

A Review of Caesarean Delivery at the Kogi State Specialist Hospital, Lokoja, Nigeria

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Abstract

Background: Caesarean delivery rate is increasing globally including in Nigeria. Caesarean delivery is a life-saving surgery for both mother and child. **Objective:** The aim of the study was to assess the caesarean delivery rate at the Kogi State Specialist Hospital, Lokoja, Nigeria over a one-year period. **Methods:** This was a prospective assessment of the demographic characteristics of patients, indications, types, rates and outcomes of Caesarean delivery in Kogi State Specialist Hospital, Lokoja, Nigeria from December 15, 2020 to December 14, 2021. Data collected were analyzed using SPSS version 20.0 statistical package (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). The categorical data were displayed using tables and charts. **Results:** There was a total of 491 deliveries, out of which were 113 Caesarean deliveries and 378 spontaneous vaginal deliveries making the Caesarean delivery rate in Kogi State Specialist Hospital, Lokoja, Nigeria 23.0%. There were no instrumental deliveries during the study period. The commonest indication for Caesarean section was obstructed labour in 31% of cases. There was no maternal mortality. There were three early neonatal deaths due to severe birth asphyxia. **Conclusion:** The rate of Caesarean delivery in this study was 23.0% and obstructed labour was the leading indication in 31% of cases. The rate of Caesarean delivery in this study is high, albeit the overall outcome was good for both mother and child. Caesarean delivery, therefore, remains one of the means for reducing maternal and perinatal morbidity and mortality in Nigeria.

Keywords

Caesarean Delivery, Indications, Maternal, Morbidity, Mortality, Outcomes, Nigeria, Perinatal

1. Introduction

Caesarean delivery (CD) also known as Caesarean section is a surgical procedure

by which one or more babies are delivered through an incision in the mother's abdomen, often performed because vaginal delivery would put the baby and/or mother at risk [1]. The World Health Organization recommends a Caesarean delivery rate of 10% - 15% [1], however, in recent reports there have been concerns about the rising rates of caesarean delivery from as low as 2% in Africa to as high as 50% - 60% in Dominican Republic and Latin America [2] [3]. Caesarean delivery rate is on the increase due to varying reasons ranging from the patient, institutional, care provider and societal factors [1]. Every effort should be made to provide Caesarean delivery to women when indicated rather than striving to achieve a specific rate [4].

The prevalence of CD in Nigeria of 2.1% at the national level is low, indicating unmet needs and inequitable access [5]. This low prevalence may be due to rural-urban, regional and socio-economic differences suggesting inequitable access to obstetric surgery. Intervention efforts need to prioritise women living in rural areas [5]. In Nigeria, the case of CD is made worse by a combination of the cultural perception that CD represents a reproductive failure and its high cost relative to vaginal delivery [4].

Factors associated with an increased rate of CD were urban residence, maternal age greater than 35 years, fetal macrosomia, multiple pregnancies, maternal obesity, and health insurance coverage [5]. However, the low prevalence of CD may be due to lack of facility and expertise, low acceptance of CD among women in Nigeria, fear of death, concern about complications, high cost, low socio-economic status, lack of health insurance coverage and low antenatal care [6]. There is a global rise of CD in Italy at 35%, USA at 30% and Europe at 15%. In Nigeria, CD rate varies from one region to the other but generally ranges between 9.9% - 35.5% as reported by different authors. A report of 25.7% in Enugu, 9.9% in Sokoto, 18.5% in Nnewi, 18.5% in Mina, 16.4% Abakaliki, 35.5% in Osogbo and 18.3% in Ilorin [6]-[11].

Globally, CD rate ranges between 6-27.2% and rises at an average of 4.4% per year [12]. The lowest rates were found in Africa, 7.3%, followed by Asia, 19.2%, Europe 25%, Oceania 31.1% and North America 32.3% with Latin America and Caribbean having the highest rate at 40.5% [12] [13]. The global rising of CD rate may not be far from improved safety from use of antibiotics, blood transfusion services and improved anaesthetic techniques.

