Stillbirth Rate in a Teaching Hospital in South-Eastern Nigeria: A Silent Tragedy

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Abstract

Background: Stillbirths often are not seen as a major public health problem, for despite increasing attention and investment on maternal, neonatal, and child health, stillbirths remain invisible. **Aim:** The objective of this study was to determine the stillbirth rate at the Imo State University Teaching Hospital, Orlu. **Subjects and Methods**: Analysis of the case records of stillbirths that occurred in the institution over a 5-year period from 1st July 2005 to 30th June 2010 was made. Data retrieved was analyzed for age of the women, parity, presumptive risk factor for the stillbirth, and booking status of the women. Also, the total births during the period of study were obtained. A *P*-value of <0.05 is said to be significant at confidence level of 95% (95/100). **Results**: There were a total of 1,142 deliveries within the study period, out of which 206 resulted in stillbirths. This gave an institutional stillbirth rate of 18% (180/1000 deliveries). One-hundred and fifty-five 75.2% (155/206) of the stillbirths were macerated stillbirth. The age range of the women was 15-44 years. The modal age was 31 years. The age group of 26-30 years had the highest prevalence rate of stillbirths of 79 (38.3%, 79/206), while age group of more than 40 years contributed the least with four stillbirths 4 (1.9%, 4/206). **Conclusion**: The stillbirth rate at the institution is too high and efforts must be made to reduce it.

Key words: Booking status, Stillbirth, Nigeria

Introduction

Intrauterine fetal death or stillbirth is variously defined in different countries, by gestation or birth weight. The varieties of definitions make comparisons of stillbirth rates difficult. In the United Kingdom (UK), a stillbirth is defined as the delivery of a baby with no signs of life after 24 weeks of pregnancy.[1] However, the World Health Organization (WHO) defines a stillbirth as death of a fetus before the complete expulsion or extraction from its mother at term, weighing at least 1000 g and occurring after 28 completed weeks of gestation or having at least 35 cm body length, which is indicated by the fact that after such a separation, the fetus does not show any evidence of life.[2] Stillbirths often go unrecorded, and are not seen as a major public health problem. Despite increasing attention and investment on maternal, neonatal, and child health, stillbirths remain invisible-not recorded in the Millennium Development Goals, not tracked by the United Nations (UN) or in the Global Burden of Disease metrics. Rates of stillbirth closely mirror the use and quality of maternal healthcare services. They are generally higher in economically poorer communities with poor access and/or low utilization of peri-conceptual and antenatal care (ANC) services, compared with economically well-off populations with good access and high utilization of ANC services.[3,4] In 2008, between 2-4 million stillbirths occurred worldwide.[5] Out of this, 98% occurred in low-income and middle-income countries.[5]

In high-income countries, the rate ranges between 2 and 8.7/1000 deliveries,[6-8] while the rates in Pakistan, Zimbabwe, and Nigeria were between 22.4 and 127/1000.[9-16] Worldwide, 67% of stillbirths occur in rural families, out of which 55% occur in rural sub-Saharan Africa and South Asia, where skilled birth attendance and caesarean sections are much lower than that for urban births.[5]

Most intrapartum stillbirths are associated with obstetric emergencies, whereas antepartum stillbirths are associated with maternal diseases, infections, and fetal growth restriction.[5]

The potential risk factors of stillbirth may be of maternal, fetal, or placental origin. They include pre-eclampsia, intrauterine growth restriction, abruptio placentae, infections, umbilical cord complications, and environmental hazards. Maternal smoking, advanced maternal age, high parity, obesity, fetal distress, and obstructed labor are also widely recognized risk factors for stillbirth.[17-19]

There has not been any study on stillbirth at the institution. Thus, this study will help to know the magnitude of the problem of stillbirth and also serve as a baseline for future studies on stillbirth in this center.

Subjects and Methods

Imo State University Teaching Hospital is a new teaching hospital located in Umuna Orlu, in Orlu Local Government Area of Imo State. It is a major referral center serving the whole of the State and its surrounding states in the South East. The Department of Obstetrics and Gynaecology is made up of five consultants and a variable number of resident doctors and house-officers. Each consultant has a consulting day, clinic day, and theater day. The women are encouraged to book early for antenatal care and are seen every 4 weeks from the time they booked up to 28 weeks' gestations, 2 weekly up to 36 weeks, and then weekly up to delivery. The necessary routine antenatal investigations are carried out and they are placed on hematinics and intermittent preventive therapy (IPT). Uncomplicated deliveries are conducted by midwives and house-officers, while complicated deliveries are conducted by registrars.

After obtaining ethical approval for the conduct of the study, analysis of the case records of stillbirths that took place at the institution over a 5-year period from 1st July 2005 to 30th June 2010 was done. Data retrieved was analyzed for age, parity, booking status of the women, risk factors, type of stillbirth, and total births during the period of study.

Results

There were a total of 1,142 deliveries within the study period, out of which, 206 resulted in stillbirths. This gave an institutional stillbirth rate of 18% (180/1000 deliveries). Unbooked women significantly contributed 173 (84%, 173/206) of the cases ($P<0.001$), while only 33 (16%, 33/206) where booked. The age range of the women was 15-44 years, while the modal age was 31 years. The age group of 26-30 had the highest stillbirth prevalence of 79 (38.3%, 79/206), while age group of more than 40 years contributed the least prevalence of 4 (1.9%, 4/206) [Table 1].

