THE TREND OF TWIN PREGNANCY OVER A 5-YEAR PERIOD IN A UNIVERSITY TEACHING HOSPITAL IN LAGOS, NIGERIA.

Adewunmi AA, Rabiu KA, Okudero A

Department of Obstetrics & Gynaecology

Lagos State University Teaching Hospital

Ikeja-Lagos.

Correspondence to

Adewunmi AA

E-mail: niyi_55@yahoo.com

Summary

Twin pregnancy is associated with increased perinatal mortality, preterm deliveries and maternal complications, especially in developing countries. The obstetrics result of twin deliveries at the Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos, Nigeria between January 2002 and December 2006 were reviewed. Within the 5-year period, there were 314 twin deliveries out of 13,351 total deliveries giving an incidence of 1 in 42.6 or 23.5/1000. Perinatal death was over one and a half times greater than that in singleton deliveries (149.7 and 89.7/1000 deliveries respectively). Majority (61.8%) of the patients was booked and there was no relationship with parity. There was no particular trend in the incidence over the 5-year period. Preterm delivery occurred in 25% of the twins and prematurity accounted for about one-quarter of all perinatal deaths which was the highest. The perinatal mortality ratio between the booked (67/1000) and the unbooked (308/1000) cases was 1 in 5.

There was no change in the trend of twinning rate. The antenatal booking and delivery in a specialist centre will reduce the morbidity and perinatal mortality associated with twin pregnancies.

Keywords: *Trend, perinatal mortality, twins*.

Introduction

There is considerable variation in twinning rates across the world, largely accounted for by the rate of dizygotic twinning which is usually affected by race, parity and age[1]. It is most common among the blacks of West African subregion and least common among the Asian Mongolians. Nigeria has the highest rate throughout the world[2]. Statistics from the three major ethnic groups in Nigeria namely Yoruba, Hausa and Igbo show twinning rate of 53.0, 39.5 and 35.1/1000 deliveries respectively[2,3,4].

Recent reviews of the incidence of twin pregnancy have shown a decrease among the three major ethnic groups. Rates being quoted are 35.7, 28.5 and 23.2/1000 among the Yoruba, Igbo and Hausa ethnic groups respectively[5, 6, 7].

However, the incidence of multiple births is on the increase worldwide especially in developed countries where twinning rates have increased by 50% in the last 20 years[8]. This has been attributed to increasing use of assisted reproductive technology (ART).

Twin pregnancy is commonly associated with a lot of complications in pregnancy, labor and delivery. It is also associated with a high perinatal mortality commonly due to prematurity[9].

This study aims to highlight the trend of twinning over a five-year period and the contribution of twin pregnancy to perinatal mortality at the Lagos State University Teaching Hospital and evolve strategies to reduce it.

Materials and Method

The case files of all pregnant patients delivered of twin babies at the Lagos State University Teaching Hospital, Ikeja, Lagos between January 2002 and December 2006 were retrieved from the medical records department.

Each case was analyzed in respect of age, parity, booking status, gestational age at delivery, mode of delivery, complications including neonatal deaths that arose from the twin delivery.

The total delivery for the period was recorded, so also was the total neonatal deaths among the first and second twins.

Statistical analysis was carried out where necessary using either student's 't' test or chi square test as appropriate. Level of significance was set at $P< 0.05$.

Results

The total delivery for the five-year period was 13, 351 and the twin deliveries were 314, giving an incidence of 1 in 42.6 deliveries or 23.5/1000.

The number of perinatal deaths in the singleton pregnancies was 1,198 and 47 in twin pregnancies, giving a perinatal mortality rate of 89.7/1000 and 149.7/1000 respectively. The number of booked cases was 194 (61.8%) while the unbooked cases were 120 (38.2%). Among the booked cases there were 10 (21.3%) perinatal deaths while in the unbooked cases, there were 37 (78.7%) perinatal deaths. This gave a perinatal mortality rate of 67 and 308 per 1000 respectively, a ratio of 1 to 5. This was found to be statistically significant (p value < 0.001).

- Table 1 shows the yearly trend in twin deliveries. The highest incidence of 30.6/1000 was in 2003, while the least was in 2006 when it was 18.7/1000. Overall there was no particular trend in twinning rate over the study period.
- Table II shows the age and parity distribution as well as the gestational age of the twin deliveries. It was found that relatively more twins were delivered at 35 or more years of age, during which there were 45 twins out of 1434 (3.1%) deliveries. The least ratio occurred at less than 20 years of age, among whom there were 13 out of 908 deliveries (1.4%). Between these two extremes of age range there was a steady increase in the incidence with age.

  With regard to the parity, the least incidence, 1.4%, was found in the nullipara (para 0) and the highest in para 3. There was no definite pattern with respect to parity.