Furthermore, an extremely low CD rate has been reported among the poorest women [14] [15]. The severe underuse of CD especially for multiple and preterm births among socio-economically disadvantaged women emphasises the insufficient access to health care in Nigeria.

CD is indicated for obstructed labour, pre-eclampsia, antepartum haemorrhage and intrapartum fetal distress. Other indications for CD are breech presentation, transverse lie, cord prolapse, placenta preavia and abruption with life fetus. However, it comes with a number of complications such as wound infections, haemorrhage, urinary tract and bowel injuries, deep venous thrombosis,

pulmonary embolism, wound dehiscence, fetal and neonatal birth risks. Other complications include maternal mortality, abnormal placentation in subsequent pregnancy, sub-infertility, uterine rupture in subsequent pregnancy and intestinal obstruction secondary to adhesion [4] [5] [6].

When medically indicated, CD has the potential for reducing maternal and neonatal morbidity and mortality. Whenever there is justification for keeping CD rate as low as possible, there is also a critical need for increased provision and better utilisation of this life-saving procedure in the developing world including Nigeria, and hence there is a need to address geographical, religious and socio-economic factors associated with the provision of CD in Nigeria. The aim of the study is to assess the rate of CD in KSSH, Lokoja, Nigeria.

2. Methods

The study was a prospective assessment of the demographic characteristics of patients, indications, types, rate and outcomes of all the Caesarean deliveries performed between December 15, 2020 and December 14, 2021 in Kogi State Specialist Hospital, Lokoja, Kogi State, Nigeria. All patients who had CD in the hospital during the study period were recruited for the study. Institutional ethical approval and informed consents from the patients were obtained for the study. Pro-forma forms were used to collect data from the consecutive patient who had CD in the hospital. The data collected were the demographic data including age, parity, booking status, educational status, tribe and religion; indications and outcome of CD for both mother and child including length of hospital stay and complications. The total number of vaginal deliveries in the hospital within the study period was collected from the labour ward medical records. The data were stored in the excel sheet and were analysed using SPSS window 20.0 statistical package (IBM Corp. Released 2011. IBM statistics for windows, version 20.0 Armonk, NY: IBM Corp). The categorical data were displayed using tables and charts.

3. Results

During the study period, a total of 491 deliveries were recorded, out of which, 113 had CD giving a CD rate of 23%. Out of the 113 CD, 36/113 (31.8%) were primigravida and 77/113 (68.1%) were primipara and above. The socio-demographic characteristics of the patients are shown in **Table 1**.

The socio-demographic characteristics of the patients showed that majority were between 26 - 30 years of age which accounted for 44.4%, followed by those between 31 - 35 years of age that accounted for 24.8%. One patient was 16 years of age accounted for 0.8% and she had an elective CD due to flourished genital wart.

Igala tribe formed the majority of those that had CD which accounted for 37.1%, followed by Yoruba 29/113 (25.6%). Ogori and Gbagi were the least accounted for 1/113 (0.8%) each. The majority of the patients were booked 104/113 (92.0%) while unbooked patients were 9/113 (8.0%). The majority of the patients had

Table 1. Socio-demographic characteristics of the patients.

Characteristic	Frequency	Percentage
Age (years)		
15 - 25	12	10.5
26 - 35	78	69.0
36 - 45	23	20.3
Tribe		
Igala	42	37.1
Yoruba	29	25.6
Ebira	20	17.7
Hausa	5	4.4
Others	15	12.8
Religion		
Christian	73	64.6
Islam	40	35.6
Parity		
Para 1	38	36.6
Para 2	33	29.2
Para 3	19	16.8
Para 4	17	15.0
Para >5	6	5.3
Educational status		
BSC	25	22.1
HND	23	20.3
NCE	23	20.3
WAEC	21	18.5
ND	15	13.3
No formal education	4	3.5
Occupational status		
Trader	41	36.3
House wife	26	23.0
Applicants	20	17.7
Civil servant	6	8.8
Student	9	7.9
Teacher	6	5.3
Politician	1	0.9
Booking status		
Booked	104	92.0
Unbooked	9	8.0

formal education 109/113 (96.0%) while 4/113 (4.0%) did not. Most of the patients 112/113 (99.1%) were married.

