Nigerian Journal of Clinical Practice
Sept 2008 Vol 11(3) :231-234

A 20-YEAR REVIEW OF TWIN BIRTHS AT MATER MISERICORDIAE HOSPITAL, AFIKPO, SOUTH EASTERN NIGERIA

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ABSTRACT

Objectives: To provide information on twin deliveries among Igbos in a rural/semi-urban community of South-Eastern Nigeria, and compare the twinning rate with data from the other two major tribes.

Methods: An analysis of the records of deliveries conducted over a 20-year period in a rural/semi-urban community of South-Eastern Nigeria.

Results: The twinning rate of the community was 1:24, and increased with increasing maternal age, and generally with birth rank. Twin births were associated with a MMR of 895/100,000, and PMR of 213/1000 maternities, figures 3.4 and 1.7 times those of the total maternal and perinatal mortalities respectively. Ninty percent of the twin mothers delivered vaginally, 2% with the aid of symphysiotomy. Caesarean section rate was 10.6%.

Conclusion: The twinning rate within Nigeria may probably be dictated by location rather than ethnicity. The maternal and perinatal mortalities associated with twin pregnancies in this study appear higher than for singleton births.

Key Words: Twin Births, Rural Community, Eastern Nigeria. *(Accepted 22 May 2007)*

INTRODUCTION

The incidence of multiple births has a broad racial and geographical variation. People of African descent have the highest incidence, the far Eastern races the lowest and the Caucasians of Northern Europe are intermediate. Within each racial group, ethnic influences may prevail. In Nigeria, the rate of twin pregnancy among the three major ethnic groups the Yorubas of the West, the Hausa Fulanis of the North, and the Igbos of the East have been reported to be 1:19, 1:25 and 1:33-35 respectively.[1-4] Furthermore, twinning rates appear to vary between urban and rural populations. In an examination of multiple births among Igbo women in three Hospitals in Eastern Nigeria University of Nigeria Teaching Hospital (UNTH), Enugu which serves as a referral center, an urban Maternity Hospital, and a rural Community Hospital Azubuike[4] noted that the incidence of mutiple births was highest in the rural Community Hospital and lowest in the University Teaching Hospital. The present retrospective study aims at providing information on twin births among Igbo women in a rural/semiurban Catholic Mission Hospital in Ebonyi State of Eastern Nigeria. It is hoped that the findings of this study will help in a better understanding of the phenomenon of twin birth and its management.

MATERIALS AND METHODS

Mater Misericordiae Hospital (MMH) Afikpo, in Ebonyi State of Eastern Nigeria, was established in 1946 and serves Afikpo town with a population of over a hundred and twenty thousand people, and also the surrounding villages up to a radius of 120km. The subjects are of the Igbo tribe and the vast majority are rice farmers, traders and fishermen. The Hospital admits all pregnant women, some of whom are seen for the first time in labour.

During the 20 year study period, the records of 33689 deliveries were available for the study, and constitute the body of this review. Details of maternal characteristics and of the babies delivered during the period under review were extracted from the records and analyzed. These included age, and parity of the mothers, details of the pregnancies and labour, and the gestational age, sex and birth weight of the babies.

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RESULTS

During the period under review, there were 33689 deliveries at the MMH, 1453 were twin births and 30 triplets giving the incidence of 1:24 and 1:1171 respectively. Details of the yearly twin births are shown in Table 1. The highest rates of twin deliveries occurred between the years 1984 and 1993 with the peak of 1:16 in 1985 and an average twinning rate of 1:19 during the 10 year period. The frequency distribution of the 1453 twin deliveries according to the parity of the women is displayed in Table 2. Twinning incidence was lowest in para 0 and para 1 (1:40) and rose dramatically at para 2 and then generally to a rate of 1:15 at para 6. Thereafter it fell steadily from para 7-9 and rose again finally to a peak of 1:11 at para 11. Nine hundred and thirty-one (64.1%) of the twin deliveries occurred in women of para 2 to 6, and nulliparous women were responsible for over 12% of the twin deliveries.

