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A REVIEW OF CAESAREAN SECTIONS ASSOCIATED WITH PERINATAL MORTALITY AT THE UNIVERSITY OF ILORIN TEACHING HOSPITAL, ILORIN, NIGERIA.

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ABSTRACT

Objectives: To determine the perinatal mortality rate among women who delivered through caesarean section in a tertiary health institution in Nigeria and evaluate how various social and obstetric factors influence the perinatal deaths.

Methods: A review of the clinical records of patients who had caesarean section associated with perinatal death over a 5-year period in the University of Ilorin Teaching Hospital was performed. Socio-demographic and obstetrics data were collected from the record of the patients and their infants for analysis.

Results: During the period under review, there were 122 perinatal deaths associated with 923 caesarean sections giving perinatal mortality rate of 132 per 1000 births. Majority (86.1%) of the patients were unbooked and 77.9% had no or low level of education. Nulliparae and grandmultiparae accounted for 88 (72.1%) of the perinatal deaths. Obstructed labour was the indication for caesarean sections in 64.8% of the cases. The stillbirth and early neonatal mortality rates were 80 and 52 per 1000 respectively. Seventy eight per cent of the stillbirths were identified prior to surgery.

Conclusion: Perinatal mortality rate among patients who were delivered through caesarean section is still high in our center and the women were mostly unbooked, in the extremes of parity, and had no or low level of education. Preventive measures should aim at adequate female education and effective and efficient antenatal coverage.

Key Words: Caesarean section, perinatal mortality. *(Accepted 12 May 2008)*

INTRODUCTION

Caesarean section is the commonest major surgical procedure in obstetric practice[1]. It is being performed with increasing frequency all over the world because of improved method of infection control, blood banking and anaesthesia[1]. In a recent review in our center the rate was found to have increased five folds over a ten-year period[2]. Recent efforts have been directed at reducing caesarean section rate and also making it safer for both the mother and the foetus[1,3]. Presently, the perinatal mortality associated with it is by no means low and it is said to be significantly related to the indications, socio-demographic characteristics of the patient, experience of the surgical team and the quality of antenatal care[4-7]. With the increasing importance of this procedure in our practice, it has become imperative to constantly evaluate not only the maternal but also the foetal outcome following caesarean operation. This review of caesarean sections associated with perinatal mortality in the University of Ilorin Teaching Hospital aims at determining the perinatal mortality rate among Women Who delivered through caesarean section and evaluating how various social and obstetric factors influence the perinatal deaths.

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MATERIALS AND METHODS

The study was carried out at the University of IIorin Teaching Hospital between 1st January 2000 and 31st December 2004. The hospital is located in Ilorin, a suburban capital town of Kwara state in North Central Nigeria. It is the only tertiary hospital in the state and a main referral centre for a number of private and government owned primary and secondary health facilities spread over the state. It provides specialist obstetrics care with many of our patients presenting with complications during pregnancy and labour. The records of caesarean sections performed during the period under review were obtained from medical records department, labour ward and theatre records, neonatal unit and mortality registers. Socio-demographic and obstetrics data were collected from the records of patients that had caesarean section associated with perinatal death. These data included age, parity, level of education, booking status, indication for caesarean section, birth weight of infants and type of perinatal death. The data obtained was analyzed using the SPSS package version 9.0. Frequency distributions were generated for all

categorical variables. Means and standard deviation were determined for quantitative variables. The chi-square test was applied for the comparison of proportions and for evaluating association of categorical variables. Statistical significance was said to be achieved where the p-value = 0.05 Actual cause(s) of death in most of the infants could not be determined because relations did not usually give consent to postmortem examination.