  Majority of the twins were delivered at term; 238 out of 316 (75.3%). The remaining were delivered preterm, out of which only 7% were delivered at the extreme of preterm age of between 28 and 33 weeks (22 out of 316), while 56 (17.7%) were delivered between 34 and 37 weeks.
- Table III shows the causes of perinatal death. The commonest cause of perinatal death was low birth weight 15 out of 47 (31.9%). This was followed by hypertensive disorders of pregnancy (21.3%), retained second twin and cord prolapsed (10.6% each), antepartum hemorrhage (8.5%), while obstructed labor, ruptured uterus, severe anemia each contributed 4.2% to the overall perinatal death. The cause of death could not be ascertained in 4.2% of cases.

TABLE I: Yearly Trend in Twin Delivery

YEAR	TOTAL DELIVERY	TOTAL NO OF TWINS	RATE/1000
2002	2405	64	27.0
2003	2321	71	30.6
2004	2821	58	20.6
2005	2970	67	22.6
2006	2834	53	18.7
TOTAL	13351	314	23.5

TABLE II: Maternal Age, Parity and Gestational Age of Twin Deliveries

AGE(YRS)	TWIN DELIVERY	TOTAL DELIVERY	%
<20	13	908	1.4
20-24	54	3400	1.6
25-29	76	3029	2.5
30-34	119	4580	2.6
>35	45	1434	3.1
NOT STATED	7	-	-
TOTAL	314	13351	2.3
PARITY	TWIN DELIVERY	TOTAL DELIVERY	%
0	29	2004	1.4
1	59	2306	2.5
2	45	2011	2.2
3	65	2036	3.2
4	38	1767	2.1
>5	78	3227	2.4
TOTAL	314	13351	2.3

GESTATIONAL AGE(WKS)	NO OF TWIN DELIVERIES	%
28-33	22	7.0
34-36	56	17.8
>/=37	36	75.2
TOTAL	314	100.0

TABLE III: CAUSES OF PERINATAL DEATH IN TWIN DELIVERY

CAUSES OF DEATH	NUMBER	PERCENTAGE (%)
1. Low birth weight	15	31.9
(i) Preterm	12	25.5
(ii)Intrauterine growth restriction	3	6.4
2. Hypertensive disorders of pregnancy	10	21.3
(i) Pre-eclampsia	7	14.9
(ii) Eclampsia	3	6.2
3. Retained second twin	5	10.6
4. Cord Prolapse	5	10.6
5. Antepartum Haemorrhage	4	8.5
6. Obstructed labour	2	4.2
7. Ruptured uterus	2	4.2
8. Severe anemia	2	4.2
9. Unknown	2	4.2
TOTAL	47	100.0

Discussion

This study revealed a twinning rate of 23.5/1000 or 1 in 42.6 deliveries that is comparable with current rates in Nigeria[7,10,11]. The highest twinning rate found in Nigeria as a whole and particularly in the south-west region is associated with dizygotic twins. Suggested factors by Nylander in 1997 and 1981, for this high twinning rate include the presence in the diet (predominantly yam) of estrogen-like substances, raised follicle stimulating hormone level, maternal height, social class and ethnicity.

The yearly trend in twinning rate in this study appears to be constant as found in a similar study in Enugu[12] despite repeated reports of increasing twinning rate in many parts of the world[13]. The ever- increasing twinning rate especially in developed countries has been attributed to the use of assisted reproductive techniques (ART)[13]. In-vitro fertilization (IVF) and Gamete Intra-fallopian transfer (GIFT) carry a 20-25% risk of multiple pregnancies, while the use of clomiphene citrate and gonadotrophins carry about 8 and 20% risks of multiple pregnancy respectively[14]. There are very few ART centers in Nigeria and the cost is not yet affordable to majority of infertile couples, hence its impact on twinning in Nigeria will still take a little while to manifest.

In this study, there was a progressive rise in the incidence of twins with increase in maternal age peaking at 35 years and above. This has been demonstrated in a similar study[11]. Twins are commoner in older mothers presumably due to the rising levels of gonadotrophins in them[8]. Maternal parity does not seem to affect the incidence of twinning[11] and this has been confirmed in this study which revealed no regular pattern of incidence with increasing parity.

Twins of unbooked mothers constituted 38.2% of the total number of twins in this study and the mortality rate in them was five times more than that from booked mothers. This is similar to other studies in Nigeria where unbooked status is a recurrent finding[15,16]. This is a big problem in this centre because most patients that come are of low socio-economic status. Since emergency services are free in the first 24 hours of admission, a lot of the patients come in only to discover that the facilities cannot cope with the volume of patients.

A perinatal mortality rate of 149.7/1000 obtained in this study is unacceptably high, but it is similar to a recent study in the Niger- Delta region[10] which quoted a perinatal mortality rate of 131/1000. Statistics from other parts of Nigeria indicate rates ranging from 85.41-186.4/1000 and reaching up to 310/1000 in monochorionic twins[7, 17, 18]. These rates however are higher when compared to rates in developed countries like Sweden with a perinatal mortality of 64/1000[19].