Table 3 shows the frequency distribution of 1408 twin births by maternal age. Maternal age was unrecorded in 45 instances and these were excluded from the table. The twining rate was lowest in teenagers and increased steadily with maternal age to a peak in women aged 40 years and above. Seven hundred and eight (50.3%) of the twin deliveries occurred in women aged 30 years and above, a group that was responsible for 12761 (37%) of the total deliveries.

The relative frequency of the presentation of the fetuses is shown in table 4. The commonest presentations were vertex/vertex which occurred in 46.3% of the pregnancies, followed distantly by vertex;breech in 23.6% of the fetuses, breech/vertex in 14.3% and breech/breech in 13.3%.

Labour Outcome

Vaginal delivery was achieved in 1299 (89.4%) of the 1453 twin pregnancies, in 29 of these with the aid of symphysiotomy. Symphysiotomy was performed to relieve arrest of the after coming head of the first twin (41.4%) and second twin (58.6%). One hundred and fifty four women were delivered by Caesarean section, an incidence of 10.6%.

Of the 1453 sets of twins delivered (Table 5), 443 (30.49%) were twin males, 407 (28.01%) twin females and there were one of each sex in 603 (41.5%). Information on the placenta in the records was insufficient to permit an observation on how many of the 850 like sexed twins were identical.

The fetal and maternal outcome of the twin births are presented in Tables 6 and VII. The weight distribution among the twin births is shown in Table 6. Nearly half of the twin babies weighed less than 2.5kg at birth. The twins were of equal weight in 9.6% of cases; the first twin weighed more than the second in 46.7% of instances, and the second was heavier than the first in 43.7%. There were 121 stillbirths, and 189 neonatal deaths among the 1453 twin births, a perinatal mortality rate of 213 per 1000. Thirteen deaths occurred among the twin mothers, giving a maternal mortality rate of 895 per 100,000 maternities. The total maternal mortality rate during the study interval was 538 per 100,000.

Table 1: **Twin Deliveries at MMH by Year, 1980-1999**

Year	Total Births	No of Twin Births	*Ratio Total Births*
1980	3108	144	1:23
1981	2581	67	1:40
1982	2605	99	1:27
1983	3054	104	1:30
1984	1654	76	1:23
1985	1778	119	1:16
1986	1939	97	1:21
1987	758 (Data of Jan-June only available)	43	1:19
1988	1044	58	1:19
1989	1626	95	1:18
1990	1176	58	1:21
1991	1494	86	1:18
1992	1230	68	1:19
1993	1539	91	1:18
1994	1174	40	1:30
1995	1481	39	1:39
1996	1795	46	1:40
1997	1633	36	1:46
1998	1089	49	1:23
1999	931	38	1:26
TOTAL	**33689**	**1453**	**1:24**

Table 3: **Frequency distribution of 1408 twin births by maternal age**

Age	Total births	Twin births	Ratio total births
?19	4971	47	1:107
20-29	16061	653	1:26
30-39	11161	630	1:19
?40	892	78	1:12

Maternal age unrecorded in 604 total (and 45 twin) births.

TABLE 2**: Twinning Rates by Parity**

Parity	0	1	2	3	4	5	6	7	8	9	10	11	*12*
Twins	184	122	184	211	156	196	184	117	57	27	10	5	0
Total births	7398	4823	3891	3853	3587	3200	2776	2079	1190	641	171	56	24
Twinning rate	1:40	1:40	1:21	1:18	1:23	1:16	1:15	1:18	1:21	1:24	1:17	1:11	-

Table 4: **Incidence of Presentation of the Twin Fetuses (n=1453)**

Position of Fetus	No	Percent
Vertex;vertex	673	46.3
Vertex;breech	343	23.6
Breech;vertex	207	14.3
Breech;breech	193	13.3
Vertex;shoulder	13	0.9
Breech;shoulder	12	0.8
Shoulder;breech	7	0.5
Shoulder;vertex	4	0.3
Shoulder;shoulder	1	0.06

Table 5: **Distribution of Sex of Twins Born at MMH (n=1453) Compared with Results from UNTH**

