta praevia (4.5%), multiple pregnancy (4.5%) and co-existing uterine fibroid (2.5%). There were no identifiable risks in 2%

CONCLUSION: The prevalence of placenta praevia in Enugu State University Teaching Hospital is 2%. There is a trend towards an exponential increase in the prevalence rate of praevia in ESUT-TH with previous caesarean delivery as the commonest risk factor.

Awareness of the above findings will help in instituting measures to reduce the risks of placenta praevia as well as its associated morbidity and mortality

Keywords: Placenta praevia, prevalence, trend, risk factors

INTRODUCTION

Placenta praevia is a condition characterized by the abnormal implantation of the placenta over or near the internal cervical os resulting in potential complications during pregnancy and childbirth [1]. Placenta is defined as low-lying if the leading placental edge is within 20 mm of the internal os of the cervix [2]. Pathophysiology of placenta praevia is initiated by the implantation of the embryo (embryonic plate) in the lower uterus [2]. It is often categorized based on the degree of coverage of the cervical os, ranging from marginal to complete [3]. placenta praevia is the leading cause of vaginal bleeding in the second and third trimesters of pregnancy, which can result in serious maternal and fetal complications. placenta previa accounts for a considerable proportion of maternal morbidity and mortality globally especially in low- and middle-income countries where access to timely obstetric care may be limited [4].

The prevalence of placenta praevia is reported to occur in approximately 0.5-1% of pregnancies even though it has a global variation. The global prevalence is estimated at 3 to 5 per 1,000 live births, although regional variations exist depending on socioeconomic factors, healthcare access, and obstetric care quality [5]. Advanced maternal age and increasing rate of caesarean deliveries have been linked to current increase in the prevalence of placenta praevia [6,7]. Report from previous studies in Southeast Nigeria showed a varying prevalence rates of 0.5% to 1.5% among hospital deliveries [8]. The prevalence is higher in Sub-Saharan Africa where access to antenatal care services is often delayed or inadequate and the management further complicated by limited access to emergency obstetric services [9]. Appreciation of the local prevalence and negative impact on maternal and fatal heath is crucial for the development of appropriate interventions to curb its occurrence and improving feto-maternal outcomes which underscores the importance of this study.

The risk factors for Placenta previa will include prior caesarean sections, advanced maternal age, high parity, multiple pregnancies (due to insertion at a new site in each pregnancy), previous uterine surgeries/scars ((from myomectomy, manual removal of placenta, evacuation of retained products of conception), previous placenta praevia, induced and spontaneous miscarriages, coexisting uterine fibroids, multiparity, endometritis and advanced maternal age [5,10-12]. Large placenta size as seen in cases of multiple gestations, diabetes mellitus, severe anaemia, smoking and polyhydramnios are other risk factors owing their ability to cause extension of the placenta down to the lower uterine segment [11,13,14]. The placenta as a fastidious organ usually implants at a new site in each pregnancy, avoiding previously implanted sites or scarring [11]. These factors have been reported to be on the increase due to a change in cultural perception and rising rate of caesarean deliveries [15].

Affected mothers often present with painless vaginal bleeding in the late second and /or third trimester. In a previous cross-sectional study conducted in Port Harcourt, Nigeria on antepartum haemorrhage, placenta praevia was the most common cause of antepartum haemorrhage accounting for 28.2 % of cases of APH [10].

Abnormal placentation like morbidly adherent placenta is known to be associated with life-threatening haemorrhage, increased requirement for blood transfusion [9] peripartum hysterectomy and foeto-maternal complications.[16,17]. various studies have reported severe complication of placenta praevia (placenta percreta causing uterine rupture in previously unscarred uterus [18,19].

Fetal complications will include Preterm birth, 5% of all preterm deliveries are attributed to placenta praevia [20], intrauterine growth restriction (IUGR), high perinatal mortality rates up to the tune of 81 per 1,000 births according to previous study [21], neonatal morbidity and mortality, prematurity, respiratory distress syndrome (RDS), asphyxia and Long-term poor neurodevelopmental outcomes [22].

