

FETO-MATERNAL OUTCOME OF PREGNANCIES COMPLICATED WITH FETAL MACROSOMIA AT THE UNIVERSITY OF ABUJA TEACHING HOSPITAL: A 3-YEAR REVIEW.**Dr. Mba G. O.¹ and Dr. Abdullahi I. H.^{1*}**¹Department of Obstetrics and Gynaecology, University of Abuja Teaching Hospital, Abuja.***Corresponding Author: Dr. Abdullahi I. H.**

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ABSTRACT

Background: Fetal macrosomia has remained a considerable challenge in current obstetric practice due mainly to fetal and maternal complications associated with this condition. **Aim:** The aim of this study is to determine the incidence of fetal macrosomia and feto-maternal outcome in University of Abuja Teaching Hospital. **Materials and method:** This was a 3-year retrospective study of pregnant women with fetal macrosomia (defined as a baby weighing 4kg or above) managed in this hospital from 1st January 2012 to 31st December 2014. Data was collected from labour ward, maternity ward and theatre registers; and patients' folders from the medical records and analyzed using descriptive statistics. **Results:** There were a total of 341 macrosomic babies delivered within the study period and a total of 5097 deliveries, giving an incidence of 6.7%, however, only 332 had adequate and complete information and were analyzed giving a retrieval rate of 97.4%. Booked cases were 244(73.5%) while the unbooked were 98(26.5%) of the parturients. Age range of 31-35 had a total of 119(35.9%) of the babies which was the highest among others. Caesarean delivery accounted for 174(52.4%), spontaneous vaginal delivery and exploratory laparotomy due to ruptured uterus constituted 157(47.3%) and 1(0.3%) respectively. Out of the 174(52.4%) that had caesarean section, 146(83.9%) were emergency while 28(16.1%) were elective. The commonest maternal complication was genital laceration which accounted for 37(11.1%) and the least was shoulder dystocia and accounted for 4(1.2%) of the cases. Primary post-partum haemorrhage occurred in 21(6.3%) of the cases and 1(0.3%) of maternal mortality as a result of primary postpartum haemorrhage was found. One parturient had subtotal hysterectomy due to uncontrollable postpartum haemorrhage. A total of 139(41.9%) of the babies were delivered by women of Ibo tribe and far higher than found among other tribes. Of the total number of babies, 216(65.1%) were male while 116(34.9%) were females. Babies with severe birth asphyxia amounted to 1.9% and stillbirth accounted for 23(6.9%) of the babies. No incidence of fractures, Erb's or Klumpke's palsy was recorded. **Conclusion:** Fetal macrosomia is more frequent among multiparas who are between 31-35 years. The common complications include cephalopelvic disproportion, higher frequency of caesarean section, perineal laceration, postpartum haemorrhage, birth asphyxia and stillbirth. Though the study showed minimal fetal morbidity; fetal mortality was still high.

Keywords: Fetal macrosomia, big baby, feto-maternal outcome, maternal morbidity, perinatal outcome.

INTRODUCTION

The term macrosomia describes a large foetus or baby whose weight is greater than the 90th percentile for gestational age. It occurs in about 2 to 10% of births at term in the UK where a cut-off weight of 4000g or more is the commonly used threshold for diagnosing macrosomia.^[1] However, others have used birth weight ≥ 4500 g for diagnosing macrosomia.^[2-4]

Macrosomia has been found to be associated with many fetal/neonatal complications, including shoulder dystocia, traumatic birth injuries, and asphyxia.^[2-5] There is also evidence that being born macrosomic is associated with major future health risks such as

complications of macrosomia include prolonged labor, labor augmentation, instrumental delivery, caesarean section, postpartum hemorrhage, infection, perineal injuries, thromboembolic events and anesthetic complications.^[5,7]

Racial, ethnic, and genetic factors such as parental height and weight play a role in determining new born birth weight.^[6,8] Other risk factors include multiparity, maternal obesity, diabetes mellitus and prolonged pregnancy.^[1-7] However, none of these factors can adequately identify women at risk of delivering macrosomic babies.^[9] Male fetuses typically weigh more than the female fetuses at any gestational age and

therefore constitute a greater proportion of macrosomic babies.^[2-10]

The objective of this study was to determine the prevalence and associated fetomaternal outcome among parturients who delivered macrosomic babies at the University of Abuja Teaching Hospital.