	MMH		UNTH	
Sex	**No**	**%**	**NO**	**%**
Male: Male	443	30.5	167	29.9
Female: Female	407	28.0	176	31.5
Male: Female	603	41.5	215	38.5
Total	**1453**	**100.0**	**558**	**100.0**

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Table 6: Fetal Birth Weight Distribution in Twin Births (n=1453) Birth Weight (kg)

B Wt (kg)	?1.0	1.1-1.4	1.5-1.9	2.0-2.4	2.5-2.9	3.0-3.4	3.5-3.9	?4
Twin I	10	52	188	465	470	229	30	9
Twin II	9	56	217	451	459	225	33	3
Total	19	108	405	916	929	454	63	12
%Total	0.65	3.75	13.9	31.5	31.95	15.65	2.2	0.4

Table 7: **Maternal and Fetal Outcome of Twin Births (n=1453)**

Outcome	Number of Deliveries	
	Twins	Total
Stillbirths	121	1505
Neonatal deaths	189	596
All births	1453	33689
Perinatal mortality rate/1000	213.4	62.4
Maternal deaths	13	189
Maternal mortality rate (100,000)	895	538

DISCUSSION

Until the recent increase in multiple births in the developed countries following the introduction of assisted reproductive technologies, twinning was reported to be three to four times as common in the African as in the European. The apparent disparity in twinning rates is probably mediated through dizygosity which varies with race, maternal age, nutrition and geographical location, since the rate of monozygotic twinning is constant worldwide at 1:200 to 1:300.

The twinning rate of 1:24 found in this study of Igbo women living in a rural/semiurban area of eastern Nigeria is much higher than the rates of 1:33 and 1:35 previously reported for the Igbo [3,4], but closer to the figures of 1:22.4 and 1:24 recorded for the Yorubas of the West and the Hausa-fulanis of the north respectively.[2,5]

In 1960, Knox and Morley [1] reported a twinning rate of 1:19 among the Yoruba women living in a rural area of Western Nigeria, and concluded that that was the highest for any community in any part of the world. At about the same time however, Cox [6] recorded a higher twinning rate of 1:18 among Igbo women attending the rural Methodist hospital of Amachara in Eastern Nigeria. Furthermore, the twinning rate from our study at MMH of 1:24, is similar to the figures obtained among Igbo women at the "Mile Four Hospital", a sister rural Catholic Mission institution located 75kilometers east of MMH [7] and the Oko Community hospital (OCH) in Anambra state of Eastern Nigeria. This would suggest that there probably may be little or no difference in the twinning rates of the three major tribes of Nigeria. Indeed, the wide variation in the twinning rates previously observed within, and between, the different tribal groups may probably and partly be explained by the location of the populations studied.

Surprisingly, referral hospitals situated in urban areas registered lower twinning rates when compared with figures from hospitals situated in the rural areas. Why it is rather difficult to proffer a reason for this observation, it may be because many of our mothers would rather prefer to deliver in a familiar environment close to their homes and would probably resort to the referral centre when the labour appears complicated. This suggestion is borne out of the fact that an earlier study[8] from Ebonyi state showed multiple booking patterns among women receiving free antenatal care at Ebonyi State Teaching Hospital. Though there was a significant increase in utilization of obstetric services with the introduction of free antenatal and delivery services at the centre,9 there was still a significant difference between the number that received antenatal care and the actual number that eventually delivered at the centre. [8]

The very high twinning rates found at the MMH between 1984 and 1993 is difficult to explain. The willingness of the Missionary hospital to accept all women for antenatal care and delivery may have encouraged those with multiple pregnancies to seek its care and protection. Factors that may have contributed to the sudden decrease in the twinning rates recorded at the MMH after 1993 include the expansion in maternal care services provided by newly established medical facilities in the State. Furthermore the worsening socio-economic circumstances of the people of Nigeria over the past decade have impacted negatively on hospital attendance for health care, antenatal care and delivery purposes. This fact is substantiated by the finding of a three fold rise in the number of deliveries at the Ebonyi State University Teaching Hospital in 2003(located about 70km of MMH) following the introduction of the policy of free maternal care services in the State in February 2001[9]