Emergency CD was performed for 69/113 (61.1%) while 44/113 (38.9%) had elective CD. The indications for the CD are shown in **Figure 1**.

The commonest indication for CD in this one-year study is obstructed labour which accounted for 35/113 (31.0%), followed by 2 previous CD 23/113 (20.4%). Primary infertility in an elderly primigravida and preterm labour accounted for 1/113 (0.8%) each.

The majority of the patients 108/113 (95.6%) had pfannestiel incision while 5/113 (4.4%) had midline subumblical incision (**Figure 2**).

The majority of the patients spent 5 days in the hospital, 97 (85.8%) while 8 (7.1%) stayed 8 days. The remaining 8 spent more than 8 days (**Figure 3**). The estimated

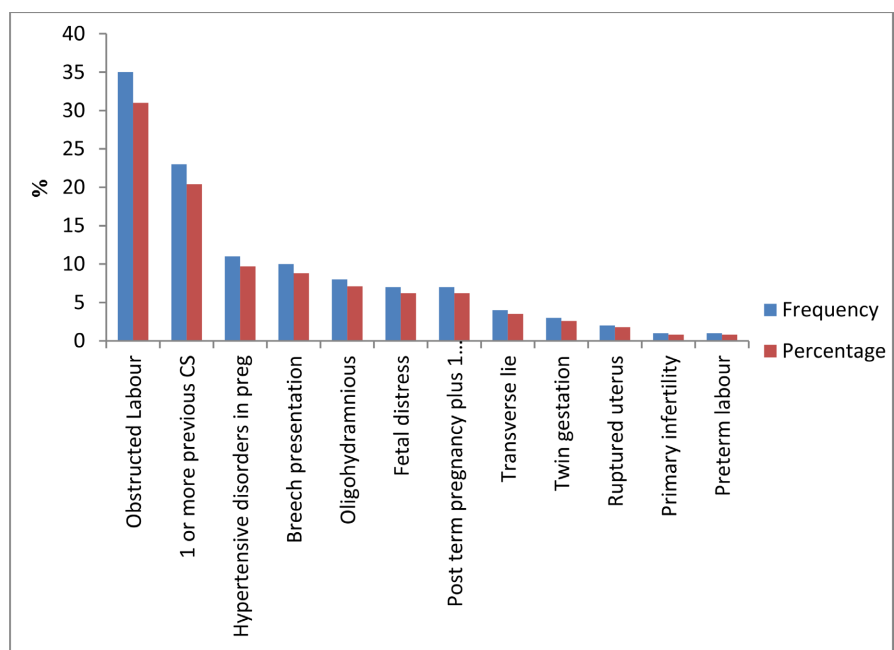


Figure 1. Indications for the CD

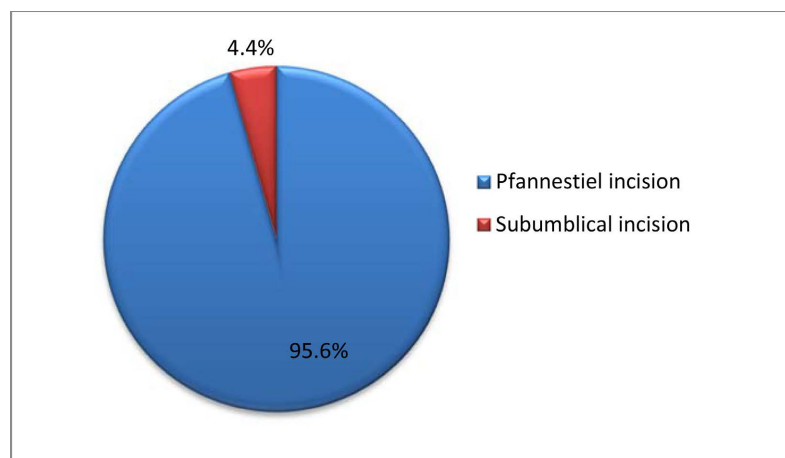


Figure 2. Types of incision.

