TWIN DELIVERIES IN SACRED HEART CATHOLIC HOSPITAL OBUDU: EXPERIENCE FROM A SECONDARY HEALTH FACILITY IN SOUTH-SOUTH NIGERIA

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ABSTRACT

BACKGROUND: Twin pregnancy is associated with increased risk of obstetric complications as well as increased perinatal mortality rate.The study aims to determine the incidence and outcome of twin pregnancy in a rural/semi urban hospital which provide secondary level obstetric services in South- south Nigeria.

METHOD: This was a retrospective review of all twin deliveries at the Sacred Heart Hospital, Obudu.The case files of all patients who had twin deliveries from 1st January 2009 to 31st December 2014 were studied.The data extracted were age, parity; presentation of foetuses, mode of delivery, gestational age at delivery, maternal and foetal complications,Apgar score and foetal outcome.The data was analysed using IBM SPSS version 20 package.A p-value of < 0.05 was considered significant.

RESULTS: The incidence of twin pregnancy was 1:32 deliveries.The mean age of the women was 27.0 +- 5.3 years. The highest incidence was among 25-29 years age group.The median parity was 2, range 0-7.About 78.1% (139) of the women were booked, while 21.9% were unbooked.Twin pregnancy was diagnosed before the onset of labour in73.6% of the women. The mean gestational age at delivery was 37.1 +- 3.4 weeks, with 19.1% (34) delivered preterm.
Preterm delivery was the commonest complication (39.9%), followed by retained second twin. Abnormal presentation of the leading twin was the most common indication for Caesarean section (41.9%), followed by retained second twin (12.9%).About 66.8% of the patients had the leading twin in cephalic presentation, cephalic: cephalic presentation was the most common presentation (43.8%).The mean birthweight of the first twin was 2.4+-0.6kg and the second twins 2.3+-0.6kg. The first twin had fewer babies with 5-minute Apgar score less than 7 compared to the second, there were also more stillbirths among the second twins, P< 0.0001.The overall stillbirth rate was 112.7/1000 births compared with 63.1/1000 for all singleton deliveries in the centre.

CONCLUSION: Twin pregnancy is common in our secondary health facility and is associated with high maternal and foetal complications and stillbirth rate. More in-service training of doctors and midwives on skills of twin delivery and early decisions on referral for specialised care are recommended.

KEYWORDS: Twin deliveries,secondary health facility,foetal outcome

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INTRODUCTION

Multiple pregnancies are associated with increased risk of obstetric complications as well as increased perinatal and neonatal mortality rates. Most maternal complications are related to anaemia, preterm labour, pregnancy induced hypertension and, complications of labour and postpartum haemorrhage. Increased perinatal mortality is related to prematurity, intra uterine growth restriction, fetal anomalies, low birth weight, etc. The risk for perinatal mortality is 5-10 times that for singleton prenancies[1,2].

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The incidence of multiple pregnancy varies world-wide, which is thought to be influenced by both environmental and racial factors[3]. The use of assisted reproductive techniques has also led to an increased incidence particularly in developed countries over the last two decades[4]. People of African descent have the highest incidence, median among the Caucasians of Europe and North America and lowest among Asians[2]. Within each racial group, ethnic differences prevail. In Nigeria, the rate of twin pregnancy has been reported to be highest among the Yoruba of South West[5]. Multiple pregnancies also appear to vary among urban and rural populations. Azubuike noted that the incidence of multiple births was highest in rural hospital and lowest in the urban University hospital[6]. Sunday-Adeoye also reported a higher incidence in a

20year review of twin births at a rural/semi urban Catholic Mission Hospital in Eastern nigeria[7]. The Royal College of Obstetricians and Gynaecologists recommends that clinical care for women with twin and triplet pregnancies should be provided by a nominated multidisciplinary team consisting of a core team of named specialist obstetricians, specialist midwives and ultrasonographers, all of whom have experience and knowledge of managing twin and triplet pregnancies[8].However, this is not practicable in low resource setting like Nigeria, where the usual practice is for patients with twin pregnancy to be managed in a minimum of a secondary health facility. Most of the reports of outcome of twin pregnancies are from tertiary health facilities, with little or no reports of experience from secondary health facilities where possibly most of the twin deliveries takes place.