MATERIALS AND METHODS

This was a retrospective study of pregnant women with fetal macrosomia (defined in this study as weight at least 4 kg) delivered at the university of Abuja Teaching Hospital, Gwagwalada, Abuja, between January 1st 2012 and December 31st 2014. Both booked and unbooked parturients with fetal macrosomia delivered at or greater than 37 weeks' gestation and who had no clinical evidence of congenital malformation were included. Data were collected from labour ward, maternity ward, theatre registers and patients' case notes from medical library. Demographic data were recorded. The outcomes of interest were fetal and maternal complications. Maternal complications that were assessed included the mode of delivery, shoulder dystocia, postpartum haemorrhage, perineal lacerations, and cervical tears. The fetal complications assessed included asphyxia, stillbirths and birth injuries. Data were analyzed using descriptive statistics.

RESULTS

There were 341 macrosomic deliveries out of 5097 total deliveries during the study period giving an incidence of 6.7%. Out of these, 332 had adequate information and records were analyzed giving a retrieval rate of 97.4%. Parturients with age of < 20 years (teenagers) had the least 5(1.5%) macrosomic babies and the highest 119(35.9%) were recorded between 31 and 35 years.

Table 1: Age distribution of parturients.

Age	Number	Percentage
<20	5	1.5
20-25	37	11.1
26-30	110	33.4
31-35	119	35.9
≥35	60	18.1
Total	332	100

Table 2: Parity of parturient.

Parity	Number	Percentage
1	70	21.1
2	76	22.9
3	78	23.5
4	57	17.2
≥5	51	15.3
Total	332	100

The incidence of macrosomia was high among parturients who were para 1, 2 and 3 (67.5%) and lowest among the grandmultipara (15.3%) in this study. The booked parturients made up to 244 (73.5%) of the group

while the unbooked parturients accounted for 98(26.5%).

Table 3: Intrapartum events.

Variables	Number	Percentage
CPD	69	39.7
Shoulder dystocia	4	1.2
PPH	21	6.3
Uterine rupture	1	0.3
Perineal laceration	33	10
Cervical laceration	4	1.2

MODE OF DELIVERY

Mode of delivery	Number	Percentage
Vaginal delivery	157	47.3
Caesarean section	174	52.4
Elective C/S	28	16.1
Emergency C/S	146	83.9

In this study, the frequency of shoulder dystocia was 4 (1.2%), genital laceration was highest among the maternal complications and was found in 37 (11.1%) of the cases. There was 1(0.3%) case of uterine rupture who was a 32 year old unbooked grandmultipara who was referred to our Centre with uterine rupture. Postpartum haemorrhage occurred in 21 (6.3%) of the parturients resulting in death of 1 (0.3%) and subtotal hysterectomy in another 1 (0.3%). Spontaneous vaginal delivery occurred in 157 (47.3%) and 174 (52.4%) had caesarean delivery out of which 28(16.1%) were elective and 146(83.9%) were emergency caesarean sections. Cephalopelvic disproportion was the indication for 69(39.7%) of the caesarean deliveries and was the highest singular indication. The case of ruptured uterus had laparotomy. There was no instrumental delivery recorded.

Table 4: Fetal outcome.

Variable	Number	Percentage
Sex		
Male	216	65.1
Female	116	34.9
Hypoglycaemia	7	2.1
APGAR score 1 st minute		
≥7	265	85.8
4-6	38	12.3
1-3	6	1.9
5 th minute		
≥7	295	95.5
4-6	13	4.2
1-3	1	0.3
Stillborn	23	6.9

Male babies constituted 216 (65.1%) of the total macrosomic babies while the females were 116(34.9%). There was no form of birth injuries recorded. Seven (2.1%) of them had hypoglycaemia. Six (1.9%) of the

babies had severe birth asphyxia and twenty three (6.9%) were Stillbirths.