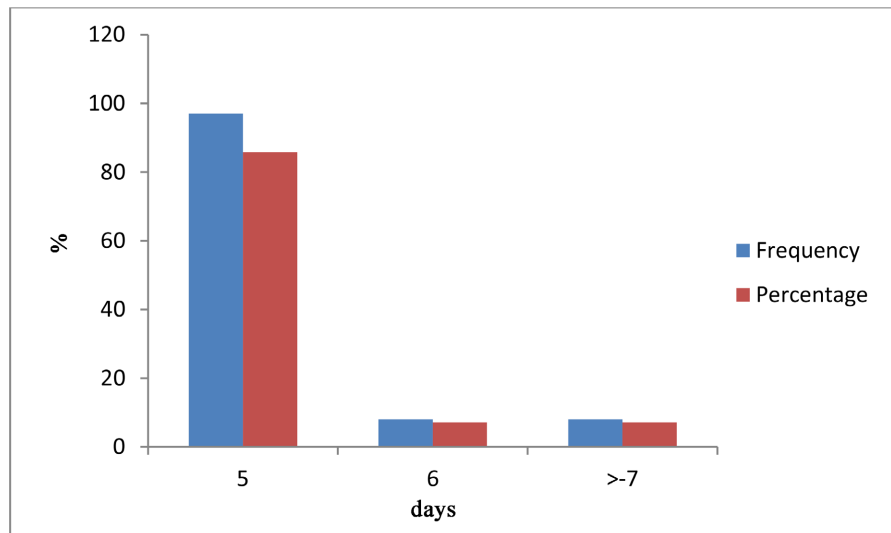


Figure 3. Duration of Hospital stay.

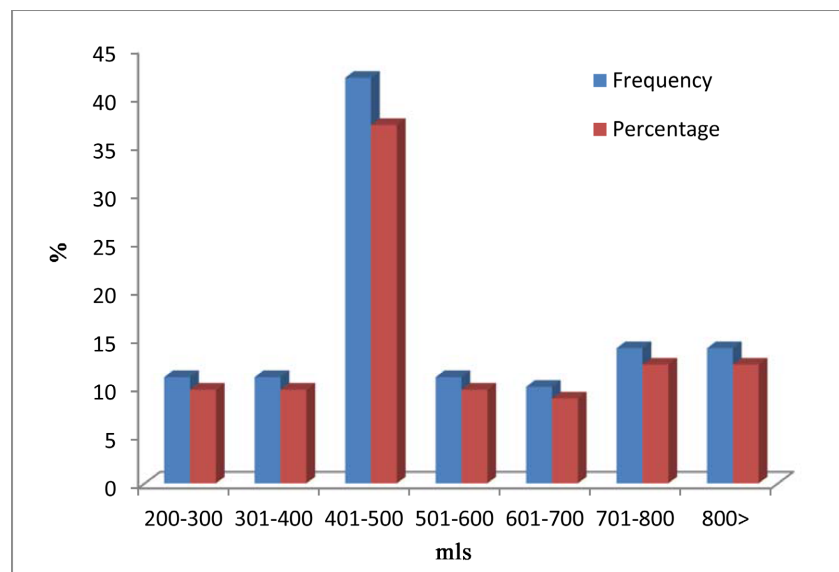


Figure 4. Estimated blood loss (mls).

blood loss (EBL) shows that the majority of the patients EBL was between 401 - 500 mls, 42/113 (37.1%), followed by 601 - 700 ml 14/113 (12.8%) while 11/113 (9.7%) lost between 200 - 300 mls (**Figure 4**).

All the patients had spinal anaesthesia except one that had ruptured uterus from gunshot injury to the abdomen that had general anaesthesia.