Primigravidae contributed the highest number of 79 (38.3%, 79/206) to the total number of stillbirths, while grandmultiparae contributed the least of 25 (12.1%, 25/206). This was followed by multiparous women who contributed 76 (36.9%, 76/206)

[Table 1]. One-hundred and fifty-five (75.2%, 155/206) of the stillbirths were macerated [Table 2].

Table 3 shows that in 136 (66.0%, 136/206) of the stillbirths, there were identified risk factors. Prolonged obstructed labor contributed the majority 62 (45.6%, 62/136) of the risk factors. Preterm premature rupture of membranes (PPROM) and term premature rupture of membranes (PROM) contributed 1 (0.7%, 1/136) each.

Table 1: Age group and booking status distribution of the women that had stillbirth

Age group (yrs)	No (%)	P
≤20	7 (3.4)	
21–25	31 (15.0)	
26–30	79 (38.3)	
31–35	58 (28.2)	
36–40	27 (13.1)	
>40	4 (1.9)	
Total	206 (100)	
Booking Status		
Booked	33 (16)	
Unbooked	173 (84)	
Total	206 (100)	$P<0.001$
Parity		
Primigravidae	79 (38.3)	
Primiparae	26 (12.6)	
Multiparae	76 (36.9)	
Grandmultiparae	25 (12.1)	
Total	206 (100)	

Table 2: Type of stillbirth distribution of the women

	No. (%)
Macerated	155 (72.5)
Fresh	51 (27.5)
Total	206 (100)

Table 3: Presence and identified risk factors of the stillbirths

Risk factors of the stillbirths	No. (%)
Presence of risk factor	
Yes	136 (66.0)
No	70 (34.0)
Total	206 (100)
Identified risk factors	
Prolonged obstructed labor	62 (45.6)
Abruptio placentae	18 (13.2)
Pre-eclampsia/eclampsia	15 (11.0)
Ruptured uterus	12 (8.8)
Preterm delivery	8 (5.9)
Congenital anomaly	7 (5.1)
Cord prolapse	6 (4.4)
Placenta previa	6 (4.4)
PROM/PPROM	2 (1.5)
Total	136 (100)

Discussion

The stillbirth rate in this study was one of the highest ever reported from both developing and developed countries.[6-16] It was about 1.6 to 9.4 folds of other studies reported in Nigeria[11-16] and 24–103 folds of studies reported from the developed countries.[6-8] The possible explanation to this marked disparity between this study result and other results might be the differences in antepartum and intrapartum care in the different settings. While the study population was in a semi-urban area with the teaching hospital being a referral center to peripheral hospitals and many maternity homes manned by untrained traditional birth attendants (TBAs), most of the other studies were carried out in urban settings with better antenatal and intrapartum care. Most of the patients in this study were referred very late to the teaching hospital when fetal salvagability was poor. This was reflected in the fact that majority of the stillbirths 84% occurred in the unbooked patients. This is also similar to findings in Shagamu[14] and Lagos,[16] Nigeria, which showed that majority of the women were unbooked. Being unbooked, these women cannot fully access antenatal care, which includes the detection of at risk women and providing them with specialized care and delivery.

Unlike the study from Lagos,[20] which showed that most stillbirths were fresh, in this study, majority of the stillbirths were macerated. These means that most of the stillbirths had occurred over 24 hours before delivery. These deaths were therefore caused by factors outside labor, which may be related to their unbooked status. These underscore the need for good antenatal care, early detection of the problems, and prompt referral.

There have been different reports on the effect of maternal age on stillbirth rates. Similar to a study in China,[21] this study showed that stillbirth rate was highest in the age range of 21–35 years. However, another study showed that it was higher at the extremes of age.[22] The possible explanation to this finding may be that this is the age group that has the highest fertility rate.

The stillbirth rate was significantly higher ($P<0.05$) among primigravidae and multiparae than primiparae and grandmultiparae. This finding was contrary to a previous study in Nigeria, which did not show stillbirths to be related to parity,[20] and another one in Pakistan, which showed a significantly higher rate of stillbirth among nulliparous and grandmutiparous women.[9] The different populations studied and the methods of selection of the case might have contributed to these differences.

As in previous studies, the risk factors for the stillbirths were known in the majority of cases.[9,20] The major risk factors for the stillbirths, which included prolonged obstructed labor, antepartum hemorrhage, preeclampsia/eclampsia, and ruptured uterus were similar to the findings by other authors.[9,20] Good antenatal and intrapartum care would be able to identify these risk factors and with timely and prompt intervention, the disastrous consequences on the fetus will be averted.

Limitations of the study

The four major limitations to this study was the limited sample size, it being a hospital based study, the retrospective nature of the study, and the lack of post mortem to determine the actual causes of the stillbirths.

Conclusion

The stillbirth rate in the institution is a silent tragedy. To reduce it, efforts should be made to encourage pregnant women to book for antenatal care in order to reduce and detect some of the risk factors. Also when they do occur, efforts should be made to determine the cause of death as the information may help in designing strategies to prevent other stillbirths.

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Announcement