RESULTS

During the period under review, 923 caesarean sections were performed of which 849 (91.8 %) were emergencies while 74 (8.2%) were elective. There were 122 perinatal deaths associated with the caesarean sections, given a caesarean section perinatal mortality rate of 132 per 1000 births. The perinatal deaths were made up of 74(60.7%) stillbirths and 48(39.3%) first week neonatal deaths giving stillbirth and early neonatal death rates of 80 and 52 per 1000 births respectively. Fifty eight (78%) of the stillbirths were identified prior to surgery. All the perinatal deaths occurred in emergency caesarean sections. Seventy-nine (64.8%) of the procedures were performed by senior registrars, thirty-seven (30.3%) by registrars while consultants performed six (4.9%). General anaesthesia was used for all operations. One hundred and six (86.9%) patients were anaesthetized by nurse anaesthetists, and the remaining sixteen (13.1%) by physician anaesthetists. One hundred and five (86.1%) of the perinatal deaths occurred in patients that were unbooked in our center, while seventeen (13.9%) occurred in booked patients.

Table 1 shows the age distribution of the women. The age ranged from 16 to 43 years and the mean age was 31.4 ± 3.6 years. One hundred and six (86.9%) of the women were in the age group 20-34 years; twelve (16.2%) were 35 years and above while the remaining four patients were 16 year old who had caesarean section on account of obstructed labour. Table 2 shows the relationship between the level of education of the patients and their booking status. Ninety five patients (77.9%) had no or primary education and 93.7% of them were unbooked. Also, 27 (22.1%) patients had at least secondary education and 59.3% of them were unbooked. The proportion of women with no or low level of education who were unbooked was significantly higher than the proportion of women who are unbooked among those with at least secondary education (p-value< 0.05). Table 3 shows the relationship between the parity of the patients and the indication for the caesarean sections that were associated with perinatal death. Nulliparae and grandmultiparae accounted for 88 (72.1%) of the perinatal deaths. Obstructed labour was the indication for caesarean section in 79(64.8%) patients and majority (73.4%) of these were in the two extremes of parity. Eleven out of the 12 perinatal deaths from antepartum haemorrhage occurred in the high parity group while 9 out of the 12 perinatal deaths from hypertensive disorders of pregnancy occurred in primigravidae. All the 7 (5.7%) perinatal deaths from multiple pregnancy (retained second twin) occurred in the high parity group whereas the eight (6.6%) perinatal deaths from malpresentation were equally shared between both low and high parity groups.

Table 1: **Age distribution of the patients who had caesarean section associated with Perinatal death.**

Age group (Years)	Number	Percentage
< 20	4	3.3
20-24	7	5.7
25-29	46	37.7
30-34	53	43.5
= 35	12	9.8
Total	**122**	**100**

Table 2: **Relationship between Level of Education and Booking Status of the Patients Who Had Caesarean Section Associated With Perinatal Death.**

Level of Education			
Booking status	**No/Primary (%)**	**Secondary/Tertiary (%)**	**Total (%)**
Booked	6 (6.3)	11 (40.7)	17 (13.9)
Unbooked	89 (93.7)	16 (59.3)	105 (86.1)
Total	**95 (100%)**	**27(100)**	**122 (100)**

$X^2 = 34.07$, $df = 2$, p value=0.00
Odds ratio = 10.89 (4.10< OR< 30.53)

Table 3: **Relationship between Parity of the Patients and Indication for Caesarean Sections Associated With Perinatal Death.**

Indication	Parity						
	0	1	2	3	4	5&above	Total (%)
Obstructed labour	41	3	4	6	8	17	79 (64.8)
AP. Haemorrhage	-	-	1	-	5	6	12 (9.8)
Malpresentation	4	-	-	-	2	2	8 (6.6)
Hypertensive Disorder	9	-	-	-	1	2	12 (9.8)
Retained Second Twin	-	-	-	1	2	4	7 (5.7)
Foetal Distress	1	-	-	-	1	2	4 (3.3)
Total (%)	**55(45.1)**	**3(2.5)**	**5(4.1)**	**7(5.7)**	**19(15.6)**	**33(27.0)**	**122(100)**