This study confirms previous observations[1,4] that twinning rate rises with increasing maternal age. There was however no sharp decline in the twinning rate in women in their late thirties as noted by Hendricks and others.[10] On the contrary, the peak incidence of twinning in our review occurred in women aged 40 years and above. Similarly, although the rate of twinning has been reported to rise progressively with ascending birth rank, [1,4,6] our study showed a dramatic rise after para 1, a general rise thereafter till para 6, a fall until para 9 followed by a marked rise to the peak rate of 1:11 at para 11. Eighty-five percent of the total deliveries had occurred by the sixth delivery.

Analysis of the relative frequency of the presentation of the fetuses shows that the frequency of the commonest presentation (vertex: vertex) 46.3% is much higher than the 30 40% reported in the literature. Similarly, vertex followed by breech was commoner than breech followed by vertex. This is also at variance with what is commonly recorded in textbooks. The significance of these observations in terms of the outcome of labour is uncertain.

A study of Table 5 indicates that nearly half (49.8%) of the twin fetuses weighed less than 2.5kg at birth. This group accounted for most of the fetal deaths. The perinatal and maternal mortalities associated with twin births were 3.4 and 1.7 times those of the total mortalities respectively. The high rate of vaginal delivery of twins of nearly 90% in this study, and the low incidence of caesarean section of 10.6%, were achieved through the judicious use of symphysiotomy, especially in the relieve of arrest of the after coming head of the breech.

Figures from this, and other studies of twinning from West Africa, confirm the view that Nigeria has one of the highest twining rates of all communities in the world. Within the country however, the twining rate would appear to be dictated by the location, rather than the ethnicity, of the women, being higher in the rural as compared to the urban communities.

Many factors may account for the appallingly high maternal and perinatal deaths found in this study. Labour usually commences at home often supervised by an illiterate traditional birth attendant. The women would arrive in the Hospital after much delay, in prolonged infected obstructed labour. The first twin is often born before arrival, and there is delay in delivery of the second twin. Cord accidents are common.

Factors that may lead to a reduction in the high perinatal and maternal mortalities associated with twin maternities include governmental policies aimed at poverty reduction, family size limitation, and the provision of free antenatal care and improved maternal and public health services.

REFERENCES

1. **Knox G, Morley D.** Twinning in Yoruba Women. J. Obstet. Gynaecol Br. Emp. 1960; 67, 981 984

2. **Rehan NE, Tafida DS.** Multiple births in Hausa women. Br. J. Obstet. Gynaecol. 1980; 87: 997-1004.

3. **Egwuatu VE.** Triplet Pregnancy . A review of 27 cases. Int. J. Gynaecol. Obstet 1980; 18: 460-464.

4. **Azubuike JC.** Multiple births in Igbo women. Br. J. Obstet and Gynaecol. 1982; 89: 77-79.

5. **Nylander PP.** The incidence of triplets and higher multiple births in some rural and urban populations in Western Nigeria. Ann Human Genet. 1971; 34: 409-15.

6. **Cox ML.** Incidence and aetiology of multiple births in Nigeria. J. Obstet Gynaecol Br. Comwealth 1963; 70: 878 884.

7. St. Patrick's Mile Four Hospital Abakaliki, Ebonyi State, Nigeria. 2003 Annual Report.

8. **Sunday-Adeoye I, Ogbonnaya L.U, Umeora OUJ , Asiegbu O.** Concurrent Use of Multiple Care Givers By Women Utilizing The Free ANC Care at Ebonyi State University Teaching Hospital, Abakaliki. Afr. J. Reprod. Hlth. 2005: 9:2. 101-106.

9. **Egwuatu, VE.** Reflections on maternal mortality in Nigeria: The Fifth Okoronkwo Kesandu Ogan Memorial Oration. Trop. J. Obstet. Gynaecol 2003; 20 (1): 76-82.

10. **Hendricks CH.** Twinning in relation to Birth Weight, Mortality, and congenital Anomalies, Obstetrics & Gynaecology. 1966; 27 (1): 47-53.