
Anaesthesia And Outcome For Caesarean Delivery In The Parturient With Severe Co-Morbidity

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Abstract

OBJECTIVE

An observational retrospective review of parturient with severe co-morbidity that presented for anaesthesia for caesarean section in the University of Nigeria Teaching Hospital (UNTH), Enugu, Nigeria over a five year span was carried out to determine fetomaternal outcome.

METHODS

The hospital records of parturient with severe

co-morbidity presenting for caesarean delivery from, January 2001 to December 2005 were extracted and reviewed.

RESULTS

A total of 3,357 deliveries took place over the 5 year span.

There were 270 patients of ASA 3 and above classification. General anesthesia was administered to 202 patients, while 68 delivered under regional anesthesia. There was a perinatal mortality of 241/1000 births and one anaesthetic death.

CONCLUSION

The late presentation of women with co-morbidity that present for caesarean delivery coupled with severity of illness resulted in a rather high fetomaternal morbidity/mortality in this study. Early referral of at risk patients may help reduce these high rates.

INTRODUCTION

Conditions that make for high risk caesarean delivery in pregnant women have over the years proved a challenge for the obstetrician and obstetric anaesthetist.

This is because the variable presentation and wide spectrum of obstetric related complications often necessitate anesthetic intervention in an acute setting ¹. Besides, high risk patients may be referred for anaesthetic assessment at any time during the antenatal or peripartum periods. Late timing of referrals can lead to inadequate investigations and treatment before delivery ¹. However, since the early nineteen eighties, anaesthesia has become safer with a 5 fold reduction in maternal mortality ². And underlies the efforts by providers of anaesthesia in reducing the rates. A high risk pregnancy for the anaesthetist can involve the woman with a pre-existing severe medical condition that may or may not be a constant threat to life. However, it can be argued that identifying patients who are at risk of developing serious morbidity or mortality is difficult due to altered physiological parameters associated with pregnancy and marked variability in the timing and presentation of morbid states in pregnant patients ¹.

Conditions that are only associated with pregnancy like preeclampsia/eclampsia and rupture of the gravid uterus are widely recognized as causing major feto-maternal morbidity and mortality in the developing world ³⁴.

In the management of these patients anesthetic assessment plays a pivotal role in their successful management ⁵⁶. This has been documented in successive reports of the Confidential Enquires into Maternal Deaths (CEMD) in the United Kingdom ⁵. An important aspect of their management is an infrastructure that allows for referral of at risk patients to tertiary care centres with facilities for managing such cases ⁷.

This study was undertaken to determine the pattern and the management of high risk anaesthetic cases presenting for caesarean section and the feto-maternal outcome.

METHODS

The hospital records of 270 women considered high risk patients for anaesthesia from January 2001 to December 2005 were retrospectively reviewed. Patients with the American Society of Anesthesiologists (ASA) classification of 3 and above were considered high risk anaesthesia cases. The following data were collected; patients demographics, obstetric and anaesthetic records, including maternal and

fetal outcome. The patients included in this study were those whose physical status was considered a risk factor for anaesthesia that might result in maternal mortality/morbidity rather than fetal mishap. This implies that safeguarding the mother's well being was paramount. The ASA grading was done during the pre-anaesthetic visit by either the senior house officer or registrar on duty.

RESULTS

A total of 3,357 deliveries took place at the University of Nigeria Teaching Hospital (UNTH) Enugu, Nigeria, over the 5 year span. There were 3,303 live births (92.4%) and 883 caesarean deliveries (891 caesarean births).

There were 270 patients of ASA 3 and above classification, considered high risk patients for caesarean delivery under anaesthesia. They delivered a total of 277 babies. There were 7 twin deliveries with 220 live births. Two hundred and four parturient (75.5%) presented with pre-eclampsia/eclampsia and antepartum hemorrhage. See table one. There were 189 emergency caesarean deliveries and 81 elective ones. General anaesthesia was administered to 202 patients, while 63 delivered under spinal anaesthesia and 5 under epidural block. These high risk patients accounted for 52 stillbirths giving a stillbirth rate of 58/1000 deliveries. There were 15 neonatal deaths giving a perinatal mortality of 241/1000 births.

There was one anaesthetic death during caesarean section. However six other mothers from this group died before discharge from the hospital making for a total of seven maternal deaths in this group making for a case fatality rate of 2.5%.