The above background underscores the urgent need to unravel the prevalence, trend and risk factors of placenta praevia in ESUT-TH to form basis for modification of our practice to avert the gamut of placenta praevia sequelae.

MATERIALS AND METHODS

This was a descriptive cross-sectional study of all cases of placenta praevia managed at the Enugu State University of Science Teaching Hospital (ESUT-TH) Parklane, from 1st January 2019 to 31st December 2023. All cases of placenta praevia were collated from the labour ward, post-natal and the theatre registers. The total number of deliveries during the review period was also obtained from the labour ward and theatre registers. A well-structured study proforma was designed and used to collect data on sociodemographic/obstetric factors, type of placenta praevia, trend and risk factors. placenta praevia was defined as a placenta that is partially or wholly implanted in the lower uterine segment after the age of foetal viability (28 completed weeks in our environment). Both clinical and radiological assessments were employed in the diagnosis. Placenta praevia was diagnosed when a patient had vaginal bleeding from ≥ 28 weeks, and transvaginal ultrasound (TVS) or transabdominal ultrasound performed by a consultant radiologist demonstrated lower edge of placenta within 2 cm from the internal os. The collected data was analysed using the Statistical Package for Social Sciences (SPSS) (IBM Chicago) version 28. Categorical variables were presented in frequencies and percentages while symmetrical continuous variables were presented using mean and standard deviations with 95% confidence intervals around the point estimates. The proportion of women diagnosed with placenta praevia was calculated for prevalence assessment. Ethical clearance for the study was obtained from the Hospital.

RESULTS

Over the 5-year study period, 10,020 deliveries, and Two hundred and one (201) cases of placenta praevia were observed, giving the prevalence of placenta praevia at 2% or 20.1 per 1000 deliveries.

Table 1 shows the Sociodemographic/ obstetric characteristics of the study participants. The mean (SD) age and gestational age were 32.6 (±4.7) years and 35.7 (±3.3) weeks respectively. Majority of the research participants 77(38.3%) were between 30-34 years of age. Most of the participants 78(39) also had secondary level of education followed by 72(36%) who had tertiary education. The least number 51(25%) had primary education. One hundred and ninety-two participants (96%) were Christians while nine (5%) were non-Christians. More than half, 57.7% were multiparous. The majority of the patients, 113(56%) booked for antenatal care.

Table 1. Sociodemographic/obstetric characteristics of the study participants

Variables	Number n=201	Percentage
Age (years)		
<20	7	3.5
20-24	10	5
25-29	41	20.4
30-34	77	38.3
35-39	53	26.4
>40	13	6.5
Mean age 32.6	SD 4.7	95%CL:37.5,34.6
MEAN GA 35.7	SD 3.3	95%CL:35.5,36.4
Parity		
Primipara (1)	70	34.8
Multipara (2-4)	116	57.7
Grand multipara (≥5)	15	7.5
Religion	Variable	Percentage
Christian	192	96
Non-Christian	9	5
Educational status		
Primary	51	25
Secondary	78	39
Tertiary	72	36
Booking status		
Booked	113	56
Unbooked	88	44

The rate of occurrence of placenta praevia showed an upward trend. It increased from 2.5 in 2019 to 5.4 in 2023 as shown in table 2. Out of the 201 recorded cases of placenta praevia, type 1 praevia occurred in 16.4% of participants, type 2 in 24.4%, type 3 in 39% while type 4 praevia occurred in 20.4% (figure 1). The commonest risk factor observed from the study was the history of previous caesarean section 87 (43%), followed by high parity 33(16.3%). Other observed risk factors in decreasing frequency include surgical evacuation of uterus (12.4%), Prior myomectomy (9.4%), Advanced maternal age (5%), Previous placenta praevia (4.5%), Multiple pregnancy (4.5%), Co-existing uterine fibroid (2.5%) and no identifiable risks in 2% (Table 3)

