

## Caesarean Section and Perinatal Mortality in South Western Nigeria

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### Abstract

**Aim:** Caesarean section carries a substantial hazard to the unborn fetus, especially if done as an emergency procedure. In our environment fetal loss following a caesarean delivery is usually attributed to the procedure by patients and relations who do not readily accept caesarean section as a delivery option.

**Method:** A 10 year descriptive study of caesarean section related perinatal mortality in four tertiary hospitals in South western Nigeria.

**Results:** Nineteen thousand one hundred and seventy nine deliveries were conducted in the hospitals during the study period; five thousand one hundred and ninety five (27.1 %) of which were caesarean deliveries. Two hundred and thirty five of the caesarean deliveries were associated with perinatal death (6.9 %). Majority of these deaths were among the unbooked (73.8%), multiparous (69.0 %) patients and emergency caesarean delivery (83.4%). Prolonged/ obstructed labour (45.4%), preeclampsia/eclampsia (18.8%) and fetal distress (11.5%), were the commonest indication for caesarean deliveries. While majority of the perinatal death were still born (60.3%), (39.7%) were early neonatal deaths. The common causes of early neonatal death in these patients were severe birth asphyxia (37.4 %), neonatal sepsis (22.0%) and prematurity (16.4%).

**Conclusion:** The cause of perinatal mortality associated with caesarean delivery in our environment are preventable with public enlightenment, provision of affordable and accessible prenatal and neonatal care, discipline, behavioural and attitudinal change of health workers, and the political will on the part of policy makers to maternal and child health delivery care more effective.

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### Introduction

Caesarean section carries a substantial hazard to the unborn fetus, especially if performed as an emergency procedure and for maternal well being<sup>1</sup>. The perinatal morbidity and mortality associated with it is by no means low and significantly related to the indication, characteristics of the patients, type of anaesthesia, experience of the anaesthetic and the surgical team and the quality of antenatal care<sup>1,2,3</sup>.

In our environment fetal loss following a caesarean delivery is usually attributed to the procedure by patients and relations who do not readily accept caesarean section as a delivery option<sup>4</sup>. This is one of the documented reasons for caesarean aversion in our environment.<sup>4,5</sup>

In this study we reviewed the perinatal mortality associated with caesarean section in four hospitals in the South western Nigeria.

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## Methods

This study was conducted in four tertiary centers in the south western Nigerian cities of Lagos and Ile Ife over a 10 year period (1st January 1997 to December 2006). One of the tertiary center, though located in Osun state provides referral services for Osun, Ondo, Ekiti states and parts of Oyo, Edo, and Kwara states of Nigeria.

All perinatal death associated with caesarean delivery during the study period constituted the study population. Information on perinatal deaths was collected from the labour ward, labour ward theatre, neonatal intensive care units and the morbid anatomy department. The case records of all the cases were retrieved from the medical records department. Data on socio-biological and obstetric parameters were extracted. The data obtained were coded and fed into an IBM compatible PC for analysis using SPSS statistical soft ware.

## Results

Nineteen thousand one hundred and seventy nine deliveries were conducted in the hospitals during the study period; five thousand one hundred and ninety five (27.1 %) of which were caesarean deliveries. Two hundred and thirty five of the caesarean deliveries were associated with perinatal death. Giving a caesarean section related perinatal mortality of 6.9%. Of the 235 cases associated with perinatal deaths, the case note of 229 (97.5%) were available and thus used for this review.

The mean maternal age of the patients was  $26.6 \pm 3.4$  years. While majority of the deaths were among the unbooked patients (73.8%), only 26.2% occurred among the women that received antenatal care in the hospitals. Majority (69.0 %) of these deaths were in the multiparous women. The mean gestational age at delivery was  $38 \pm 3.3$  weeks with majority (76.4 %) delivering at a term. One hundred and ninety one (83.4%) of the perinatal deaths occurred in patients that were delivered by emergency caesarean section.

The indications for caesarean section among these patients were prolonged/ obstructed labour (45.4%), preeclampsia/eclampsia (18.8%), fetal distress (11.5%), abruptio placenta (6.1%), ruptured uteri (5.2%), cord prolapse (4.4%), placenta preavia (2.6%) and retained second twin (1.8%).