This study aims to determine the incidence and outcome of twin pregnancy in a rural/semi urban Catholic Mission hospital which provides secondary level obstetric services in South-South Nigeria. It is hoped that this study will provide information on twin pregnancy in a rural/semi urban community as well as provide some information about the experience in a secondary health facility. It is hoped that this study will also help in better understanding of the phenomenon of multiple pregnancy in this part of the country.

Materials and Methods

The study was carried out at the Maternity unit of Sacred Heart Catholic Hospital (SHCH) Obudu. Obudu is the capital of Obudu local government area, located in the northern part of Cross River state. The inhabitants are mainly subsistence farmers, traders and civil servants from the few government establishments within the town. The Sacred Heart Catholic Hospital (SHCH) is a 235-bed capacity hospital with a 44-bed maternity unit including four delivery beds. As of 2014, there were three medical officers and eight trained nurse-midwifes that offer maternity services. The hospital is visited once in a year by a consultant Obstetrician for four weeks, with occasional visits by year three residents from mainly Jos University Teaching Hospital, but sometimes from other parts of the country. Outside those periods, the Obstetric services are offered by the medical officers and nurse midwives. The maternity unit admits all pregnant women, some of which may be seen for the first time in labour. The case notes of all patients who had twin delivery from 1stJanuary 2009 to 31st December 2014 were studied. The data extracted were age, parity, presentation of the foetuses, mode of delivery, maternal or fetal complications, birth weights, Apgar score at 5minutes and foetal outcome. The data was analysed using IBM SPSS® Version 20 package. A P-value of ? 0.05 was considered significant.

Results

There were a total of 5736 deliveries during the study period and 178 twin deliveries, giving a twin birth rate of 31 per 1000 births (1 : 32births). The mean age of the women was 27.0 ±5.3 years; the highest incidence was among the 25-29 year age group, table 1. The median parity was Para 2, with a range of 0-7.One hundred and thirty nine women (78.1%) were booked, while (39) were unbooked. Similarly, twin pregnancy was diagnosed before the onset of labour in 131(73.6%) of the women while 47 (26.4%) were undiagnosed prior to labour. The mean gestational age at delivery was 37.1±3.4weeks, with 19.1% (34) delivered preterm. Table 2 shows the mode of delivery; about 65% (116) had successful vaginal delivery of both twins while 4.5% (8) had the first twin delivered vaginally and the 2nd twin delivered through Caesarean section.

Seventy one (39.9%) of the patients had some antenatal or labour complications. Preterm delivery was the major complication (47.9%), followed by retained second twin (18.3%). Five women (7.0%) had primary postpartum haemorrhage necessitating blood transfusion, table 3. Table 4 shows the indication for Caesarean section. Abnormal (non-cephalic) presentation of the leading twin was the commonest indication for Caesarean section, 41.9% (26), followed by retained second twin, 12.9% (8) of the patients.

One hundred and nineteen (66.8%) of the patients had the leading twin in cephalic presentation. Cephalic: Cephalic presentation was the most common, table 5. The mean birth weight of the first twins was 2.4 ± 0.6kg and that of the second twins was 2.3 ± 0.6kg.There was no statistical difference in the weights of the twin pairs (t 1.439, df =161, P = 0.152.paired sample t test).

The first twin had fewer babies with Apgar score less than seven, compared with the second twins. Similarly, there were more still births among the second twins. These differences were statistically significant, ($\chi 2$ = 69.899, df 4, P < 0.0001), table 6. The overall stillbirth rate was 112.7/1000, (101.7/1000 for twin 1 and 123.6/1000 for twin 2) compared with 63.1/1000 for all singleton deliveries in the centre. More of the first twins 56.6% (94) were of normal birth weights compared to the second twins, 47.3% (79). However, they both had about equal proportion of very low birth weight babies, table 7. There was no significant difference in Apgar score at 5minutes or stillbirth rate between foetuses delivered vaginally or through Caesarean section for both first ($\chi 2$ 6.808,df = 4, P = 0.146)and second ($\chi 2$ 8.502, df 4, P = 0.075)twins.