Key: AP = Antepartum

DISCUSSION

The perinatal mortality rate of 132 per 1000 births found in this review is within the range of 128 to 235 per 1000 births reported from comparable health institutions in Nigeria[4-7]. However, the figure is

disturbingly higher than a rate of 75 per 1000 births reported in a previous study in this centre[8]. We however noted that while stillbirth accounted for 37.2% of the perinatal death in the previous study, it accounted for 65.6% in this study. Most of the still births in our review were diagnosed prior to surgery. Possibly therefore, the liberal use of caesarean delivery in the presence of intrauterine foetal death may be partly responsible for the rise in perinatal mortality associated with caesarean section in our centre. Majority of the women who had caesarean section associated with perinatal death in this review were in the 20-34 years age group. Similar patterns have been reported by other authors.[4,5] This is understandable since this is the period of highest reproductive performance, and complications requiring caesarean section are most likely to be numerically larger. Also, the women were mostly in the two extremes of parity which is similar to reports by other authors[4,5,9,10]. This is not surprising as most complications of pregnancy that either require operative delivery or directly contribute to perinatal morbidity and mortality are most common in the extremes of parity. Perinatal deaths that occurred from obstructed labour, hypertensive disease of pregnancy and multiple gestation were mostly in primigravidae and grandmultiparae in this review. This underscores the need to encourage family planning among the populace to limit the number of children and also close supervision of at risk primigravidae and grandmultiparae during pregnancy and labour. Majority of the perinatal deaths occurred in patients unbooked in our center. Lack of optimal antenatal care has been identified by many workers as one of the major predisposing factors to perinatal death[4,5,9,11]. A significant proportion of the deaths are preventable with qualitative antenatal and intrapartum care. Women who had antenatal care at lower levels of care have often been found to receive suboptimal supervision and referred late in labour[12]. Perinatal mortality among those who had antenatal care at lower level of health facilities was found to be as much as in those who received no antenatal care in a related study[4]. High illiteracy rate among the women could militate against proper understanding of the need to avail themselves of available medical facilities for antenatal care. A study at Ahmadu Bello University Teaching Hospital, Zaria by Harrison et al[13] noted that formal education was the most consistent factor associated with the acceptance of antenatal care, no matter the religious belief, ethnic group, place of residence, age and parity of women. In this series, 77.9% of the mothers had no or low level of education and almost all were unbooked. Therefore, there is a need for policies that will improve female education in line with the millennium developmental goals and continued health education of the general populace on the importance of antenatal care. Obstructed labour was the commonest indication for caesarean sections associated with perinatal death in this series. This is similar to the findings from other studies[4,5,10]. Many of the caesarean operations were performed in the presence of intrauterine foetal death. This did not only contribute to the high caesarean section perinatal mortality rate, but also increases the risk level in subsequent deliveries especially if unsupervised. These patients could have benefited from destructive operations especially in the face of generalized sepsis often associated with obstructed labour and the well known aversion to caesarean delivery in our community. In this study, 95.1% of the surgeries were performed by registrars and only 4.9% by consultants. Adequate supervision of the resident doctors could have resulted in destructive operation being performed in many of the cases by the consultants who have the necessary skills. Probably the residents do not readily invite their consultants to intervene when faced with difficulty. Also, general anaesthesia was used for all the caesarean sections and most of the patients were anaesthetized by nurse anaesthetist. The outcome could have been different in more skilled hands, and by using alternative forms of anaesthesia that do not cause neonatal depression such as regional anaesthesia.

In conclusion, perinatal deaths associated with caesarean section in our center mostly occur among women who are in the extremes of parity, of low level of education and unbooked. Many of the deaths are preventable. Preventive measures should aim at adequate female education and effective, efficient and universal antenatal care coverage. There should be close supervision of the primary and secondary care centers, as well as programme of continuous education for the medical staff to update them on the changing trends in obstetric and perinatal care.

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