Stillbirths in a Nigerian Tertiary Hospital

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SUMMARY

Objective: To determine the causes and risk factors for stillbirths in a Nigerian Tertiary Hospital

Setting: Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria

Method: A 5-year retrospective study of stillbirths seen in the hospital, between January 1st 2003 and December 31st 2007.

Result: 116 out of 2751 deliveries recorded within the study period were stillbirths, giving an incidence of 42.2 per 1,000 deliveries. Majority of the patients were unbooked (75.9%), nulliparous (34.5%), of low socioeconomic class (70.7%), and belong to the age group 25-29 years (43.1%). The main causes of fetal death include severe pre-eclampsia (24.1%), abruptio placentae (19.0%), and uterine rupture (12.1%). No aetiological factor was identified in 11.2 percent and macerated stillbirth accounted for 55.2 percent. Sixty four deliveries (55.2%) were preterm and 39.7 percent of stillbirths weighed less than 1.5 kilogrammes.

Conclusion: The study showed a high prevalence of stillbirths which was commoner among unbooked women from poor socioeconomic background. Improvement in the socioeconomic status of people, as well as accessing health care services of skilled birth attendants and emergency obstetric services will go a long way in reducing the perinatal mortality rate caused by stillbirths.

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Key words: Stillbirths, Tertiary Hospital, risk factors

INTRODUCTION

Stillbirth which is birth of a fetus without heart beat or movement has continued to attract the attention of the obstetric world. Its definition varies between developing countries and developed countries and even amongst the developed countries. The rate reflects the level of obstetric services and human development.

The WHO defines stillbirth as "fetal death late in pregnancy" deferring the gestational age (GA) when a miscarriage becomes stillbirth to country policy.[1] In Sub-Saharan Africa, including Nigeria, the age of viability remains 28 weeks.

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It is known that out of the 3.9 million stillbirths reported worldwide each year, about 97% occur in the developing countries.[2,3] Evaluation of the causes and frequencies of these stillbirths that occur within the developing countries has been very problematic because most studies are hospital based, whereas a high proportion of births occur outside the hospitals. [4] Only very few community based studies have actually assessed the magnitude of the problem in the remote areas where most of these deaths occur.[5]

In the developing countries, the incidence of stillbirth much like other obstetrics and perinatal indices is about ten fold that of the developed countries and contributes as high as 50% of their perinatal deaths. [6] In some West African countries the incidence is as high as 52.1 to 69.3 per 1000 births[7], while that of Sweden, Canada and USA range from5.8 6.9 per 1000 births.[8.]

In Nigeria, there appears to be a regional variation in the incidence of stillbirths. Onadeko M.O et al[9] reported an incidence of 89 per 1,000 births in Ibadan, western Nigeria, while in Benin, Midwestern Nigeria, stillbirths accounted for 53 of every 1000 births. [10] In Enugu South Eastern part of the country, an incidence of 63 per 1000 births was reported.[11] These high stillbirth rates were associated with unbooked status, advanced maternal age, high parity and a past history of spontaneous abortion and teenage pregnancy.[10-12]

In all geographical areas, sociodemographic factors, including rural residence, low socioeconomic status, lack of education and antenatal care were linked to increased stillbirth rate. [5,13,14] The common causes of stillbirth among the developing countries include difficult labour, birth infections, hypertensive diseases, abruptio placentae and sickle cell disease. [15-17] Most of these causes are preventable through proper antenatal services and emergency obstetric care. However, up to 60% of stillbirths remain unexplained in spite of sophisticated investigations including placental pathological examination.[17]

Distinguishing between antepartum and intrapartum stillbirths carries medical and programmatic importance.[18] While intrapartum stillbirth rate of less than 1 per 1000 is the norm in developed countries, most countries in the Sub Saharan Africa have a comparative 50-fold increase.[6]

This study analyzes stillbirths seen over a period of 5-years in Nnamdi Azikiwe University Teaching Hospital, Nnewi.

The aim is to determine the magnitude of the problem, the causes, the risk factors, and suggest areas of intervention to reduce the incidence of stillbirth. The overall objective is reduction of perinatal mortality in our environment.

Study Design/ Setting

This is a retrospective study to analyze all cases of stillbirth seen in Nnamdi Azikiwe University Teaching Hospital , Nnewi, South East Nigeria over a 5-year period.(Jan 1st 2003 Dec 31st 2007.)

MATERIALS AND METHODS

The case files of all the patients who delivered stillbirths (fetal deaths after 28 completed weeks of gestation) within the study period were retrieved from the Health Records department and analyzed for sociodemographic data, causes of death and the types of stillbirth. The gestational ages at delivery as well as the birth weights of the babies were also recorded. The data was augmented with labour ward records and analyzed with Epi info statistical package, version 2006. Social classification was done using the protocol developed by Olusanya et al[19]

A. Score	Husband Occupation	B. Score	Wife Education
1	Professionals, top civil servants	0	University
2	Middle Level, Bureaucrats, skilled artisans	1	Secondary
3	Unskilled	2	Primary or none

The social class of the woman were determined by the sum of scores A and B.