One hundred and thirty eight (60.3%) babies were still-born, while the remaining ninety one (39.7%) were live born but died within seven days of delivery. Of the 138 stillbirths 18.8%(26) were macerated; all were in

unbooked cases except in three patients who was originally planned for a repeat caesarean section but defaulted only to present with prolonged obstructed labour. Unbooked patients accounted for 85.7% of the 112 fresh stillbirths and 58.2% of the early neonatal deaths. Fourteen (15.4%) of the early neonatal death occurred within 24hours of birth, Thirty one (34.1%) after 24hours but within 48hours, Twenty seven (29.7%) after 48hours but within 72hours and the remaining nineteen (20.9%) early neonatal deaths occurred after 72hours.

The causes of the early neonatal deaths among these patients were severe birth asphyxia (37.4 %), neonatal sepsis (22.0%), prematurity (16.4%), meconium aspiration (8.8%), recurrent apnoeic attacks (6.6%), severe congenital abnormality (4.4%), narcotizing enterocolitis (2.2%) and HIV embryopathy (2.2%).

## Discussion

The caesarean perinatal mortality rate of 6.9 % in this study; though quite high when compared to mortality rates in similar centres in the developed countries; it is however less than 12.5% and 16.3% reported from Ibadan and Kaduna Nigeria.<sup>1, 2,3</sup> The high perinatal mortality in our environment compared to similar centers abroad is related to the condition of the fetuses and the mothers at the time of presentation.<sup>1,3</sup> Most of our patients presents late after labouring elsewhere with complications and often fetal death. Even when the babies are born alive the resulting injury prolonged labour and maternal illness have incapacitated them making their survival almost impossible.<sup>5</sup> Equally, these centers being referral hospitals, high risk patients are pooled here with the attendant poor perinatal outcome of such cases. The high proportion of emergency caesarean and unbooked cases among the cases reviewed in this study supports the above theory. Important contributors to this high perinatal mortality were the associated uterine infections, anaemia, dehydration in cases of prolonged /obstructed labour and failed attempts at management by unskilled and untrained personnel at some of the referral centres.<sup>1,5,6</sup> Poverty, financial constraints, distance and aversion to caesarean delivery were some other factors that are associated with the high perinatal mortality in our environment since they prevent patients from seeking care early and in appropriate facilities.<sup>5</sup> To reduce caesarean section related perinatal mortality in our environment, health education in the media, provision of affordable and accessible prenatal care and co-ordinated referral and transport system should be instituted.

The findings of prolonged labour and obstructed labour being the commonest indication for caesarean

section in these patients is similar to earlier reports.<sup>1,2,3</sup> In prolonged obstructed labour the associated fetal distress, asphyxia, meconium aspiration, ruptured uterus and chorioamnionitis affects the fetus which invariably succumbs before, during or after surgery.<sup>1,2</sup> The deaths in preeclampsia/eclampsia may also be related to asphyxia, prematurity and effects of drugs used in resuscitating the mother.<sup>5,6,7</sup>

Noteworthy in this study is the high stillbirth rate. The unwillingness of most of our patients to present early, late referrals, transportation difficulties and delays within the hospital may have contributed to this high rate.<sup>1,5,6</sup>

In most centers in the developing countries our centers inclusive, neonatal backups are either inadequate or non existent, or inadequately staffed; thus the high early neonatal death rate is not unexpected considering the severe morbidity in these live births. Whatever the reason, objective analysis has shown that such problems are man made and preventable.<sup>5,6</sup> These problems are essentially due to corruption, mismanagement of limited funds and poor work attitude of staffs.<sup>5,6</sup>

In conclusion, the causes of perinatal mortality associated with caesarean delivery are essentially preventable; with public enlightenment, affordable and accessible prenatal and neonatal care, discipline, behavioural and attitudinal change of health workers, and the political will on the part of policy makers to make maternal and child health care more effective, it could be reduced to the barest minimum.<sup>2,5,6,8</sup>

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