Table 2: Yearly trend of placenta praevia

Year	Cases of placenta praevia%	Total deliveries per year	Percentage of total deliveries	Rate per 1000 deliveries
2019	25(12)	2489	0.25	2.5
2020	30(15)	2134	0.3	3
2021	43(21.4)	1984	0.43	4.3
2022	49(24.4)	1741	0.49	4.9
2023	54(27)	1672	0.54	5.4
Total	201(100)	10,020	2	20

Figure 1: Types of placenta praevia

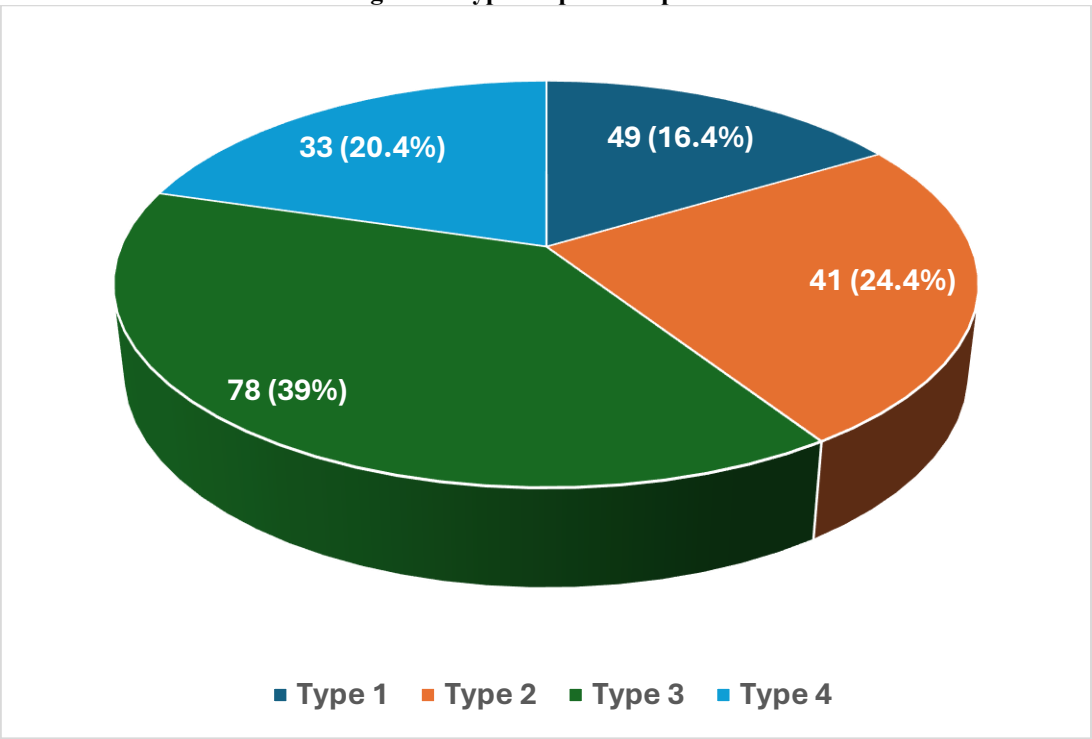

Table 3: Risk factors for placenta praevia

Risk factors	Total number	Percentage
Prior caesarean section	87	43.3
High parity	33	16.4
Surgical evacuation of uterus	25	12.4
Prio myomectomy	19	9.5
Advanced maternal age	10	5
Previous placenta praevia	9	4.5
Multiple pregnancy	9	4.5
Co-existing uterine fibroid	5	2.5
Undetermined	4	2
Total	201	100