RESULTS

Out of 2751 deliveries recorded within the period, 116 were for stillbirths giving an incidence of 4.2% or 42.2 per 1000 deliveries. As shown in figure 1, the highest incidence (8.5%) was recorded in 2006 but there was no particular trend over the years. Majority of the patients were Unbooked (75.9%, n=88), Nulliparous (34.5%, n=40), of social class 1V (44.8%, n=52) and belong to the age group of 25-29 years.(43.1%, n=50) as shown in Table 1. The major causes of fetal death were severe pre-eclampsia (24.1%, n=28), abruptio placentae (19.0%, n=22) and uterine rupture (12.1%, n=14) and in 11.2 %(n=13) of cases, no aetiological factor was identified as shown in Table 2. Macerated stillbirth accounted for 55.2 %(n=64) of cases. As shown in figure 2, most patients had preterm deliveries (63.8%,n=64), while 39.7% of the babies weighed less than 1.5kg.(Fig.3)

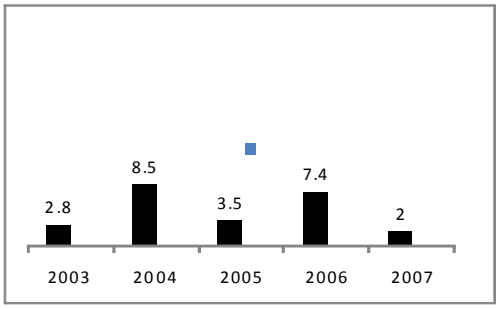

Fig 1: Yearly incidence of stillbirths in percentage

Table 1: Sociodemographic factors

Age (years)	N=116	%
<20	0	0.0
20-24	16	13.8
25-29	50	43.1
30-34	22	19.0
=35	28	24.1
Parity		
0	40	34.5
1	22	19.0
2-4	36	31.0
=5	18	15.5
Social class		
1	0	0.0
2	12	10.3
3	22	19.0
4	52	44.8
5	30	25.9
Booking status		
Unbooked	88	75.9
Booked	28	24.1

Table 2: Causes of stillbirths

Cause of death	No	%
Severe pre eclampsia	28	24.1
Abruption placentae	22	19.0
Uterine rupture	14	12.1
Obstructed labour	10	8.6
Preterm PROM	8	6.9
Severe anemia	8	6.9
Eclampsia	8	6.9
Cord prolapse	4	3.4
unexplained	13	11.2
Thyrotoxicosis	1	0.9
Total	116	100.0

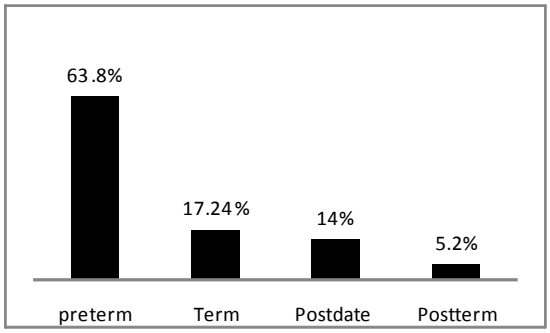

Fig 2: Gestational age at delivery

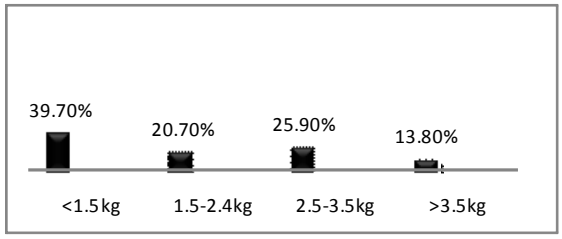

Fig. 3: Birth weights of the stillbirths

DISCUSSION

The stillbirth rate of 42.2 per 1000 births in the present study is less than that reported for Benin, Ibadan and Enugu in Nigeria[9-11] and other Sub-Saharan African countries[7] but certainly much greater than 5.8-6.9 per 1000 reported for high-income countries.[8] The significant contribution of the unbooked patients to the stillbirth rate in this study mirrors findings from previous studies in our environment.[10-12] This is a problem of the developing countries and underscores the great need for our pregnant women to have access to adequate and affordable health care facilities. The usual factors that sustain the "unbooked syndrome" include poverty, lack of education as well as ignorance. It is not surprising therefore that most of our patients (70.7%) were from poor socio-economic background (social classes 1V and V).

