

Antepartum Fetal Death in a Nigerian Teaching Hospital: Aetiology and Risk Factors.

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Abstract

Context: Antepartum fetal death is a significant contributor to perinatal mortality and challenges the adequacy of antenatal surveillance. Identifying the causes and risk factors for death may aid its prevention.

Aim: To determine the causes of antepartum fetal death and identify associated risk factors.

Subjects and Methods: All antepartum fetal deaths, with fetuses weighing 1 kg or more, delivered at Wesley Guild Hospital, Ilesa between January 1996 and December 2000 were the subjects. The controls were all live births delivered immediately before and after every index fetal death. Information on maternal demographic details, past obstetric history and antenatal complications were retrieved from the case notes of both the subjects and the controls for analysis.

Results: The total number of births during the study period was 5,050 with 266 stillbirths. Of the stillbirths, 111 (41.7%) were antepartum out of which 70 (63.1%) weighed 1 kg and above. The main causes of death were antepartum haemorrhage (20%), maternal disease (14.3%) and pre-eclampsia/eclampsia (11.4%). The cause of death was unknown in 38.8% of cases. The main risk factors identified for antepartum death were lack of antenatal care and low birthweight. Maternal age and parity did not seem to be risk factors for antepartum fetal loss.

Conclusion: Maternal disease is still a major cause of antepartum deaths in our society. Improved antenatal care and better surveillance of fetal growth may reduce the current high stillbirth rate in our society.

Key Words: Perinatal Mortality, Stillbirth, Intrauterine Death [Trop J Obstet Gynaecol, 2003, 20: 134-136]

Introduction

Antepartum fetal death is the death of a fetus *in utero* after the stage of viability but before the onset of labour¹. With advances in intra-partum and neonatal care facilities, antepartum deaths have become a major contributor to perinatal mortality in most parts of the world^{2,3}.

The occurrence of antepartum death is a disaster to the family and a great challenge to the professional skill of the obstetrician. Knowledge of the causes and risk factors of this unfortunate problem will help in designing preventive measures to reduce the incidence of this obstetric disaster. Numerous investigators have reviewed the causes of fetal deaths in various obstetric populations^{3,4,5}. Most of the identifiable causes have changed over the years, even in the same centres⁵. It is therefore important for each obstetric unit to determine the main causes of antepartum death in their setting in order to improve the standard of care.

The aim of this study is to determine the causes of antepartum death in singleton pregnancies and to identify the associated risk factors in our population.

Patients and Methods

All stillbirths weighing 1 kg and above, delivered at Wesley Guild Hospital, Ilesa, between January 1996 and December 2000 were the subjects of this study. Their records were identified from the labour ward

admission registers and the case notes were reviewed to obtain information on maternal demographic details, parity, past obstetric and medical history and details of the index pregnancy. All cases of intrapartum deaths and multiple pregnancies were excluded from the study. The controls were singleton live births delivered immediately before and after every index pregnancy.

In view of shortage of perinatal pathologists and lack of facilities for some laboratory tests required for full evaluation of fetal deaths, the clinico-pathological classification of fetal deaths suggested by Baird⁶ was used in this study. Data analysis was carried out with SPSS for Windows version 9 (SPSS Inc., Chicago, Illinois, USA). The χ^2 and Student *t* tests were used for comparisons where appropriate and the level of significance was set at $p < 0.05$.

Results

The total number of births during the study period was 5,050. There were 266 stillbirths out of which 111 (41.7%) were antepartum and 121 (45.5%) intrapartum. The timing of death could not be determined in the remaining 34 (12.8%).

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Of the antepartum deaths 70 (63.1%) are singleton and weighed 1kg and above and are those analysed in this study. The controls were 140 singleton live births weighing 1 kg and above and delivered immediately before and after each index pregnancy.

Table 1
Distribution of the Patients According to Gestational Age at Time of Measurements

Year	Total Births	Still-Births	Perinatal Deaths	P.M.R. per 1000 births
1996	970	50	72	74.23
1997	1075	59	81	75.35
1998	1187	62	92	77.51
1999	889	42	64	71.99
2000	929	53	80	86.11
Total	5050	266	389	77.03

Table 1 shows the summary of perinatal mortality during the study period. The causes of antepartum deaths are shown in Table 2. The cause of death was unknown in nearly two-fifths of cases.