The commonest cause of perinatal mortality from this study is prematurity (25%). In a study in Benin[20], prematurity contributed 52% to the perinatal mortality. Various strategies have been recommended to minimize the rate of preterm deliveries in twin pregnancies. These include prolonged hospitalization for bed rest, prophylactic use of beta sympathomimetic drugs and prophylactic cervical cerclage. None of these interventions have convincingly shown an improvement in perinatal outcome when used routinely in twin pregnancy, save for prolonged bed rest at home when diagnosed early[8, 21]. Where preterm labor is however imminent, inhibition of labor with tocolytic drugs and acceleration of lung maturity with glucocorticoids may be of value especially when labor can be delayed for more than 24 hours to allow steroids have effect on lung maturation.

Other causes of perinatal death in this study are hypertensive disorders of pregnancy, retained second twin, cord prolapse, antepartum hemorrhage, obstructed labor, ruptured uterus and severe anemia.

This study found a high twinning rate, no change in trend over a five-year period, unacceptably high perinatal mortality rate and a group of patients that were largely unbooked. Early diagnosis of twin pregnancy, frequent intensive antenatal care in specialist centers, properly managed intrapartum care and availability of neonatal intensive care facilities would reduce this high perinatal mortality. Definitive measures should be put in place to improve the socio-economic status of the people, subsidize maternal and child health, thereby encouraging antenatal booking and preventing mortality.

References

1. **Nylander PP**. The factors that influence twinning rates. *Acta Geneticae Medicae et Gamelologiae (Roma)*.1981; 30: 189-202.
2. **Nylander PP**. The twining incidence of Nigeria. *Acta Geneticae Medicae et Gamelologiae (Roma)*. 1979 ;28:261-263.
3. **Rehan N, Tafida DS**. Multiple births in Hausa women. *British Journal of Obstetrics and Gynaecology*. 1980; 97: 997-1004
4. **Azubike JC**. Multiple Births in Igbo women. *British Journal of Obstetrics and Gynaecology*.1982; 89: 77-79
5. **Olayemi OO, Adetunji AR, Aimakhu CO**. Determinants of Perinatal mortality in twins at Ibadan. *Trop J Obste and Gynaecol* 2002; 19:36-38
6. **Adinma JIB, Agbai AO**. Multiple births in Nigerian Igbo women: Incidence and Outcomes. *Journal of Obstetrics and Gynaecology*. 1997; 17:42-44
7. **Muthir JT, Pam VC**. Obstetrics Outcome of twin pregnancies in Jos, Nigeria. *Niger J Clin Pract*. 2007;10(1): 15-18
8. **Fisk NN**. Multiple Pregnancy. In Edmonds D.K. editor. Dewhuists Textbook of Obstetrics and Gynaecology for post graduates. 7th edition London: Blackwell Science.2007; p.166-176.
9. **Killpatrick JJ, Jackson R, Crougham-Minihame MS**. Perinatal Mortality in twins and single twins matched for gestatunal age of delievery at > 30 weeks. *American Journal of Obstretics and Gynaecology*.1996; 174:66-71
10. **Isberase GO, Ebeigbe PN, Bock- Oruma A**. Twining rate in rural mission tertiary hospital in the Niger-Delta, *Nigeria. Jounal of Obstetrics and Gynaecology* 2008; 28(6) 586-589.
11. **Olatunji AO**. Twining: A Retrospective study at Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria. *Nigerian Medical Practitioner*. 2002.`41:516; 52-56.

12. **Onah HC, Ugwu GO**. Trends in the twinning rate in Enugu. *Nigeria Journal of Obstetrics and Gynaecology*, 2008; 28: 6, 590-592.

13**. Pimburg A**. WF/ICSI twin pregnancies: risk and Prevention. *Human Reproduction Update*.2005; 11:575-593.

14.**Umstard MP, Gronow MJ**. Multiple Pregnancy: a modern epidermic? *Medical Journal of Australia*. 2003; 178: 613-615.

15. **Asien AO, Olarenwaju RS, Imade GE**. Twins in Jos, Nigeria: a seven-year retrospective study. *Medical Sci Monitor*. 2000; 6(5) : 945-950

16. **Igberade GO, Ebeigbe PN**. Eclampsia: ten years of experience in a rural tertiary hospital in the Niger-Delta, Nigeria. *Journal of Obstetrics and Gynaecology*. 2006; 26: 414-417.

17. **Enem A, Aneikan MA, Udoma BJ**. Outcome of twin pregnancy in Calabar Nigeria. *Global Journal of Med. Sc.* 2004; 3(1&2): 13-15

18. **Nwobodo EI, Bobzom DN, Obed J**. Outcome of twin pregnancies in Maiduguri, Nigeria. *Journal of Obstetrics and Gynaecology*. 2002; 17: 261-263

19. **Peterdon F, Smeedby B, Lindmark G.** Outcome of twin birth. Review of 1636 children born in twin birth. *Acta Paediatrice Scandinavica*.1976; 65: 473-479.

20. **Omu AE, Akingba JB**. The contribution of multiple pregnancies to perinatal Mortality in Benin City. *Journal of Obstetrics and Gynaecology*. 1983; 3: 227-232.

21. **Keith L, Ellis R, Berger GS, Depp R**. The North Western University Multihospital Twin Study 1. A description of 585 Twin pregnancy less 1971-1975. *Am J Obs Gynae*.1980; 138:781-787.