In addition to providing health facilities to the majority of our women, efforts should also be made to address the sociocultural, economic and religious factors, and attitude of health workers that may limit the ability of the pregnant women to access these obstetric services, when provided. Most of our patients were nulliparous. This is in contradistinction to the report of Onadeko & Lawoyin[9] and Chigbu et al[11]. This may be related to the very high contribution (31%) of hypertensive diseases to the stillbirth rate in our study. Majority of the patients were at the prime of their reproductive career(24-29 years), when medical disorders that contribute to stillbirths are uncommon. This agrees with the trend observed in Benin City, Nigeria.[10]

The greatest contributor to the high stillbirth rate in this work was severe pre-eclampsia/eclampsia. This vasoconstrictive disease results in decreased blood flow, causing fetal hypoxia and intrauterine fetal growth restriction which lead to stillbirth. There is no known universally accepted measure to prevent this disease. However, early diagnosis, appropriate medical management and early delivery reduce the rate of stillbirth associated with pre-eclampsia/eclampsia. Unbooked status of parturients and nulliparity are known risk factors for pre-eclampsia/eclampsia and the consequent fetal hypoxia and stillbirth. Abruptio placentae which has a high case perinatal mortality is the second commonest cause of stillbirth in this study. Its contribution to stillbirth in this study is more than that reported in Benin.[10] This could be attributed to preeclampsia which is a risk factor for abruptio placentae and the commonest cause of stillbirth in this study. Reducing perinatal mortality from Abruptio placentae requires prompt diagnosis and delivery. Delay in seeking and providing emergency obstetrics services is a common feature in developing countries, hence the high maternal and perinatal mortalities.

Uterine rupture and prolonged labour are avoidaiable significant causes of stillbirth in this study. They contribute 12.1% and 8.6% respectively. Uterine rupture usually occurs in the setting of insisting on vaginal delivery in spite of cephalopelvic disproportion, previous caesarean section and injudicious use of oxytocin. Other risk factors for uterine rupture in our environment include multiparity, low socio economic status and conduct of labour and delivery by unskilled attendants at home and prayer houses.[20,21] Caesarean section which is known to reduce the rate of stillbirths from asphyxia associated with prolonged labour, trauma and infection is not easily acceptable to women in our environment who prefer to deliver in prayer houses expecting miracles and are brought to the hospital in moribund clinical state with intrauterine fetal death.[22,23] The low rate of acceptance of caesarean section is related to poor socioeconomic status and lack of education. No causative factor was associated in 11.2% of stillbirths in this study. This is the proportion of stillbirths (antepartum) probably associated with malaria, internal congenital malformations and intrauterine infections. Women living in malaria endemic areas are known to have high rates of stillbirths.[24] Malaria is also known to be more severe in primigravida and women of low socioeconomic status. Unfortunately, majority of women in our study belong to this category.

Post mortem examination of the stillbirths was not performed in the unknown category. In our environment, consent for postmortem examination is rarely given especially for stillbirths as these deaths are accepted as the "will of God" or sometimes attributed to witchcraft. Postmortem examination could have revealed a few cases of internal congenital anomalies, though most of the women are not of advanced maternal age which is a risk factor to congenital anomalies and metabolic disorders. In rural India where the stillbirth rate of women aged 20-24 was 121/1,000, women above 40 years had a rate of 240/1,000.[18] Reducing the rate of stillbirths remains a great challenge in developing countries. Stillbirth rate reflects the quality of obstetric care, and it is directly proportional to the maternal mortality rate.[25] High stillbirth rates are found in countries with high maternal mortality rate and vice versa. Skilled birth attendance and proper antenatal care are strongly associated with a lower incidence of stillbirths and with decreased maternal mortality as well.[18] Thus increased skilled birth attendants and qualitative antenatal care should reduce the number of stillbirths and maternal deaths and have become the focus of safe motherhood programs and targets of The Millennium Development Goals. Unfortunately, the number of skilled birth attendants is insufficient in developing countries. Some developing countries have resorted to training and retraining of the traditional birth attendants (TBAs) with variable degrees of success. In Nigeria, the use of TBAs in improving obstetric services is controversial and the outcome measures vary with geopolitical regions in Nigeria.

Appropriate emergency obstetrics services appear to be the most critical intervention measure to reducing stillbirth rate in our environment since the commonest causes of stillbirths from this study are obstetric emergencies- severe preeclampsia/eclampsia, ruptured uterus, obstructed labour and its sequalae. Prevention of infection in pregnancy especially malaria in endemic areas is a strategy to reducing the rate of stillbirths especially macerated stillbirth. Though WHO has recommended Intermittent Preventive Treatment for malaria during pregnancy, the compliance is likely to be poor in the

unbooked and lower socioeconomic group where majority of the patients belong. This study is hospital based and may not be a true reflection of stillbirths in our community. Where most live births are not recorded, nobody discusses stillbirths which are regarded as the" will of God". A community survey including home deliveries and births in unorthodox places where 66% of births in Nigeria[26] take place will give the real prevalence of stillbirths.

CONCLUSION

This study shows a high prevalence of stillbirths which is common among unbooked women from poor socioeconomic background. Improvement in the socioeconomic status of people, education, as well as availability of skilled birth attendants and emergency obstetric services will go a long way in reducing the perinatal mortality rate caused by stillbirths.

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