DISCUSSION

The prevalence of placenta praevia at the Enugu State University Teaching Hospital is 2% or 20.1 per 1000 deliveries. This is similar to 1.5% prevalence from the previous study conducted in the University of Nigeria Teaching Hospital, South East Nigeria [23], and 2.6% reported in Ondo State [24], and another reported prevalence of 2.4% [25] both in South west Nigeria. The prevalence of 2% found in this study was lower than 0.92% reported by Odelola et al in Olabisi Onabanjo University [26] and 0.97% reported by Wekere et al in the River State Teaching Hospital [27] as well as other reports from previous studies [28,29]. The variation in the prevalence of placenta praevia could have resulted from the differences in the number of deliveries, the period of review and the increasing risk factors like rising caesarean rate. This present review like that of Odelola was a five-year review, but the total number of delivery and placenta praevia were 5124 and 47 respectively unlike in the present study that recorded 10,020 deliveries and 201 cases of placenta praevia, buttressing the variation in the prevalence. In addition, ESUT Teaching hospital is centrally located in Enugu Sate and serves as a major referral centre for all emergency and non-emergency cases. There is an exponential increase in the observed prevalence of placenta praevia over the years of the study, rising from 2.5 in 2019

to 5.4 in 2023. This could be due to the observed rise in caesarean rate. The increasing rate of caesarean deliveries have been linked to higher rate of placenta praevia prevalence in literature [6,7]. The mean age of the participants was 32.6 ±SD 4.7 with modal age of 35-39year. This corroborated the findings of previous studies where older women had a higher risk of placenta praevia compared to younger age groups [30,31]. The higher rate of placenta praevia among women of higher parity in this study corroborated the finding of previous studies [32,33]. Most of the studied participants booked for antenatal care. This also was similar to the findings of Wekere et al [27] and other studies [28,34] but differs from the report of Odelola [26]. The variation in the booking status could be due to environmental difference in health seeking behaviours of participants and the extent of counselling after patients are exposed to the possible risks. In terms of frequency of occurrence of different types of placenta praevia, type three praevia was top on the list, accounting for 39% of the observed cases of placenta praevia. This finding is a wakeup call for clinicians to know that in most cases where placenta praevia is entertained, that it may belong to a major degree, hence requiring astute management to ensure improved outcome. Previous caesarean section was the commonest risk factor observed. This corroborated the findings of previous studies [27,34].

CONCLUSION

The prevalence of placenta praevia in Enugu State University Teaching Hospital is 2%. There is a trend towards an exponential increase in the prevalence rate of praevia in ESUT-TH, with previous caesarean delivery as the commonest risk factor.

Awareness of the above findings will help in instituting measures to reduce the risks of placenta praevia as well as its associated morbidity and mortality

Declaration by Authors

Ethical Approval: Ethical approval for the study was obtained from the Hospital ethics committee

Acknowledgement: Authors acknowledge the medical doctors, Nursing staff and medical record officers for proper recording, filing and retrieval of registers and case notes used in the study

Source of Funding: No external funding outside the authors

Conflict of Interest: Authors have no competing interests

REFERENCES

1. Sahu S A, Shrivastava D (May 06, 2024) Maternal and Perinatal Outcomes in Placenta Previa: A Comprehensive Review of Evidence. Cureus 16(5): e59737. DOI 10.7759/cureus.59737
2. Umeh UA, Umeh CR, Obi SN, Nwankwo TO, Obuba CI, Ezugwu E. Prevalence, outcome, and predictors of placenta migration among pregnant women with placenta praevia in Enugu Nigeria. Niger J Med 2023; 32:246-50
3. Placenta previa and placenta abruptio. (2024). Accessed: April 20, 2024: http://www.glowm.com/article/heading/vol-10--common-obstetric-conditions--placenta-previa-andplacenta-abruption/id/4
4. Cresswell JA, Campbell OMR, Filippi V. Impact of placenta previa on maternal and neonatal outcomes in low- and middle-income countries. BMC Pregnancy and Childbirth, 2019;19:545.
5. Silver RM, Landon MB, Rouse DJ. Placenta previa and placental abruption. American Journal of Obstetrics and Gynecology, 2021;225(2):136-147.
6. Jansen CH, Kastelein AW, Kleinrouweler CE, Van Leeuwen E, De Jong KH, Pajkrt E, Van Noorden CJ: Development of placental abnormalities in location and anatomy . Acta Obstet Gynecol Scand. 2020, 99:983- 93. 10.1111/aogs.3834
7. Rana A, Bhattacharya S, Simpson R. Risk factors and management strategies for placenta previa. Placenta, 2020;98:58-64.
8. Obuna JA, Umeh UA, Njoku CO. Placenta previa: Maternal and fetal outcomes in Southeast Nigeria. International Journal of