DISCUSSION

The incidence of 1:32 deliveries observed in this study is lower than those reported in south western and south

eastern Nigeria [7,9,10, 11]. It is however higher than that reported from a tertiary hospital in Uyo, also in South-South Nigeria[12]. This further supports the possibility, that the secondary health facilities may actually be managing as much twin pregnancies as in tertiary hospitals. The study in a rural/semi urban hospital in South-eastern Nigeria also reported a higher incidence of twin pregnancy compared to a nearby teaching hospital[7]. The incidence observed is also higher that that reported from Jos, Kano and Maiduguri in North Central, North east and North western parts of Nigeria respectively[13, 14, 15]. This reflected the geographical and ethnic factors which influence the incidence of twin pregnancy.

Our study observed a higher frequency of twin pregnancy among women aged 25-29 years. This seems to be a variance with what is generally documented as being more common in older women due to rising follicle stimulating hormone. However, other studies have also noted similar finding in a hospital based studies like ours[12, 13, 15]. The Caesarean section rate of 34.8% was higher than the rate of 19.5% for singletons observed in the Centre. This is a reflection of the high risk nature of multiple pregnancy. This is however less than the rate of 51.9% observed in Uyo[12], 41.3% reported in Jos[13]. Studies in Kano and Maiduguri in Northern Nigeria reported lower Caesarean Section rates than that observed in our Centre. Could this reflect a variation inpattern of presentation during labour or a difference inpractice of twin delivery in different centres in the country? Worthy of note is the observation that 8(4.5%) patients had vaginal delivery of the first twin and subsequently had CS for delivery of the second twin, this reflect the fact that our facility is a secondary health care facility with most of the deliveries conducted by medical officers and midwives with less skills in conducting vaginal twin delivery. This is also reflected in the fact that retained second twin was the second commonest complication after preterm delivery in our study. It was also the second common indication for CS after abnormal presentation of the leading twin. Retention of the second twin has been described as an index of poor management of multiple birth and is often responsible for the higher maternal and perinatal mortality and morbidity as well as higher Caesarean section rates associated with multiple births[16,17]. This calls for more in service and pre service training of doctors and midwives on how to conduct vaginal twin delivery. It is not possible to refer all cases of twin pregnancy to tertiary hospitals in Nigeria, since a number of patients may not go, either due to financial constraints or ignorance of the high risk nature of multiple pregnancy.

Twin births are known to be associated with higher risk of poor perinatal outcome. Our study showed a higher stillbirth rate (112.7/1000 births) in twins compared to that of singleton births (63.1/1000 births) in the Centre. As expected, studies in tertiary centres within the country have reported lower stillbirth rates[14,18]. We expect the difference in perinatal mortality rate to be even higher due to inadequate trained personnel and facilities for neonatal care. The foetal outcome was better for the first twins evidenced by better 5minutes Apgar scores and lower stillbirth rates. This was statistically significant. The second twins have been noted to be at more risk of stillbirth than the first twin due to oxygen deficiency in the second twin as a result of premature separation of the placenta, reduced placenta circulation, increased interval between delivery of the two foetuses, and therefore increased oxygen deficiency, more frequent breech delivery among second twins[19]. Delayed delivery of the second twin constituted 18.3% of the complications of twin pregnancy in our series.