Table 2
Identifiable Causes of Antepartum Fetal Deaths

Cause	Number of Cases	Proportion (%)
Antepartum Haemorrhage		
Abruption	10	14.3
Placenta Previa	2	2.9
Indeterminate	2	2.9
Maternal Diseases		
Malaria	4	5.7
Anaemia	3	4.3
Urinary Tract Infection	2	2.9
Diabetes Mellitus	1	1.4
Pre-Eclampsia/Eclampsia	8	11.4
Congenital Malformations	5	7.1
Fetal Infections	4	5.7
Cord Prolapse	2	2.9
Uncertain	27	38.6
Total	70	100

Table 3 compares the characteristics of pregnancies resulting in stillbirths with those ending in live births. The mean maternal age of those with stillbirths was slightly higher than that of the mothers with live births. There were no significant differences between the two groups with respect to maternal age distribution, parity distribution and

history of previous perinatal loss. There were more unbooked patients among cases (55.7%) than controls (17.1%), a significant difference. Antenatal attendance was poor in the group of patients with stillbirth with only 49.4% having three or more visits compared with 87.9% in the live birth group. The mean birth weight of the stillborn infants was significantly lower than that of the live born babies.

Table 3
Characteristics of Pregnancies Resulting in Antepartum Fetal Deaths and Those Leading to Live Births

Variable	Still Birth N = 70 n (%)	Live-Birth N = 140 n (%)	p
Maternal Age			
<20	3 (4.3)	8 (5.7)	
20 – 29	42 (60.0)	84 (60.0)	
30 – 34	14 (20.0)	29 (20.7)	
≥ 35	11 (15.7)	19 (13.6)	
Mean Age [SD]	27.7 [5.72]	27.3 [5.45]	NS
Parity			
0	26 (37.1)	48 (34.3)	
1 – 4	36 (51.4)	80 (57.1)	NS
≥ 5	8 (11.4)	12 (8.6)	
Previous Perinatal Loss			
Yes	15 (21.4)	29 (20.7)	
No	55 (78.6)	111 (79.3)	NS
Booking Status			
Booked	31 (44.3)	116 (82.9)	
Unbooked	39 (55.7)	24 (17.1)	< 0.05
Baby's Sex			
Male	34 (48.6)	70 (50.0)	
Female	36 (51.4)	70 (50.0)	NS
BirthWeight (kg)			
1 – 1.9	32 (45.7)	1 (0.7)	
2 – 2.4	19 (27.1)	11 (7.9)	
≥ 2.5	19 (27.1)	128 (91.4)	
Mean [SD]	2.0 [0.78]	3.09 [0.49]	< 0.05

Discussion

In this study, nearly 40% of the antepartum deaths had no identifiable aetiological factor. This is similar to the findings of previous authors^{2, 3, 4}. It is however interesting to note that the percentage of unexplained fetal deaths found compared favourably well with the values reported from centres with more sophisticated laboratory facilities, using more complex methods of classification^{4, 7, 8}. Hence, the simple clinico-pathological classification method used in this study will adequately classify most perinatal deaths, and help in patient counselling and

taking decisions on preventive measures. In fact, a recent study on stillbirth evaluation proved conclusively that many of the expensive laboratory tests can be eliminated in the work-up of fetal deaths as they add very little information toward detecting the cause of death⁹.

Abruptio placenta is the commonest single cause of antepartum death in our population. This agrees with the findings of previous authors in other centres situated in different parts of the world^{9,10,11}. It must be noted, however, that maternal medical disorder is responsible for more antepartum deaths in our centre than in other places. Malaria is still responsible for the majority (40%) of fetal deaths from maternal disease. This is probably because the majority of the patients were unbooked and hence might not have been on malarial chemoprophylaxis.

Apart from the factors identified as leading directly to fetal demise, there are some predisposing factors

that set the stage for the final events. The only risk factors for antepartum fetal deaths identifiable in this study were lack of antenatal care and low birth weight. This is similar to the findings of other authors^{2,3}. However, unlike in previously reported studies, age, parity and previous perinatal loss were not identified as risk factors in this population. This analysis showed that many of the antepartum deaths were of low birth weights. This may be due to a high incidence of intrauterine growth retardation among antepartum deaths as shown by Gardosi *et al*¹⁰.

Many antepartum stillbirths remain unexplained. The main risk factors in our centre are lack of antenatal care and low birth weight. To reduce antepartum fetal deaths we suggest the use of better methods for early diagnosis of growth retardation and education of mothers on the benefit of good antenatal care.

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