Gynecology and Obstetrics, 2019;144(1):50-55
9. Umeora OU, Egwuatu VE, Anozie OB. Maternal outcomes in placenta previa and its complications in Sub-Saharan Africa. Journal of Maternal-Fetal & Neonatal Medicine, 2018;31(7):954-959.
10. Wekere FCC, Kua PL, Akani A, Bademosi A: Prevalence, maternal and perinatal sequelae of antepartum haemorrhage in a tertiary hospital in South-South, Nigeria. International Journal of Clinical Obstetrics and Gynaecology 2021, 5(5):206-210.
11. Okafor II: Antepartum Haemorrhage. In: Our Teachers- A Comprehensive Textbook of Obstetrics and Gynaecology. First edn. Edited by Umeora OUJ, Egbuji C.C, Onyebuchi A.K, P.O E. Abakalik: ST. Benedict Printing and Publishing; 2017: 205-208.
12. Moga M, Arvătescu C, Manea R, Bălan A, Bîgiu N: Retrospective Study Regarding Our Experience In Symptomatic Placenta Praevia. Bulletin of the Transilvania University of Brasov Medical Sciences Series VI 2017, 10(2):55-66.
13. Kwawukume EY, Omo-Aghoja LA: Antepartum Haemorrhage (APH). In: Comprehensive obstetrics in the tropics. Second edn. Edited by Kwawukume E, EE. E, Ekele B.A, KA D. Accra-North Ghana: Assemblies of God Literature Centre Ltd; 2015: 184-197.
14. Thera T, Teguete I, Kouma A: Maternal and Perinatal Outcome of Placenta Previa: 10 Years Analysis in the District of Bamako. of 2017, 4:2
15. Onoh RC, Eze JN, Chijioke O. Risk factors and obstetric outcomes of placenta previa in Nigeria: A five-year review. Obstetrics & Gynecology International Journal, 2020;8(3):132-138.
16. Bowman ZS, Eller AG, Bardsley TR, Greene T, Varner MW, Silver RM: Risk factors for placenta accreta: a large prospective cohort. American journal of perinatology 2014, 31(09):799-804.
17. Badr DA, Al Hassan J, Wehbe GS, Ramadan MK: Uterine body placenta accreta spectrum: A detailed literature review. Placenta 2020, 95:44-52.
18. Ezenwaez MN, Nweze SO, Odugu BU, Onah LN, Mba SG, Ortuanya KE, et al. Placenta Percreta Causing Uterine Rupture in an Unscarred Uterus that Harbored Twin Gestation: A Case Report. J Clin Obstet Gynecol Infertil. 2023; 7(2): 1059
19. Enebe JT, Ofor IJ, Okafor II. Placenta percreta causing spontaneous uterine rupture and intrauterine fetal death in an unscared uterus: A case report. Int J Surg Case Rep. 2019; 65:65-68. doi: 10.1016/j.ijscr.2019.10.039. Epub 2019 Nov 1. PMID: 31689631; PMCID: PMC6838971.
20. Erez O, Novack L, Kleitman V, Erez-Weiss I, Weisel RB, Dukler D, Mazor M: 517: Preterm delivery due to placenta previa is an independent risk factor for preterm birth in subsequent pregnancy. Am J Obstet Gynecol. 2011, 204:206. 10.1016/j.ajog.2010.10.536
21. Fan D, Rao J, Lin D, et al.: Anesthetic management in caesarean delivery of women with placenta previa: a retrospective cohort study. BMC Anesthesiol. 2021, 21:247. 10.1186/s12871-021-01472-w
22. Chattopadhyay S, Majumder S, Patra KK, Kamal AHM: Perinatal mortality of placenta previa: a 1-year retrospective study. Int J Reprod Contracept Obstet Gynecol. 2019, 8:31-4. 10.18203/2320-
23. Nnagbo JE, Eze MI, Ezugworie JO, Ugwu GO, Iloghalu EI, Ezenkwele EP *et al.* Prevalence, outcomes, and predictorsof antepartum hemorrhage due to placenta previa in Nigeria. Int J MedHealth Dev 2022; 27:371-8.
24. Ezechi OC, Kalu BK, Nwokoro CA, Njokanma FO, Loto OM, Okeke GC: Placenta praevia: a study of risk factors, maternal and fetal outcome. *Tropical Journal of Obstetrics and Gynaecology* 2004, 21 (2):131 -134
25. Ayodeji OF, Oladoyin VO, Oloyede OA: Assessment of the Maternal Morbidity Profiles Associated with Placenta Praevia Occurring in Pregnancy With Previous Uterine Scar in a South Western Nigerian Government Hospital. *Tropical Journal of Obstetrics and Gynaecology* 2020, 37(2):243-251.
26. Odelola O, Akadri A, Ogunsowo K: Placenta Praevia: A Retrospective Review of Experience at Olabisi Onabanjo University Teaching Hospital, Sagamu. *West African Journal of Medicine* 2019, 36(3):217-221
27. Wekere,Felix.(2022).Placenta Praevia in a Tertiary Hospital in Southern Nigeia ; A SIX-year Review of Prevalence, Trend, and Risk Factors. International Journal of Medical