Figure 1

Table 1: INDICATION FOR CAESAREAN SECTION (n=270)

Diagnosis	No of patients	Still birth	Anesthetic death	Spinal anaesthesia	Epidural anaesthesia	General anaesthesia
Ruptured uterus	30	28	1	2	-	28
Pre eclampsia/eclampsia	111	10	2	33	5	73
Antepartum hemorrhage	93	17	-	13	-	80
Diabetes mellitus	21	-	-	8	-	13
Hypertension	10	1	-	6	-	4
Pituitary adenoma	1	-	1	-	1	-
Carcinoma of breast	1	-	-	-	-	1
Seizure in pregnancy	1	-	-	-	-	1
Mitral valve replacement	1	-	-	-	-	1

Figure 2

Table 2: PARITY OF PARTURIENT PRESENTING FOR ANAESTHESIA (n=270)

PARITY	NUMBER %
Nulliparous	105
1	51
2	41
3	32
4	25
5	15
6	5
7	3
8	2

Figure 3

Table 3

AGE RANGE (years)	Number
<_19	4
20-25	27
26-30	86
31-35	79
36-40	63
>_41	12

DISCUSSION

Of the 883 caesarean deliveries in our centre during the study period, 270 (30.5%) were in high risk anaesthetic patients. Most of the patients with con-comittant medical diseases had mainly diabetes mellitus and hypertension (10.5%). This is because, unlike in countries with advanced health care systems, most patients with conditions like congenital heart and sickle cell diseases 8 , don't live long enough to marry and bear children.

However, a patient who had heart valve replacement surgery in our centre delivered successfully under general anaesthesia during the study period 9 .

Pre-eclampsia/eclampsia and antepartum haemorrhage accounted for 75.5% of the parturient considered high risk anaesthetic patients. Both are recognized as significant causes of maternal mortality even in the advanced world 10 .

Ruptured uterus in 30 patients accounted for 49% (25) of the stillbirths. This was mainly because the patients presented late to the hospital and may have attempted a vaginal delivery after caesarean section in a non – tertiary care centre even at the risk of their lives 11 . However, there was no anesthetic death in this group of patients due to prompt intervention, even though most of them were ASA 4E patients.

However, there was a near 100% fetal wastage. Researchers seek to know why women in our environment place on a higher premium on “proving that they are real women” by delivering vaginally after a previous section, at the risk of loosing both their lives and that of their babies. This goes to show the extent to which crude and obnoxious societal norms have contributed to the loss of lives.

The 52 stillbirths in these parturient re-emphasizes the fact that early booking of these patients at a tertiary care centre with infrastructure for early anesthetic assessment for both labour and delivery is important.

This is more so since about two-thirds of all stillbirths during caesarean sections in our centre occurred in this study group and accounted for more than 70% of the maternal deaths in caesarean delivery mothers.

Anesthetic management of these patients depends on the skill and experience of the anesthetist. In our centre they are delivered by doctors with more than 30 months training but complicated cases are referred to the consultants (eg patients with severe pre-eclampsia and pulmonary oedema). Sixty-eight women in this group (25%) delivered under regional anaesthesia (spinal-63, epidural 5), with 34% of the pre-eclampsia patients delivering by regional anaesthesia.

The high rate of general anaesthesia (75%) in these series was due to the rather high number of patients with conditions that could lead to massive intraoperative haemorrhage like ruptured uterus and antepartum hemorrhage (45.5%). They were mainly delivered under general anaesthesia (75%) because of the risk of dangerous hypotension in tandem with massive bleeding and blood loss₁₂ if regional anaesthesia was used. Five women in this study had hysterectomies to stop their bleeding.

There was a maternal death in a severe pre-eclamptic patient due to asphyxia following failure to intubate and pulmonary aspiration. These emphasizes the need for trainee doctors to be proficient in intubation of pregnant women since some cases are better managed under GA in our region. This is more so in patients in whom regional anaesthesia may be technically difficult and airway management hazardous_{13,14} like obese patients.

Majority of the patient in this series (189 or 70%) received prenatal care in our centre.

There were no stillbirths in the diabetes mellitus group. This was rather surprising in this group with a high risk index for stillbirths and may have to do with close control of the blood sugar during pregnancy and anaesthesia for delivery.

Though, high risk anaesthetic cases pose challenges to the anesthetist and obstetrician including medico-legal ones, early booking and referrals at tertiary care centres may result in better management and outcome. The high stillbirth rates calls for the early involvement of fetal specialists – a novel concept in Nigeria.

CONCLUSION

Advances in the practice of anaesthesia over the years have reduced fetomaternal complications. While advances in general medical care and more awareness of the need for hospital care in our region means more women with comorbidity present for caesarean delivery. However, late presentation of patients coupled with severity of illness resulted in rather high fetomaternal morbidity/mortality in this study. Early referral of at risk patients may help reduce these high rates.

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