The complications of CD observed from this study were minimal and there were postpartum haemorrhage that required blood transfusion was 3/113 (2.7%) while 3 patients had wound sepsis (2.7%) and 4 early neonatal deaths from foetal distress (3.6%). No case of maternal mortality was recorded.

4. Discussion

In the one-year study period, the CD rate in Kogi Specialist Hospital, Lokoja,

Nigeria was 23%. The commonest indication for the CD was obstructed labour in 31.0% of cases. The CD rate of 23% is higher than the ideal CD rate of 10% - 15% of the WHO, but is lower than the rising rate of 50% - 60% in Dominican Republic and Latin America [13]. There is a global rise of CD rate with Italy reporting 35%, USA 30% and Europe 15% [7]. The CD rate of 23% is within the range of 9.9% - 35% reported from other institutions in Nigeria [5]-[10]. However, an extremely low CD rate of 0.4% has been reported among the poorest women [5] [14] [15] and this may be an indicator of poor Obstetric care especially in resource-poor developing world. This fact is reflected in the CD rate for Africa at 7.3%, Asia at 19.2%, Europe at 25% and Latin America and Caribbean having the highest rate of 40.5%. [4] [5].

In this study, obstructed labour was the commonest indication for the CD in 31% of cases. This tallies with the analysis of institutional audit reports which also put obstructed labour as the commonest indication for CD in 31% of cases [15]. This is followed by previous CD in 20.4% and breech presentation in 8.8% of cases.

Majority of the patients were between 26 - 35 years of age which accounted for 69.5%, this is not surprising as they were educated and is the common trend twenty first century, followed by 36 - 45 years of age which accounted for 20.3%. One patient was a teenager, 16 years and she had CD because of flourished genital warts.

The majority of the patients were Igalas which accounted for 37.1% of cases, followed by the Yorubas 25.6% and Ebira 17.7%. These findings are in keeping with the fact that the Igalas forms the majority of the population of the state, followed by the Yoruba and lastly the Ebira.

Educated women formed the majority of the patients 48/113 (42.4%) and 6/113 (5.3%) did not have formal education. This agreed with CD rate of 0.4% among non-educated and poorest women [5], an indicator of poor Obstetric care among the poor. The educated women are more empowered and have more access to standard obstetrics care compared to non-educated and less empowered group.

The majority of the women were booked 104/113 (92%) while 9/113 (8.0%) were unbooked. This has clearly shown that CD rate may not necessarily depend on the antenatal care of the patients.

Most of the patients 112/113 (99.1%) had spinal anaesthesia while 1/113 (0.9%) had general anaesthesia. She was a Fulani, para4 lady with four living children. She had an accidental gunshot injury to the abdomen and the gravid uterus. It was an intrauterine fetal death. She had a subtotal abdominal hysterectomy and made a good recovery. The majority of the patients 108/113 (95.6%) had pfannestiel incision while 5/113 (4.4%) had midline sub-umbilical incision. Those that had midline incision were those that had previous midline incision. The wound healing was good and cosmetically accepted by the majority of patients. However, they are often lost to follow-up after discharge.

The majority of the patients spent 5 days in the hospital, 97 (85.8%) and they

were discharged home.

The estimated blood loss (EBL) shows that the majority of the patients' EBL was between 401 - 500 mls, 42/113 (37.1%), followed by 601 - 700 ml 14/113 (12.8%) while 11/113 (9.7%) lost between 200 - 300 mls. The risk of blood transfusion was very low however the gun shot patient was transfused with 4 units of whole blood. There was no case of maternal mortality from the CD performed during the study period. Ten patients had wound sepsis (8.8%) and three early neonatal deaths while two were fresh stillbirth from fetal distress.

In conclusion, CD rate in Kogi State Specialist Hospital, Lokoja was 23% and the commonest indication was obstructed labour in 31% of cases. There was no maternal mortality from CD during the study period. The perinatal mortality was low. Caesarean delivery, therefore, remains one of the means for reducing maternal and perinatal morbidity and mortality in Nigeria.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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