Science And Clinical Research Studies. 02.10.47191/ijmscrc/v2-i5-09.
28. Chinedum NE, Chukwudi OR, Chinedum NG: Placenta Praevia: Diagnosis and Management outcomes in a Medical Centre, South East Nigeria. *JMSCR* 2018, 6(12):413-419.
29. Omokanye L, Olatinwo A, Salaudeen A, Ajiboye A, Durowade K: A 5-year review of pattern of placenta previa in Ilorin, Nigeria. *International Journal of Health Sciences* 2017, 11 (2):35.
30. Memon E, Ashfaq S, Naqvi KZ, Sultan S, Aziz S, Irfan SM: Maternal Outcome in Morbidly Adherent Placenta in Obstetrics Patients. *Journal of The Society of Obstetricians and Gynaecologists of Pakistan* 2017, 7(2):85-88.
31. Latif L, Iqbal UJ, Aftab MU: Associated risk factors of placenta previa matched case control study. *Pakistan Journal of Medical and Health Sciences*2015, 9(4):1344-1346
32. Senkoro EE, Mwanamsangu AH, Chuwa FS, Msuya SE, Mnali OP, Brown BG, Mahande MJ: Frequency, risk factors, and adverse fetomaternal outcomes of placenta previa in Northern Tanzania. *Journal of pregnancy* 2017, 2017.
33. Halimi S: Association Of Placenta Previa With Multiparity And Previous Cesarean Section. *JPMI: Journal of Postgraduate Medical Institute* 2011, 25(2).
34. Anzaku A, Musa J: Placenta praevia: incidence, risk factors, maternal and fetal outcomes in a Nigerian teaching hospital. *Jos Journal of Medicine* 2012, 6(1):42-46.

How to cite this article: Livinus Nnanyelugo Onah, Malachy Nwaeze Ezenwaeze, Kelvin Emeka Ortuanya. Placenta praevia: a five-year review of prevalence, trend and risk factors in a Tertiary Hospital, Enugu, Nigeria. *International Journal of Research and Review*. 2025; 12(3): 7-14. DOI: *https://doi.org/10.52403/ijrr.20250302*

******