There was, however, no difference in Apgar score between twins delivered by Caesarean section compared with those delivered vaginally. Stillbirth rates were also not significantly different. These finding support the conclusion from a randomized trial of planned Caesarean Section(CS) or Vaginal delivery of twin pregnancy that 'planned CS did not significantly decrease or increase the risk of fetal or neonatal death or serious neonatal morbidity as compared with vaginal delivery in twin pregnancy between 33 and 38weeks 6days gestation, with the first twin in cephalic presentation'[20]. This finding is reassuring for obstetricians in low resource setting; more so for doctors and midwives in secondary health facility like ours where both human and material resources are scarce.

CONCLUSION

Twin pregnancy is common in our secondary health facility. It is associated with high maternal and foetal complications and a high stillbirth rate. Preterm delivery is the commonest foetal complication. Were commend more in-service training of midwives and doctors on skills in twin delivery, and decisions for specialised care should be taken early to improve foetal outcome.

TABLES

Table 1: Age distribution of patients

Age in years	N (%)
15-19	10 (6.0)
20-24	44 (26.3)
25-29	61 (36.6)
30-34	34 (20.4)
35-39	16 (9.6)
40-44	2 (1.2)
TOTAL	**167 (100.0)**

Table 2: Mode of delivery of twins

Mode of delivery	N (%)
Vaginal	116(65.2)
Caesarean section (CS)	54 (30.3)
Vaginal delivery 1st twin, CS 2nd Twin	8 (4.5)
TOTAL	**178 (100)**

Table 3: Pregnancy/labour complications

Complication	N (%)
Preterm labour	34 (47.9)
Retained 2nd twin	13 (18.3)
Primary postpartum haemorrhage*	5 (7.0)
Pre-eclampsia	4 (5.6)
Abruptio placenta	4 (5.6)
Placenta praevia	3 (4.2)
Fetal distress	2 (2.8)
Cord prolapse	2 (2.8)
Footling breech	2 (2.8)
Polyhydramnious	1 (1.4)
Ruptured uterus	1 (1.4)
TOTAL	**71 (100.0)**

*Requiring blood transfusion

Table 4: Indications for Caesarean section

Indication	N (%)
Abnormal presentation of leading twin	26 (41.9)
Retained 2nd twin	8 (12.9)
Previous Caesarean section	7 (11.3)
Failure to progress in labour	4 (6.5)
Pre-eclampsia	4 (6.5)
Placenta praevia	3 (4.8)
Primigravida with twin	3 (4.8)
Foetal distress	2 (3.2)
Cord prolapse	2 (3.2)
Abruptio placenta	1 (1.6)
Prolonged pregnancy	1 (1.6)
Ruptured uterus	1 (1.6)
TOTAL	**62 (100.0)**

Table 5: Presentation of twin pairs

Presentation	N (%)
Cephalic : Cephalic	78 (43.8)
Cephalic : Breech	41 (23)
Breech : Cephalic	24 (13.5)
Breech : Breech	26 (14.6)
TOTAL	**169 (100.0)**

Table 6: Cross tabulation of Apgar score*/still birth of twin 1 and 2

			Twin 1			
			Apgar	Apgar	Stillbirth	Total
Twin 2	Apgar score ≥7		116	10	5	**131**
	Apgar score ?		8	11	1	**20**
	Stillbirth		9	1	8	**18**
	Total		**133**	**22**	**14**	**169**

*Apgar score not stated in 9 deliveries
X^2 = 69.899, df 4, P = 0.0001

Table 7: weight category of twins

Weight category (kg)	Twin 1 (%)	Twin 2 (%)
Normal (≥2.50kg)	94 (56.6)	79 (47.3)
Low birth weight (1.50 – 2.49kg	59 (35.5)	74 (44.3)
Very low birth weight (1.00 – 1.49kg)	11 (6.6)	11 (6.6)
Extremely low birthweight (? 1.00kg)	2 (0.6)	3 (1.8)
Total	**166 (100.0)**	**167 (100.0)**

REFERENCES:

1. Hegeman MA, Bekedam DJ, Bloemenkamp KW, Kwee A, Papatsonis DN, van der Post JA, Lim AC et al. Pessaries in multiple pregnancy as prevention of preterm birth: the ProTwin Trial. BMC Pregnancy Childbirth 2009; 9: 44-48.
2. Nkyekyer K. Multiple Pregnancy. In: Kwawukume EY, Emuveyan EE (eds), Comphrensive Obstetrics in the Tropics. Asante and Hittscher Printing press limited; 2002: 166-167.
3. Orumabo CT. Multiple births in Port Harcourt: An analysis of associated biological variables and problems in classification of the growth retarded twin. Trop J ObstetGynaecol 1990; 9:9-12.
4. Nicholas Fisk. Multiple pregnancy. In : D Keith Edmonds (ed); Dewhurst textbook of Obstetrics and Gynaecology, 7th edition. Blackwell Publishing, Oxford University Press 2007; 162-172.
5. Knox G, Morley O. Twinning in Yoruba women. J ObstetGynaecol Br Emp. 1960; 67: 981-4
6. Azubuike JC. Multiple births in Igbo women. Br J ObstetGynaecol 1982; 18: 460-464
7. Sunday-Adeoye I, Twomey ED, Egwuatu VE. A 20 year review of twin births at Mater Misericordiae Hospital, Afikpo, South-Eastern Nigeria. Nig J ClinPract 2008; 11 (3):231-234.
8. Royal College of Obstetricians and Gynaecologists. Management of twin and triplet pregnancies in the antenatal period. NICE Clinical guideline 129. www.rcog.org.uk/en/guidelines-research-services/guidelines/management-of-twin-and-triplet-pregnancies-in-the-antenatal-period-nice-clinical-guideline-129/Published 1/9/2011.
9. Omolu A, Olajumoke MA. Twin pregnancy in Subsaharan Africa – Lagos experience. Journal of materno fetal and neonatal medicine. 2012; 25 (11): 2447-2450
10. Adinma JIB, Agbai AO. Multiple births in Nigeria Igbo women. J ObstetGynaecol 1997; 7(1):42-44
11. Obiechina NJ, Okoli VE,Eleje GU, Okechukwu ZC, Anemeje OA. Twin versus singleton pregnancies: the incidence, pregnancy compplications , and obstetric outcomes in a Nigerian tertiary hospital. International Journal of Women's Health 2011; 3:227-230
12. Aniekan MA, Anefiok JU, Ntiense MU, Dolapo GS. Incidence and mode of delivery of twin pregnancies in Uyo, Nigeria. Niger Med J 2010; 51 (4):170-172

13. Mutihir JT, Pam VC. Obstetric outcome of twin pregnancies in Jos, Nigeria. Nig J ClinPract 2007;10 (1):15-18
14. Ibrahim AY, Ayubba R. Twin Birth in Kano, Northern Nigeria. IOSR Journal of Pharmacy. 2013; 3(1): 4-8
15. Kullima AA, Audu BM, Geidam AD. Outcome of twin deliveries at the University of Maiduguri Teaching Hospital: A 5-year review. Nig J ClinPract 2011; 14 (3):345-348
16. Adinma JIB, Agbai AO. The second twin; retained and unretained. Tropical Doctor. 1995; 25: 132-133
17. Samra JS, Spillane H, MukoyokoJ, Tang L, ObhraiMS.Caesarean section for the birth of the second twin. Br J ObstetGynaecol. 1990; 97: 234 -236.
18. Godwin OA, Teddy EA, Olatunde O, Richard AO, Nathaniel DA. Review of twin Pregnancies in a Tertiary Hospital in Abuja, Nigeria. J Health PopulNutr 2013; 31 (2): 272-277
19. Smith GCS, Pell JP, Dobbie R. Birth order, gestational age and risk of delivery related perinatal death in twins: retrospective cohort study. BMJ 2002; 325: 1-4
20. Barrett JFR, Hannah ME, Hutton EK,Willan AR, Allen AC, ArmsonA, et al.for the twin birth study collaborative group. A randomizedtrial of planned caesarean or vaginal delivery for twin pregnancy, N Engl J Med 2013;369:1295-305.