DISCUSSION

The incidence of fetal macrosomia in this study was 6.7%. This is higher than the incidence of 2.1% in Sokoto, 2.5% in Aba and 3.5% in Ibadan.^[11-13] It is much lower than in the Nordic countries reputed to have the world highest incidence of 20%.^[6] The incidence is also lower than 8.1% found in Enugu and 14.6% found in Port-Harcourt.^[14,15] However, the incidence from this study still falls within the incidence of 1-10% for America and 2-10% for UK.^[1-3] The difference in incidence may be due to differences in the cut-off weight for definition of fetal macrosomia. It may be due to differences in genetic, geographical and socioeconomic factors of the study population.

In this study, the lowest incidence (1.5%) of macrosomia was found among teenage parturients. This tend to agree with findings from other studies.^[14,16] However, Adesina *et al* in Ibadan did not find any significant difference in maternal age.^[13] Grandmultiparity in this study was not found to be strongly associated with fetal macrosomia which was in agreement with the findings of Yasmeen *et al.*^[17] This is however contrary to the findings of Mutihir *et al.*^[18]

The duration of labour has been seen to be prolonged in women carrying macrosomic foetuses, and the risk is increased with increasing birth weight.^[19] This consequently contributes to other maternal complications such as operative delivery and postpartum haemorrhage. Prolonged labour was the most frequent maternal complication (28.3%) in this study. Cephalopelvic disproportion was the commonest indication for emergency caesarean section accounting for 39.7% of cases in this study. The most dreaded complication of vaginal delivery of macrosomic babies is shoulder dystocia due to the associated fetal and maternal injury, risk of birth asphyxia and medico-legal liability.^[20] The 1.2% incidence of shoulder dystocia in this study was lower than 2.3% found by Ezegwui *et al* in Enugu and much lower than 10.5% reported by Esakoff *et al.*^[14,21] Genital laceration and postpartum haemorrhage were other complications noted in this review. Postpartum haemorrhage which occurred in 6.3% of cases has been known to be more commonly associated with delivery of macrosomic babies and the risk increases with increasing birth weight.^[22-25] Perineal laceration was noted to be the commonest of the genital injury associated with macrosomia in this study as found in similar studies.^[22-28]

The overall caesarean section rate in babies with birth weight >4000g varies widely between different studies and ranges from 14-44%.^[24,26] The incidence of caesarean section of macrosomic babies in this study was 52.4% and that of spontaneous vaginal delivery of 47.3% Exploratory laparotomy for ruptured uterus accounted for 0.3%. This is similar to the findings by other

researchers.^[22,28] This was however the reverse of the findings by Ezegwui *et al*, where the caesarean section rate was lower than the vaginal delivery rate.^[14]

This study noted preponderance of macrosomia among male babies in keeping with earlier reports.^[18,30-32] There was no recorded birth injury in this study despite the increased risk in macrosomic babies. Hypoglycaemia was noted in 7(2.1%) of the cases and stood as the commonest fetal complication in this study. This finding is in keeping with other studies where neonatal hypoglycaemia was found to be associated with heavier babies.^[21,28] Fetal macrosomia has been reported to be associated with poorer Apgar scores and the greater the weight, the higher the risk of low Apgar scores.^[24,28]

CONCLUSION

Fetal macrosomia is more frequent among multiparas who are between 31-35 years. The common complications include cephalopelvic disproportion, higher frequency of caesarean section, perineal laceration, postpartum haemorrhage, birth asphyxia and stillbirth. Though the study showed minimal fetal morbidity but fetal mortality was quit high.

Recommendation

Management of suspected macrosomia should be individualized with the aim of minimizing maternal and fetal complications. All obstetricians and midwives should be familiar with the unexpected findings of macrosomia at delivery and manage appropriately to prevent complications.

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